



**LAPORAN  
TAHUNAN  
1988-89  
UNIVERSITI PERTANIAN MALAYSIA**

# UNIVERSITI PERTANIAN MALAYSIA

## LAPORAN TAHUNAN 1988-1989

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## LAPURAN NAIB CANSOLOR

### NAIB CANSOLOR

Profesor Tan Sri Dato' Dr. Nayan bin Ariffin, P.S.M., D.S.S.A., D.S.P.N., J.S.M., Dip. Agric. (Malaya), B.S., M.S. (Louisiana State), Ph.D. (Wis.).

### MAJLIS

**Mesyuarat.** Majlis telah bersidang sebanyak empat kali untuk mesyuarat biasa dan sekali untuk mesyuarat khas (mesyuarat ke-79 hingga ke-83) sepanjang tempoh laporan. Kesemua mesyuarat itu diadakan di Kampus Serdang.

**Perubahan keanggotaan.** Beberapa orang anggota Majlis yang telah tamat tempoh lantikan mereka pada akhir tahun 1988 telah dilantik semula bagi tempoh selama tiga tahun lagi. Mereka terdiri daripada Y.M. Raja Tan Sri Muhammad Alias bin Raja Muhammad Ali, Y. Bhg. Datuk Haji Safri Awang bin Haji Zaidell, Y. Bhg. Dato' Haji Wan Nik bin Ismail, Y. Bhg. Dato' Dr. Haji Mohd. Noordin bin Haji Keling, Y. Bhg. Dato' Haji Mohd. Noor bin Ismail, Y. Bhg. Dato' Mohd. Yusoff bin Haji Amin, Profesor Dr. Abdul Manap bin Ahmad, dan Profesor Dr. Mohd. Ariff bin Hussein. Dua orang anggota Majlis telah berhenti: Y. Bhg. Dato' Wan Mansor bin Abdullah, wakil tetap Ketua Pengarah Perkhidmatan Awam Malaysia, kerana persaraan daripada perkhidmatan Kerajaan; dan Y. Bhg. Tan Sri Gan Teck Yeow kerana tamat tempoh lantikan dan menarik diri daripada dicalonkan untuk lantikan semula atas sebab-sebab kesihatan. Majlis mengalu-alukan kehadiran dua orang anggota baru: Encik Abdul Rahman bin Haji Ahmad mewakili Ketua Pengarah Perkhidmatan Awam Malaysia; dan Ir Choa Swee Lin, yang telah dilantik sebagai anggota Majlis mengikut seksyen 15(1)(c) Perlembagaan Universiti.

**Tahniah.** Majlis merakamkan ucapan setinggi-tinggi tahniah kepada:-

\* Y. Bhg. Profesor Dato' Dr. Kamarudin bin Haji Kachar, Timbalan Naib Canselor (Hal Ehwal Pelajar), atas kurniaan Darjah Dato' Setia Negeri Sembilan (DSNS) sempena ulang tahun ke-66 hari keputeraan Duli Yang Maha Mulia Yang Di Pertua Besar Negeri Sembilan pada 19 Julai 1988; dan

\* Profesor Dr. Sulaiman bin Haji Mohd. Yassin atas perlantikan beliau sebagai Timbalan Naib Canselor (Hal Ehwal Pelajar) bagi tempoh tiga tahun mulai 1 September 1988.

**Penghargaan.** Majlis merakamkan penghargaan dan ucapan setinggi-tinggi terima kasih kepada Y. Bhg. Dato' Wan Mansor bin Abdullah dan Y. Bhg. Tan Sri Gan Teck Yeow atas segala sumbangan yang telah mereka berikan semasa menjadi anggota Majlis.

### SENAT

#### Laporan Mesyuarat Senat Sesi 1988/89

Sepanjang sesi 1988/89, Senat Universiti telah bersidang untuk 12 mesyuarat biasa dan 1 mesyuarat khas. Di antara perkara-perkara penting yang diputuskan ialah:

1. Pemulihan Jawatankuasa Konferensi, Seminar dan Workshop Antarabangsa.
2. Perlantikan baru empat dan perlantikan semula empat Pesekutu Akademik Fakulti Perikanan dan Sains Samudera 1988/89.
3. Menetapkan bidang rujukan Jawatankuasa Perancangan Akademik.
4. Meluluskan Peraturan-peraturan Universiti Pertanian Malaysia (Tatacara Lembaga Akademik Kampus Bintulu) 1988.
5. Meluluskan Statut Universiti Pertanian Malaysia (Fakulti dan Pusat) 1989.

**PEMERIKSA/PENILAI LUAR SESI 1988/89**

Universiti Pertanian Malaysia telah melantik seramai 19 orang Pemeriksa/Penilai Luar bagi program-program bachelour seperti berikut:-

Bil.	Pemeriksa/Penilai Luar	Dari	Untuk Program
1.	Prof. Susan Faunce Dev	University of London, England.	B.S. Perakaunan
2.	Prof. A.K. Kochhar	University of Bradford, England.	B.K. (Mekanikal/Sistem)
3.	Prof. John Geisler	Western Michigan University, USA	B. Pend. (Bimbingan dan Kaunseling)
4.	Prof. Robert N. Singer	Florida State University, USA	B. Pend. (Pendidikan Jasmani)
5.	Prof. William E. Drake	Cornell University, USA.	B. Pend. (Sains Pertanian)
6.	Dr. Mashudi b. Haji Abd. Kader	Universiti Sains Malaysia	B. Pend. (Pengajaran Bahasa Malaysia Sebagai Bahasa Pertama)
7.	Prof. Chiyono Matsushima	Kyolitsu Woman's University, Japan	B. Pend. (Sains Rumahtangga)
8.	Prof. Ian Stewart Ferguson	University of Melbourne, Australia	B. S. (Perhutanan)
9.	Prof. G.S. Khush	International Rice Research Institute, Manila	B.S. Pertanian
10.	Prof. Linda Jean Nelson	Michigan State University, USA	B.S. (Pembangunan Manusia)
11.	Prof. N. Thomas Stephens	Florida Institute of Technology, USA	B.S. (Alam Sekitar)
12.	Prof. J.H. Loxton	Macquarie University, Australia	B.S. (Kepujian)
13.	Prof. D.J. Evans	University of Technology, UK	B.S. Komputer
14.	Prof. Evan Wyn-Jones	University of Salford, UK	B.S. dengan Pendidikan (Kepujian)/B.S. (Kepujian)
15.	Dr. Mary Davidson Earle	Massey University, New Zealand.	B.S. Teknologi Makanan
16.	Dato' Dr. Ahmad Mustafa bin Hj. Babjee	Pengerusi Majlis Veterinar Malaysia	Doktor Perubatan Veterinar
17.	Prof. David. R. Lindsay	University of Western Australia	Doktor Perubatan Veterinar
18.	Prof. Donald L. Dungenworth	University of California, USA	Doktor Perubatan Veterinar
19.	Prof. Neil Gorman	University of Glasgow, Scotland.	Doktor Perubatan Veterinar

**KEMASUKAN DAN REKOD****(a) Program Pengajian**

Pada sesi 1988/89 Universiti Pertanian Malaysia telah menawarkan program-program di peringkat Master dan Doktor Falsafah, 24 program di peringkat Bachelour, 8 program di peringkat Diploma, satu program Matrikulasi Sains, satu program Matrikulasi (TESL) dan satu program Pendahuluan. Senarai penuh program yang ditawarkan ialah seperti berikut:-

## Pengajian Siswazah

Master Sains  
Master Sains Pertanian  
Master Kejuruteraan (Pertanian)  
Master Sains Veterinar  
Master Sains dan Teknologi Makanan  
Master Pentadbiran Perniagaan  
Doktor Falsafah  
Doktor Kejuruteraan (Pertanian)  
Doktor Sains Veterinar

## Kampus

Serdang  
Serdang  
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Serdang

Jangkamasa untuk pengajian siswazah adalah seperti berikut:-

Program Master penuh masa	2 – 6 semester
Program Master separuh masa	4 – 10 semester
Program Ph. D penuh masa	4 – 10 semester
Program Ph. D separuh masa	6 – 12 semester

## Program Bacelor

Doktor Perubatan Veterinar  
Bacelor Sains Pertanian  
Bacelor Sains Perhutanan  
Bacelor Sains (Perniagaantani)  
Bacelor Sains (Ekonomi Sumber)  
Bacelor Sains (Kepujian)  
Bacelor Sains (Bioteknologi)  
Bacelor Sains (Alam Sekitar)  
Bacelor Kejuruteraan (Pertanian)  
Bacelor Sains dan Teknologi Makanan  
Bacelor Sains (Pembangunan Manusia)  
Bacelor Sains Perikanan  
Bacelor Pendidikan (Sains Pertanian)  
Bacelor Pendidikan (Sains Rumahtangga)  
Bacelor Pendidikan (Pendidikan Jasmani)  
Bacelor Pendidikan (Bimbingan & Kaunseling)  
Bacelor Pendidikan (Pengajaran Bahasa Malaysia sebagai Bahasa Pertama)  
Bacelor Pendidikan (Pengajaran Bahasa Inggeris sebagai Bahasa Kedua)  
Bacelor Sains Komputer  
Bacelor Kejuruteraan (Awam)  
Bacelor Kejuruteraan (Mekanikal/Sistem)  
Bacelor Kejuruteraan (Elektronik/Komputer)  
Bacelor Perakaunan  
Bacelor Sains Hortikultur

## Jangkamasa

10 semester  
8 semester  
8 semester  
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## Kampus

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## Program Diploma

Diploma Pertanian	6 semester	Serdang & Bintulu
Diploma Kesihatan Haiwan dan Penternakan	7 semester	Serdang
Diploma Perikanan	6 semester	Serdang
Diploma Pembangunan Manusia	6 semester	Serdang
Diploma Kejuruteraan Pertanian	6 semester	Serdang
Diploma Perhutanan	6 semester	Bintulu
Diploma Sains Komputer	6 semester	Serdang
Diploma Perniagaantani	6 semester	Bintulu
Program Pendahuluan	2 semester	Bintulu
Matrikulasi Sains	4 semester	Serdang
Matrikulasi (TESL)	4 semester	Serdang

### (b) Pengambilan Pelajar

Bilangan pelajar baru yang diterima masuk bagi program-program tersebut di atas adalah seperti berikut:-

Pengajian Siswazah	173 orang
Program Bachelo	1,436 orang
Program Diploma	1,167 orang
Program Pendahuluan	70 orang
Matrikulasi Sains	532 orang
Matrikulasi TESL	40 orang

Jadual 1 menunjukkan taburan pengambilan pelajar baru bagi sesi 1988/89 mengikut program dan jantina.

### (c) Pendaftaran Pelajar

Seramai 8,920 orang pelajar telah mendaftarkan diri pada Semester Julai dan 8,589 orang pada Semester Disember untuk mengikuti berbagai

program yang terdapat di kampus Serdang dan Bintulu, (termasuk program pengajian siswazah. Jadual II, III dan IV menunjukkan taburan pelajar yang mendaftar untuk semua program bagi kedua-dua Semester sesi 1988/89 ini).

### (d) Siswazah

Pada akhir sesi 1988/89 seramai 1,773 orang pelajar telah tamat pengajian mereka dengan jayanya dan akan dikurniakan ijazah atau diploma masing-masing. Pecahan bilangan siswazah ini adalah:-

M.B.A.	1 orang
Master Sains Pertanian	5 orang
Master Sains	23 orang
Ph. D	11 orang
Bachelor	1,072 orang
Diploma	661 orang

Jadual V menunjukkan taburan siswazah mengikut program dan jantina bagi sesi 1988/89.

**JADUAL 1**  
**TABURAN PENGAMBILAN PELAJAR MENGIKUT**  
**PROGRAM DAN JANTINA BAGI TAHUN AKADEMIK 1988/89**

Program	Lelaki	Perempuan	Jumlah
Diploma Pertanian (Serdang)	221	169	390
(Bintulu)	114	71	185
Diploma Pembangunan Manusia	8	84	92
Diploma Kesihatan Haiwan dan Penternakan	41	39	80
Diploma Perikanan	75	20	95
Diploma Perhutanan	68	7	75
Matrikulasi Sains	271	261	532
Matrikulasi (TESL)	6	34	40

Diploma Kejuruteraan Pertanian	68	28	96
Diploma Perniagaantani	30	46	76
Diploma Sains Komputer	26	52	78
Pendahuluan	45	25	70
<b>Jumlah Kecil</b>	<b>973</b>	<b>836</b>	<b>1809</b>
Bachelor Sains Hortikultur	32	34	66
Bachelor Sains Pertanian	78	34	112
Bachelor Sains (Pembangunan Manusia)	6	48	54
Bachelor Sains (Perniagaantani)	61	67	128
Bachelor Sains (Ekonomi Sumber)	43	29	72
Bachelor Perakaunan	23	35	58
Doktor Perubatan Veterinar	13	18	31
Bachelor Sains Perhutanan	39	3	42
Bachelor Sains dan Teknologi Makanan	20	31	51
Bachelor Sains (Kepujian)	81	55	136
Bachelor Sains (Bioteknologi)	15	12	27
Bachelor Sains (Alam Sekitar)	9	8	17
Bachelor Sains Komputer	22	16	38
Bachelor Sains Perikanan	23	5	28
Bachelor Kejuruteraan (Pertanian)	30	4	34
Bachelor Kejuruteraan (Awam)	21	4	25
Bachelor Kej. (Elektronik/Komputer)	45	2	47
Bachelor Kejuruteraan (Mekanikal/Sistem)	44	2	46
Bachelor Pend. (Sains Pertanian)	25	11	36
Bachelor Pend. (Sains Rumah Tangga)	—	26	26
Bachelor Pend. (Pendidikan Jasmani)	41	14	55
Bachelor Pend. (Bimb. & Kaunseling)	38	14	52
Bachelor Pend. (Pengajaran Bahasa Malaysia Sebagai Bahasa Pertama)	90	64	154
Bachelor Pend. (Pengajaran Bahasa Inggeris Sebagai Bahasa Kedua)	40	61	101
<b>Jumlah Kecil</b>	<b>839</b>	<b>597</b>	<b>1436</b>
MBA	11	2	13
Master Sains	88	43	131
Ph. D	26	3	29
<b>Jumlah Kecil</b>	<b>125</b>	<b>48</b>	<b>173</b>
<b>JUMLAH BESAR</b>	<b>1937</b>	<b>1481</b>	<b>3418</b>

**JADUAL II**  
**TABURAN PELAJAR MENGIKUT PROGRAM**  
**SEMESTER TAHUN AKADEMIK 1988/89 (KAMPUS SERDANG)**

FAKULTI	PROGRAM	TAHUN											
		SEMESTER I						SEMESTER II					
		I	II	III	IV	V	J	I	II	III	IV	V	J
Ekonomi dan Pengurusan	Bachelor Sains (Perniagaantani)	128	102	182	124	—	536	128	97	182	123	—	530
	Bachelor Sains (Ekonomi Sumber)	72	61	65	51	—	249	71	60	64	50	—	245
	Bachelor Perakaunan	58	41	44	43	—	186	58	41	44	43	—	186
	Diploma Perniagaantani	—	87	56	—	—	143	—	88	50	—	—	138
	Jumlah	258	291	347	218	—	1114	257	286	340	216	—	1099
Kedokteran Veterinar & Sains Peternakan	Doktor Perubatan Veterinar	31	18	17	21	29	116	31	18	17	21	29	166
	Diploma Kesihatan Haiwan & Peternakan	80	39	33	52	—	204	81	39	33	—	—	153
	Jumlah	111	57	50	73	29	320	112	57	50	21	29	269
Kejuruteraan	Bachelor Kejuruteraan (Pertanian)	34	30	17	22	—	103	32	30	17	21	—	100
	Bachelor Kejuruteraan (Awam)	25	6	21	20	—	72	21	7	21	18	—	67
	Bachelor Kejuruteraan (Elektronik/Komputer)	47	25	26	20	—	118	46	25	25	20	—	116
	Bachelor Kejuruteraan (Mekanikal/Sistem)	46	19	21	15	—	101	45	19	21	14	—	99
	Diploma Kejuruteraan Pertanian	96	82	54	—	—	232	96	82	47	—	—	225
	Jumlah	248	162	139	77	—	626	240	163	131	73	—	607
Perhutanan	Bachelor Sains Perhutanan	42	49	14	35	—	140	43	49	15	34	—	141
	Bachelor Sains dan Teknologi Makanan	51	29	19	13	—	112	52	29	19	13	—	113
Sains Makanan dan Bioteknologi	Bachelor Sains Bioteknologi	27	30	18	—	—	75	26	30	18	—	—	74
	Jumlah	78	59	37	13	—	187	78	59	37	13	—	187
Pengajian Pendidikan	Bac. Pend. (Sains Pertanian)	36	34	31	22	—	123	36	34	31	20	—	121
	Bac. Pend. (Sains Rumahtangga)	26	20	21	23	—	90	26	20	21	3	—	70
	Bac. Pend. (Pendidikan Jasmani)	55	52	53	43	—	203	54	52	53	33	—	192

FAKULTI	PROGRAM	SEMESTER I						SEMESTER II					
		I	II	III	IV	V	J	I	II	III	IV	V	J
	Bac. Pend. (Peng. Bahasa M'sia sebagai Bahasa Pertama)	154	154	123	114	—	545	153	155	123	15	—	446
	Bac. Pend. (Bimbingan dan Kaunseling)	52	51	49	52	—	204	51	51	49	51	—	202
	Bac. Pend. (Pengajaran Bahasa Inggeris sebagai Bahasa Kedua)	101	99	79	91	—	307	102	99	79	1	—	281
	Bac. Pend. (Pengajaran Bahasa Inggeris sebagai Bahasa Kedua)	101	99	79	91	—	307	102	99	79	1	—	281
	Jumlah	424	410	356	345	—	1535	422	411	356	123	—	1312
Pertanian	Bachelor Sains Hortikultur	66	59	14	—	—	139	66	59	14	—	—	139
	Bachelor Sains Pertanian	112	101	56	127	—	396	111	103	56	126	—	396
	Bac. Sains (Pembangunan Manusia)	54	35	31	23	—	143	54	34	31	22	—	141
	Diploma Pertanian	390	302	245	—	—	937	390	303	243	—	—	936
	Diploma Pembangunan Manusia	92	50	43	—	—	185	93	50	41	—	—	184
	Jumlah	714	547	389	150	—	1800	714	549	385	148	—	1796
Sains dan Pengajian Alam Sekitar	Bachelor Sains (Kepujian)	136	28	33	50	—	247	100	55	34	28	—	217
	Bac. Sains dgn. Pendidikan (Kep.)	—	—	45	22	—	67	—	—	45	22	—	67
	Bachelor Sains (Alam Sekitar)	17	15	13	6	—	51	16	15	13	6	—	50
	Bachelor Sains Komputer	38	21	42	37	—	138	28	27	42	36	—	133
	Dip. Sains dengan Pendidikan	—	—	14	—	—	14	—	—	—	—	—	—
	Diploma Sains Komputer	78	70	46	—	—	194	78	69	50	—	—	197
	Jumlah	269	134	193	115	—	711	222	166	184	92	—	664
Perikanan & Sains Samudera	Bachelor Sains Perikanan	28	19	20	15	—	82	28	19	19	12	—	664
	Diploma Perikanan	95	73	51	—	—	219	95	73	51	—	—	219
	Jumlah	123	92	71	15	—	301	123	92	70	12	—	297
	Matrikulasi Sains	532	496	—	—	—	1028	531	495	—	—	—	1026
	Matrikulasi (TESL)	40	118	—	—	—	158	41	118	—	—	—	159
	JUMLAH BESAR	2839	2415	1596	1041	29	7920	2783	2445	1568	732	19	7557

**JADUAL III**  
**TABURAN PELAJAR MENGIKUT PROGRAM DAN**  
**SEMESTER TAHUN AKADEMIK 1988/89 (KAMPUS BINTULU)**

TAHUN	SEMESTER I				SEMESTER III			
	I	II	III	J	I	II	III	J
Diploma Pertanian	185	125	64	374	184	121	63	368
Diploma Perhutanan	75	50	44	169	73	38	45	156
Dip. Perniagaantani	76	—	—	76	75	—	—	75
Pendahuluan	70	—	—	70	70	—	—	70
Jumlah	406	175	108	689	402	159	108	669

**JADUAL IV**  
**TABURAN PELAJAR-PELAJAR PENGAJIAN SISWAZAH MENGIKUT**  
**FAKULTI DAN SEMESTER BAGI TAHUN AKADEMIK 1988/89**

FAKULTI/PUSAT	SEMESTER I				SEMESTER II			
	MBA	Master	Ph.D	J	MBA	Master	Ph.D	J
Ekonomi dan Pengurusan	27	18	9	54	22	17	10	49
Kedoktoran Vet. & Sains Peternakan	—	11	20	31	—	15	21	36
Kejuruteraan	—	7	2	9	—	11	2	13
Pengajian Pendidikan	—	23	8	31	—	35	8	43
Pertanian	—	30	23	53	—	32	24	56
Sains & Pengajian Alam Sekitar	—	15	2	17	—	16	6	22
Perikanan & Sains Sains Samudera	—	8	7	15	—	12	8	20
Sains Makanan dan Bioteknologi	—	14	6	20	—	19	6	25
Pusat Pengembangan & Pend. Lanjutan	—	46	14	60	—	55	18	73
Perhutanan	—	16	5	21	—	20	6	26
JUMLAH	27	188	96	311	22	232	109	363

**JADUAL V**  
**TABURAN SISWAZAH MENGIKUT PROGRAM**  
**DAN JANTINA BAGI TAHUN 1988/89**

Program	Lelaki	Perempuan	Jumlah
Diploma Pertanian	247	64	311
Diploma Pembangunan Manusia	4	40	44
Diploma Sains dgn. Pendidikan	9	4	13
Diploma Perikanan	45	7	52
Dip. Kesihatan Haiwan & Peternakan	43	9	52
Diploma Kejuruteraan Pertanian	35	5	40
Diploma Perhutanan	42	5	47
Diploma Perniagaantani	29	23	52
Diploma Sains Komputer	40	10	50
<b>Jumlah Kecil</b>	<b>494</b>	<b>167</b>	<b>661</b>
Bachelor Sains (Perniagaantani)	98	72	170
Bachelor Sains (Ekonomi Sumber)	37	30	67
Bachelor Perakaunan	15	27	42
Bachelor Sains Pertanian	89	35	124
Bachelor Sains (Pembangunan Manusia)	4	20	24
Bachelor Sains & Teknologi Makanan	2	11	13
Bachelor Sains (Perhutanan)	32	1	33
Doktor Perubatan Veterinar	14	10	24
Bachelor Kejuruteraan (Pertanian)	21	—	21
Bachelor Kejuruteraan (Awam)	14	3	17
Bachelor Kejuruteraan (Elek./Komputer)	15	2	17
Bachelor Kejuruteraan (Mekanikal/Sistem)	14	—	14
Bachelor Sains (Alam Sekitar)	5	2	7
Bachelor Sains (Kepujian)	32	22	54
Bachelor Sains dgn. Pend. (Kepujian)	4	17	21
Bachelor Pendidikan (Sains Pertanian)	22	12	34
Bachelor Pend. (Sains Rumahtangga)	—	25	25
Bachelor Pend. (Pendidikan Jasmani)	37	8	45
Bachelor Pend. (Bimb. & Kaunseling)	41	11	52
Bachelor Sains (Perikanan)	19	3	22
Bachelor Pend. (Pengajaran B. Malaysia sebagai Bahasa Kedua)	36	53	89
Bachelor Sains Komputer	28	15	43
<b>Jumlah Kecil</b>	<b>663</b>	<b>409</b>	<b>1072</b>
MBA	—	1	1
Master Sains Pertanian	—	5	5
Master Sains	15	8	23
Ph. D	7	4	11
<b>Jumlah Kecil</b>	<b>22</b>	<b>18</b>	<b>40</b>
<b>JUMLAH BESAR</b>	<b>1179</b>	<b>594</b>	<b>1773</b>

## PERJAWATAN

Seperti pada tahun-tahun 1988/89 tidak ada jawatan baru yang diwujudkan kerana arahan pembekuan jawatan oleh Kerajaan Malaysia masih berkuatkuasa, malah sebanyak 2 jawatan dimansuhkan oleh Kerajaan iaitu dari Kumpulan D. Dengan ini jumlah jawatan di Universiti ini ialah 4415. Jumlah tersebut terbahagi kepada 1242 jawatan Kumpulan A, 151 Kumpulan B, 918 Kumpulan C dan 2104 Kumpulan D.

Dalam tempoh antara bulan Julai 1986 hingga Mei 1987 seramai 135 orang telah dilantik ke perkhidmatan Universiti Pertanian Malaysia, untuk mengisi 53 jawatan bagi Kumpulan A, 2 Kumpulan B, 31 Kumpulan C selebihnya sebanyak 49 jawatan bagi Kumpulan D. Bagi jawatan-jawatan dalam Kumpulan C dan D adalah termasuk jawatan yang bertaraf tetap, sementara dan sambilan.

### Perletakan Jawatan

Dalam tempoh yang sama juga seramai 21 orang telah meletakkan jawatan iaitu 11 orang dari Kumpulan A, 2 orang dari Kumpulan B, dan 8 orang lagi dari Kumpulan D.

### Tatatertib

Sebanyak 14 kes tatatertib yang telah dibicarakan oleh Lembaga Tatatertib, 6 orang daripadanya telah disabitkan dengan berbagai kesalahan dan telah diberhentikan kerja, kes-kes lain telah dikenakan hukuman tertentu mengikut peraturan tatatertib yang berkuatkuasa.

### Kenaikan Pangkat

Lima puluh lima orang pegawai telah dinaikkan pangkat dalam tempoh antara bulan Julai 1985 hingga Mei 1986. Dari jumlah tersebut 36 dari Kumpulan A, 2 dari Kumpulan B, 11 dalam Kumpulan C dan 6 orang lagi dari Kumpulan D.

### Latihan

Unit Latihan Bahagian Perjawatan Universiti Pertanian Malaysia sentiasa mengambil perhatian tentang kepentingan perkhidmatan bagi semua golongan pegawai di Universiti ini. Latihan adalah merupakan salah satu aspek

penting dan berkesan dalam meninggalkan mutu kerja serta memberi dorongan kepada pekerja-pekerja untuk memajukan kerjayanya.

Untuk itu seramai 37 orang tenaga pengajar telah dihantar untuk melanjutkan pelajarannya ke peringkat Ph. D, 6 di peringkat Master.

Dalam pada itu seramai 32 orang telahpun menamatkan kursus Ph. D dan 10 orang di peringkat Master dalam jangkamasa yang sama dan telah berkhidmat semula. Untuk kursus-kursus pendek di luar negeri, Unit Latihan juga telah menghantar seramai 65 orang pegawai untuk mengikuti kursus/seminar di bawah bantuan luar serta bantuan kewangan yang disalurkan melalui Jabatan Perkhidmatan Awam.

Unit Latihan, Bahagian Perjawatan, Universiti ini telah mengendalikan 15 program kursus dalam perkhidmatan iaitu 5 program bagi Kumpulan A dan B, 6 Kumpulan C, 4 Kumpulan D. Di samping itu seramai 81 orang dari semua kategori pegawai telah dihantar mengikut berbagai kursus pendek di Institusi-institusi Latihan dalam negeri seperti INTAN, Persatuan Badan-badan Berkanun, PDPN, CIAST, Jabatan Kerja Raya, Institut Latihan Perindustrian Negara dan lain-lain. Latihan yang diberi adalah diharapkan dapat meningkatkan prestasi kerja kakitangan Universiti ini.

## PENYELIDIKAN

Penyelidikan adalah satu daripada tiga objektif utama Universiti seperti termaktub dalam Perintah (Perbadanan) Universiti Pertanian Malaysia 1971 (P.U.(A) 387/71).

Kegiatan penyelidikan dipusatkan melalui konsep teras dengan mengenalpasti penyelidikan. Program penyelidikan utama yang dijalankan di Universiti ini adalah seperti yang disenaraikan di bawah ini:

### SEKTOR PERTANIAN

- Bioteknologi Enzim dan Mikrobial: Perkembangan Sains dan Teknologi untuk Pengeluaran Cendawan di atas Sisa Pertanian di Malaysia.
- Bioteknologi Haiwan.

- Bioteknologi Tumbuhan-Kultur Tisu Tumbuhan.
  - Kajian Pembaikan Pengeluaran dan Amalan Lepas Tuai pada Berbagai Jenis Buah-buahan Tropika.
  - Kajian mengenai Ciri-ciri Psikokimia Kanji Tempatan.
  - Kejenteraan dan Pembangunan Jentera.
  - Kejuruteraan Pengabadian Tanah dan Air.
  - Memperkenalkan Tanaman Baru (Eksotika) di Malaysia.
  - Mempertingkatkan Pengeluaran Penghasilan Koko Melalui Pengurusan Perosak dan Tanaman yang Lebih Baik.
  - Meningkatkan Pengeluaran Tanaman Makanan.
  - Pembangunan Teknologi Sesuai dan Berkesan untuk Tangkapan Ikan di Laut Dalam.
  - Pembangunan Teknologi Sesuai untuk Akuakultur.
  - Pembaikan Hasil dan Mutu Cili Menerusi Pengurusan Agronomi.
  - Pemeliharaan Janaplasma Beberapa Tanaman Hiasan Terpilih bagi Kegunaan Landskap Perbandaran dan Kajian Mengenai Persepsi Landskap Secara Visual dan Penilaian Pemandangan.
  - Pemprosesan dan Pengawitan Ikan Air Tawar.
  - Pemuliharaan dan Pembaikan Haiwan Tempatan.
  - Pencirian dan Pengurusan Tanah-tanah Bermasalah.
  - Pengeluaran yang Efisien bagi Lada Hitam di Sarawak.
  - Pengeluaran Varieti Kacang Tanah Berhasil Tinggi Melalui Input Minimum.
  - Pengurusan Agro-ekosistem Tanaman Perladangan: Peninggian Produktiviti Kelapa Sawit Menerusi Perkembangan dan Pembinaan yang Efisien.
  - Penggunaan Teknik Tomografi dalam Pertanian.
  - Pengurusan Hutan Bukit.
  - Pengurusan Optimum Ladang Hutan.
  - Pengurusan Perikanan dalam Perairan Malaysia.
  - Penyelidikan Terhadap Pengeluaran Tanaman Menerusi Berbagai Sistem Tanpa Tanah.
  - Perkembangan Sumber-sumber Bahan Makanan Ternakan Baru.
  - Sistem Pengeluaran Ternakan dalam Kawasan Tropika.
  - Teknologi Lepas Tuai.
  - Virus Tumbuhan: Pencirian dan Pengawalannya.
- SEKTOR PERINDUSTRIAN**
- Bahan dan Struktur.
  - Bioteknologi Enzim dan Mikrob Lemak dan Minyak.
  - Kimia Pemprosesan Gunaan.
  - Penggunaan Optimum Sumber Hutan.
  - Pengotomatikan dan Penggunaan Komputer dalam Perindustrian.
  - Perkembangan Produk.
  - Sumber Tekstil dan Pakaian.
  - Teknologi Penapaian.
  - Unit Operasi Kejuruteraan Makanan.
- SEKTOR PERUBATAN**
- Kesihatan Keluarga dan Masyarakat.

- Kajian Oseonografi di Pinggir Laut China Selatan dan Selat Melaka.
- Kenalpasti Penunjuk Biologi bagi Kualiti Air dan Perubahan Alam Sekitar.
- Kepimpinan Wanita di Malaysia.
- Kimia Sintesis dan Analisis.
- Kualiti Alam Sekitar dan Cara Pengawasan Pencemaran.
- Matematik Tulen/Gunaan.
- Pembangunan Keluarga dan Penggunaan Sumber untuk Meningkatkan Kualiti Hidup
- Pemuliharaan dan Penggunaan Sumber Tumbuhan.
- Penyediaan dan Pencirian Bahan-bahan Magnet dan Semikonduktor.
- Perkembangan Kaedah-kaedah Analisis Kimia bagi Logam Berat dan Penggunaannya dalam Hasil/Bahan-bahan Buangan dalam Bidang Pertanian dan Perindustrian.
- Program-program Penggunaan Tanah dan Latihan dalam Perkhidmatan untuk Membangunkan Kawasan Desa.
- Rekreasi Luar, Perhutanan Bandar dan Pembangunan Pelancongan.
- Superkonduktor Suhu Tinggi.
- Teknologi Sisa Pertanian dan Industri.
- Sistem Penyelidikan Pembangunan Mengenai Keluarga dan Kesihatan.

#### **SEKTOR STRATEGIK**

- Analisa Ekonomi Sistem Pertanian dan Implikasi Dasar: Perspektif Makro dan Mikro.
- Biologi dan Ekologi Patogen dan Perosak.
- Biokimia Racun Perosak.
- Biokimia Tanaman Utama.

- Bioteknologi Asas.
- Ekonomi Sumber Asli dan Pengurusan Akuakultur.
- Instrumentasi.
- Kajian Genetik dalam Tumbuhan dan Haiwan dari Segi Kepentingan Ekonomi dan juga dalam Populasi Manusia.
- Kajian Kimia Ke Atas Sebatian Aktif Biologi.

#### **PEMBANGUNAN**

Pada tahun akademik 1988/1989 projek-projek yang telah dapat disiapkan adalah seperti berikut:-

##### **Kampus Serdang**

- \* Bangunan dan Studio Landskap
- \* Pusat Islam
- \* Pusat Bahasa

##### **Kuala Terengganu**

- \* Perpustakaan

##### **Kampus Cawangan Bintulu, Sarawak**

- \* Bangunan Pentadbiran
- \* Landskap

Projek yang sedang dalam pelaksanaan sekarang adalah:-

##### **Kampus Serdang**

- \* Fakulti Pengajian Pendidikan
- \* 3 Buah Rumah Pengetua Kolej Kediaman
- \* Bangunan Pusat Jualan
- \* Bangunan Matematik
- \* Bangunan Tambahan Fakulti Sains Makanan dan Bioteknologi

##### **Port Dickson**

- \* Pusat Oseanografi dan Marikultur

##### **Kuala Terengganu**

- \* Asrama Tiga Tingkat

## BAHAGIAN HAL EHWAL PELAJAR

### Latarbelakang dan Matlamat

1. Perhubungan Pelajar
2. Kaunseling dan Kerjaya
3. Kesihatan
4. Perumahan
5. Agama dan Kerohanian
6. Sukan dan Rekreasi
7. Kebudayaan dan Kesenian

### Unit Perhubungan Pelajar

Unit Perhubungan Pelajar merupakan salah satu unit yang penting di dalam Bahagian Hal Ehwal Pelajar. Sebagaimana dengan unit-unit lain, unit ini juga berurusan terus dengan pelajar-pelajar mengenai perkara-perkara seperti aktiviti-aktiviti ko-kurikulum dan Tatatertib Pelajar.

#### Aktiviti-aktiviti Ko-Kurikular

Dengan adanya persatuan-persatuan pelajar aktiviti-aktiviti dapat dirancang dan dijalankan secara yang lebih berkesan dan berterusan. Di

#### 1. Kegiatan Kesatuan

Persatuan	Bil. Persatuan	Bi. Kegiatan
a. MPP dan Persatuan Fakulti	12	70
b. Persatuan Pakaian Seragam	4	40
c. Kolej-Kolej Kediaman	10	50
d. Majlis Perwakilan Pelajar Sabah/Sarawak	2	16

#### 2. Laporan Tatatertib

- a. Bil. kes yang dibicarakan = 19

#### 3. Laporan Projek Lawatan Sambil Belajar (Ke luar negara)

- a. Bil. projek lawatan sambil belajar ke luar negara = 7

#### 4. Laporan Seminar/Kursus/Forum/Bengkel dan Lain-lain Yang Dianjurkan Oleh Hal Ehwal Pelajar Kepada Pelajar

- a. Bil. Seminar/Kursus/Forum/Bengkel yang telah dianjurkan oleh HEP kepada pelajar = 25

samping itu, persatuan juga merupakan pentas kepada mana-mana pelajar yang mahu mengasah bakat dalam pelbagai bidang termasuk bidang yang paling penting sekali iaitu 'Kepimpinan'.

Di Universiti kita, terdapat 27 buah persatuan berdaftar yang menjalankan pelbagai aktiviti sepanjang sesi pengajian.

Penubuhan Majlis Perwakilan Pelajar di setiap Universiti Tempatan termasuklah Universiti kita, adalah menuruti sebagaimana kehendak Fasal 48, Akta Universiti dan Kolej Universiti 1971 – Akta Tambahan A 295, manakala penubuhan persatuan pelajar yang lain adalah di bawah fasal 49 Akta yang sama seperti di atas.

Unit Perhubungan Pelajar menjadi sekretariat kepada semua pengurusan pentadbiran kegiatan-kegiatan persatuan pelajar dan individu seperti projek lawatan/kegiatan pelajar.

Selain daripada itu Unit ini juga menjadi Sekretariat kepada Pihak Berkuasa Tatatertib Pelajar Universiti Pertanian Malaysia.

## Senarai Persatuan Berdaftar Unit Perhubungan Pelajar

### 1. MPP dan Persatuan Fakulti

Majlis Perwakilan Pelajar  
Persatuan Mahasiswa Fakulti Perhutanan  
Persatuan Mahasiswa Fakulti Kedokteran Veterinar  
dan Sains Peternakan  
Persatuan Mahasiswa Fakulti Pertanian  
Persatuan Mahasiswa Fakulti Kejuruteraan  
Persatuan Mahasiswa Fakulti Ekonomi dan Pengurusan  
Persatuan Mahasiswa Fakulti Pengajian Pendidikan  
Persatuan Mahasiswa Fakulti Sains Makanan dan Bioteknologi  
Persatuan Mahasiswa Pembangunan Manusia  
Persatuan Mahasiswa Fakulti Perikanan dan Sains Samudera

### 2. Persatuan Pakaian Seragam

Persatuan Pengakap Kumpulan Latihan Persekutuan Ke 16  
Persatuan Pandu Puteri  
Persatuan Bulan Sabit Merah  
Pengakap Laut  
ROTU

### 3. Perwakilan

Perwakilan Mahasiswa Sabah  
Perwakilan Mahasiswa Sarawak

### 4. Kolej-Kolej Kediaman

Kolej Kediaman Cikgu Rashid  
Kolej Kediaman Kedua  
Kolej Kediaman Ketiga  
Kolej Kediaman Keempat  
Kolej Kediaman Kelima  
Kolej Kediaman Keenam  
Kolej Kediaman Ketujuh  
Kolej Kediaman Tun Perak  
Kolej Kediaman Pendita Za'ba

### 5. Kelab/Kumpulan

Kegiatan beberapa Kelab/Kumpulan di bawah persatuan-persatuan diatas juga adalah tanggungjawab Unit ini. Semua surat berkenaan adalah dimasukkan dalam fail-fail induk yang berkenaan.

## Bantuan Kewangan

Pada sesi 1988/89 adalah dilaporkan iaitu daripada semua jumlah pelajar Universiti Pertanian Malaysia 8,619 orang, 97% (8,452) orang telah mendapat bantuan kewangan samada berbentuk biasiswa atau pinjaman yang ditaja oleh 60 badan penganjur.

## Unit Bimbingan Agama

Unit Bimbingan Agama berusaha membimbing para pelajar menjadi seorang ahli akademik yang berpegang teguh dengan **cara hidup** Islam. Bagi mencapai tujuan-tujuan ini Unit Bimbingan Agama telah menjalankan berbagai-bagai usaha dan kegiatan-kegiatan yang berbentuk nasihat bimbingan, pengeluaran risalah, kursus, seminar, kelas-kelas bimbingan nasihat, forum, pameran dan sebagainya.

Sepanjang sesi 1988/89 Unit Bimbingan Agama dengan kerjasama Persatuan Mahasiswa Islam Universiti Pertanian Malaysia dan Sekretariat Kerohanian Kolej Kediaman telah menjalankan 10 aktiviti seminar, 7 aktiviti berbentuk kursus, 4 acara perkelahan dan lawatan. 25 ceramah umum, 4 acara sambutan Hari Kebesaran Islam dan kelas-kelas Agama berbentuk Fardhu Ain di setiap malam di Surau Kolej Kediaman.

Unit Bimbingan Agama juga bertanggungjawab mengawasi dan meluluskan kegiatan-kegiatan Persatuan-persatuan Agama lain berbentuk ibadah dan pengajaran agama sepanjang sesi 1988/89. Persatuan Buddhist telah menyediakan 30 aktiviti, Persatuan Hindu 14 aktiviti, Persatuan Ikatan Kristian 13 aktiviti dan Persatuan Katholik 6 aktiviti.

## Unit Kebudayaan

Berikut adalah ringkasan jenis kegiatan kebudayaan yang telah dijalankan sepanjang sesi 1988/89.

1. Laporan kegiatan dan aktiviti persatuan seni mempertahankan diri UPM.

Terdapat 6 buah persatuan seni mempertahankan diri di kampus ini, iaitu:

Persatuan	Aktiviti
a. Seni Silat Gayung Malaysia	14
b. Seni Silat Cekak	20
c. Seni Silat Lincak	10
d. Seni Silat Gayung Fatani	19
e. Shito Ryu Karate Do	16
f. Tae Kwon Do	8

Jumlah: 87

Setiap persatuan menjalankan latihan 3 kali seminggu.

2. Kumpulan Muzik di bawah kelolaan Unit Kebudayaan.

Persatuan	Aktiviti
a. Brass Band	14
b. Caklempong	23
c. Kompang	10
d. Muzik Asli	4

Jumlah: 51

3. Kumpulan Tarian Mahasiswa/siswi UPM (PERMATA).

— Jumlah aktiviti 14

4. Permainan Tradisional - Gasing Pangkah

— Jumlah aktiviti 4

5. **Drama** **Aktiviti**  
Group Teater UPM 3

6. **Sastera**  
Pelancaran Buku 1

7. Seni Lukis 1

8. Seni Foto 2

Jumlah: 4

Jumlah keseluruhan aktiviti sepanjang sesi 1989/89 = 163 aktiviti

## Unit Perumahan Pelajar

1. Bilangan pelajar yang tinggal di Kolej-Kolej Kediaman sesi 1988/89.

Kolej	Bilangan Pelajar Julai 1988	Sistem Makanan
Kolej Cikgu Rashid	546	Bekalan makanan kontrak
Kolej Kediaman Kedua	651	Tradisional
Kolej Kediaman Ketiga	649	Tradisional
Kolej Kediaman Keempat	654	Tradisional
Kolej Kediaman Kelima	678	Kafeteria
Kolej Kediaman Keenam	657	Tradisional
Kolej Kediaman Ketujuh	644	Tradisional
Kolej Tun Perak	723	Kafeteria
Kolej Pendita Za'ba	727	Bekalan makanan kontrak
	5,928	

2. Bilangan pelajar yang mendaftar tinggal di luar kampus

Semester	Bilangan Pelajar
Julai 1988/89	2,012 orang
Disember 1988/89	1,523 orang*

\* Bilangan berkurangan kerana pelajar yang bergraduat selepas semester Julai 1988/89.

## Unit Kaunseling dan Kerjaya

Sebanyak 170 kegiatan profesional bagi ketiga-tiga pegawai di unit selain dari menghadapi perkhidmatan klinikal dengan klien sebagai tugas harian. Sebanyak 68 agensi kerajaan dan swasta telah menerima khidmat pengembangan dari unit. Khidmat perundingan pekerjaan untuk pelajar/graduan dan agensi pekerjaan berjalan seperti biasa. Sebanyak 66 agensi telah menyertai dan menggunakan perkhidmatan ini. Temuduga dalaman juga telah dikelolakan oleh unit. Kegiatan penyelidikan unit masih tertumpu kepada kajian pengesanan terutamanya lanjutan kepada kajian pengesanan yang terdahulu. Lebih dari 10 kertas penerbitan unit masih boleh di perolehi di unit. Kursus-kursus untuk pembangunan pelajar berjalan dengan lancarnya. Brosyur mengenainya ada disediakan di unit.

## UNIT SUKAN

### JANGKAMASA

#### Jun/Julai 1988

28 Jun hingga 2 Julai: Acara-acara Sukan Minggu Suaikenal Sesi 1988/89.

11 Julai hingga 23 Julai: Pelajar Baru lwn. Pelajar Lama.

25 Julai hingga 30 Julai: Persediaan dan Pembentukan Jawatankuasa Permainan Pasukan Universiti.

#### Julai/Ogos 1988

31 Julai hingga 1 Ogos: Pertandingan Tennis Tertutup Perseorangan UPM.

3 Ogos: Lari Merentas Kampus, Antara Kolej-Kolej Kediaman.

6 Ogos hingga 7 Ogos: Sukan Konvo UPM – 4 acara permainan.

13 Ogos hingga 14 Ogos: Sukan Konvo UPM – 4 acara permainan.

10 Ogos: Lari berganti-ganti atas Jalan Raya Antara Kolej-Kolej Kediaman.

12 Ogos: Sukan Alumni UPM.

22 Ogos hingga 25 Ogos: Sukan Pelajar Antara Universiti/IPT Malaysia Ke 12 – 1988 (UPM menjadi Tuan Rumah 11 Acara permainan).

### September 1988

2 September: Saringan/Akhir Olahraga.

3 September: Temasya Olahraga Tahunan.

5 hingga 16 September: Sukan Antara Blok, Kolej-Kolej Kediaman.

10 September: Pertandingan Renang Antara Univerisiti/IPT di USM.

17 September: Temasya Olahraga Antara Universiti di UTM.

24 hingga 25 September: Ragbi Serdang Ten Terbuka.

17 hingga 25 September: Menyertai Sofbol Terbuka UKM.

### Oktober 1988

1 hingga 15 Oktober: Lanjutan Sukan Antara Blok, Kolej-Kolej Kediaman.

November 1988

### November 1988

12 hingga 19 November: MASUM menyertai Sukan Malaysia Kedua – 1988.

### Disember 1988

27 Nov. hingga 2 Dis.: Persediaan dan latihan Kontigen MASUM di USM ke Sukan Universiti ASEAN Ke 5.

3 hingga 10 Disember: Temasya Sukan Universiti ASEAN Ke 5 di Pattaya, Thailand.

19 Disember: Temasya Sukan Antara Kolej Kediaman bermula.

### Januari 1989

1 hingga 31 Januari: Temasya Sukan Antara Kolej Kediaman Module I & II.

### Februari 1989

6 hingga 29 Februari: Temasya Sukan Antara Kolej Kediaman Module III

11 hingga 19 Februari: Menyertai Sofbol Terbuka ITM.

### Mac 1989

1 hingga 23 Mac: Temasya Sukan Antara Kolej Kediaman Modul IV & V.

16 Mac: Lembaga Penganugerahan Lencana Sukan bersidang.

29 Mac: Majlis Anugerah Sukan di Kolej Pemuda Za'ba jam 8.30 malam.

### Perkhidmatan Kesihatan Pelajar

Perkhidmatan Kesihatan Pelajar disediakan di Pusat Kesihatan Pelajar UPM. Pusat ini mempunyai berbagai kemudahan seperti Klinik Perubatan, Klinik Pergigian, Wad, X-ray, Dispensari, Makmal, Fisioterapi dan Hemodialisis. Ia dikendalikan oleh 3 orang Pegawai Perubatan 1 Pegawai Pergigian, 1 Juru X-ray, 1 Ketua Jururawat, 10 Jururawat, 1 Jururawat Pergigian, 5 Penolong Jururawat, 2 Pembantu Pembedahan Pergigian dan 19 kakitangan lain. Dalam tahun 1988, jumlah kedatangan di Pusat Kesihatan Pelajar ini ialah 34110 (29505 di Klinik Perubatan dan 4614 di Klinik Pergigian). Sebab-sebab utama kedatangan di Klinik Perubatan ialah penyakit Pernafasan (32.04%), Kulit (14.30%), Pelalian (12.52%), Urat Saraf (9.25%) dan Kecederaan (7.00%). Di Klinik Pergigian sebab-sebab utama kedatangan ialah Tampalan Kekal (45.28%), Tampalan Sementara (14.56%), Bersih Gigi (12.18%), Cabut Gigi Dewasa (7.50%) dan Cabut Gigi Kanak-Kanak (5.68%).

**\*KUNCI KIRA-KIRA PADA  
PADA 31 DISEMBER 1988**

	1988	1987
	(\$)	(\$)
HARTA TETAP	11,532,287	11,190,887
PEMBINAAN DALAM KEMAJUAN	8,168,865	3,076,992
PELABURAN	30,585,837	23,456,839
HARTA SEMASA		
Stok	1,107,849	1,011,764
Pelbagai Siberhutang	15,845,060	21,239,300
Pinjaman Penuntut \$31,380 (Ditolak peruntukan hutang lapuk \$13,398)	17,982	19,904
Simpanan Tetap	23,411,600	35,811,350
Simpanan Jangkapendek	3,000,000	
Wang Dalam Bank Dan Wang Dalam Perjalanan	5,717,630	8,379,893
Wang Ditangan	29,005	20,616
	\$49,129,126	\$66,482,827
Tolak:		
TANGGUNGAN SEMASA		
Pelbagai Sipiutang	17,007,280	20,650,386
	\$17,007,280	\$20,650,386
HARTA SEMASA BERSIH	32,121,846	45,832,411
	82,408,865	83,557,159
Dibiayai oleh:		
KUMPULANWANG TERKUMPUL	\$82,408,865	\$83,557,159

\* Angka yang ditunjuk di Kunci Kira-kira pada 31 Disember 1988 bukanlah angka yang muktamad, kerana akaun bagi tahun 1988 masih dalam proses pengauditan.

## FAKULTI PERTANIAN

### DEKAN

Prof. Mohd. Zain Hj. Abdul Karim B. Agr. Sc., M. Agr. Sc. (NZ), Ph. D. (Cornell)

### KAKITANGAN

Jabatan	Kategori			
	A	B	C	D
Dekan	2	—	6	8
Agronomi dan Hortikultur	43	1	35	8
Pengajian Pembangunan Manusia	27	—	12	14
Perlindungan Tumbuhan	22	2	21	10
Sains Tanah	26	2	30	22
Jumlah	120	5	104	63
Jumlah besar	296			

#### Perlantikan Baru

Seorang Profesor dan 3 orang Pembantu Makmal telah dilantik.

#### Cuti Belajar

Seramai 5 orang pensyarah telah diluluskan cuti belajar di luar negeri untuk mengikuti program Ph. D.

#### PERKARA AKADEMIK

##### Jumlah Pelajar

Bagi sesi 1988/89, seramai 1781 orang pelajar siswazah telah berdaftar dengan Fakulti ini. Pecahan pelajar mengikut program adalah seperti di bawah:-

##### Peringkat Bachelor

Bachelor Sains Pertanian	391
Bachelor Sains Hortikultur	139
Bachelor Sains (Pembangunan Manusia)	139
Jumlah	669

##### Peringkat Diploma

Diploma Pertanian	927
Diploma Pembangunan Manusia	185
Jumlah	1112

##### Ijazah Lanjutan

Di peringkat ijazah lanjutan pula, seramai 64 orang pelajar telah berdaftar, iaitu seramai 27 di peringkat Ph. D. dan 37 di peringkat Master.

##### Pemeriksa Luar

2 orang pemeriksa luar telah bertugas di Fakulti ini untuk menilai program Bachelor Sains Pertanian dan Bachelor Sains (Pembangunan Manusia). Meraka ialah:-

Profesor G.S. Khush dari International Rice Research Institute, Philippines untuk program B. S. Pertanian.

Profesor Linda Jean Nelson dari Michigan State

University bagi program Bachelo Sains (Pembangunan Manusia).

## PENYELIDIKAN

Fakulti Pertanian menjalankan 14 projek teras penyelidikan yang dipimpin oleh seorang Ketua Program. Kesemua projek adalah di bawah biayaan MPKSN. Projek-projek berkenaan ialah:-

Memperkenalkan tanaman baru (eksptika) di Malaysia. (Dr. Sharifuddin Hj. Abdul Hamid)

Bioteknologi, enzim dan mikrobial perkembangan sains dan teknologi, pengeluaran cendawan di atas sisa pertanian di Malaysia. (Dr. Abdul Rahman Abdul Razak)

Penyelidikan terhadap pengeluaran tanaman menerusi berbagai sistem tanpa tanah. (Khalip Abdul Raaffar)

Pembaikan hasil dan mutu cili melalui pengurusan agronomi. (Dr. Mohammad Md. Ali)

Meninggikan pengeluaran tanaman makanan. (Prof. Yap Thoo Chai)

Kajian pembaikan pengeluaran dan amalan lepas tuai pada berbagai jenis buah-buahan tropika. (Prof. Mohd. Zain Karim)

Mempertingkatkan pengeluaran penghasilan koko melalui pengurusan perosak dan tanaman yang lebih baik. (Dr. Khoo Khay Chong)

Pengurusan agroekosistem tanaman perladangan – peninggian produktiviti kelapa sawit menerusi perkembangan dan pembajaan yang efisien. (Dr. Mohd. Yusof Hussein)

Pengeluaran varieti kacang tanah berhasil tinggi melalui input minimum. (Dr. Cheah Chooi Hwa)

Pemeliharaan janaplasma beberapa tanaman hiasan terpilih bagi kegunaan landskap perbandaran dan kajian mengenai persepsi landskap secara visual dan penilaian pemandangan. (Dr. Saleh Kadzimin)

Pencirian dan pengurusan tanah-tanah bermasalah. (Dr. Wan Sulaiman Wan Harun)

Kesihatan keluarga dan masyarakat. (Chee Heng Leng)

Pembangunan keluarga dan penggunaan sumber untuk meningkatkan kualiti hidup. (Dr. Halimah Hj. Ahmad)

Pembangunan gentian-gentian asas pertanian terbiar. (Dr. Abdul Rahman Abdul Razak)

## PENERBITAN

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- Ridwan A. Halim and Wan Mohamad Othman (1989). Biological nitrogen-fixation in pasture systems. **Seminar on Grassland and Forage Production and Utilization in Farming Systems of Southeast Asia**. 27 February – 3 March, 1989, Universiti Pertanian Malaysia.
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- Shamsuddin, Z.H. and R.B. Kasran (1989). The inhibition of nodulation in groundnut by Al-induced Mg deficiency in solution culture. Malaysian Society of Soil Science **National Seminar on Soil Management for Food and Fruit Crops Production**, Kuala Lumpur 28 – 29 March, 1989.
- Surjit Singh (1989). Studies on the *Azolla-Anabaena* complex and its utilization for rice in Peninsular Malaysia. **Proc. Regional Workshop on Azolla Production and Utilization**, 9 – 13 Mei, 1988, SEARCA, Los Banos, Philippines.
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Zainal Abidin Mior Ahmad (1988): Rapid staining techniques for examining nuclear conditions of *Oncobasidium theobromae*. *11th Malaysian Microbiology Symposium* di Kuala Lumpur pada 22 – 23 Ogos, 1988.

Zakaria Sidek (1988). Virus like particles of ornamental plants (abstract). *11th Malaysian Microbiology Symposium* di Kuala Lumpur pada 22 – 23 Ogos, 1988 p. 42.

#### Zakaria Sidek

Zakaria Sidek (1988). Virus like particles of ornamental plants (abstract). *11th Malaysian Microbiology Symposium* di Kuala Lumpur pada 22 – 23 Ogos, 1988 p. 42.

Zakaria Sidek (1988). Identification of three virus infecting chilli in Peninsular Malaysia (abstract). *11th Malaysian Microbiology Symposium*, Kuala Lumpur, 22 – 23 Aug. 1988 p. 28.

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#### SEMINAR/BENGGEL/KURSUS DIADAKAN

6 – 10 Jun, 1988 Kursus Perlebahan II

7 – 19 November, 1988: Kursus Analisis Tanah dan Tumbuhan untuk 20 orang pegawai-pegawai makmal.

7 November – 2 Disember, 1988: Kursus Perlebahan ke 12.

7 November – 26 November, 1988: Kursus Perennial Crop Pathology khas untuk pegawai-pegawai dari PT Hasfarm Dian Konsultan, Indonesia.

21 November – 3 Disember, 1988: Kursus Asas Hortikultur untuk Kakitangan Dewan Bandaraya Kuala Lumpur.

## FAKULTI PERHUTANAN

**Dekan**

**Profesor Madya Dr Kamis Awang, B. Sc. (For.) Hons, Ph. D. (A.N.U.)**

Jabatan	Kategori			
	A	B.	C	D
Pejabat Dekan	4	—	10	29
Jabatan Pengurusan Hutan	12	—	7	5
Jabatan Pengeluaran Hutan	16	—	11	5
Jumlah	32	—	28	39
Jumlah Besar	99			

**Perlantikan Baru**

Seramai tiga orang pensyarah dan seorang tutor telah dilantik

**Cuti Belajar**

Seramai empat orang pensyarah sedang mengikuti kursus Ph. D. Seorang pensyarah sedang cuti Sebatikal.

**PERKARA AKADEMIK**

**Taburan Pelajar Menurut Sesi Akademik – B. S. Perhutanan**

**Sesi Akademik**

Tahun	84/85	85/86	86/87	87/88	88/89
Tahun 1	38	36	24	49	43
Tahun 2	24	38	36	14	49
Tahun 3	20	24	38	36	14
Tahun 4	16	20	23	38	35
	98	118	111	137	141

## IAZAH LANJUTAN

Abdel Hai Mohammed Sharief (M.S.): Perhutanan Tani.

Didik Purwito (M.S.): Teknologi Industri Kayu.

Ismail Harun (M.S.): Perhutanan Tani.

Ittipon Saiyawongs (M.S.): Taman dan Rekreasi Luar.

I.M. Sulastiningsih (M.S.): Teknologi Industri Kayu.

Jegatheswaran Ratnasingam (M.S.): Teknologi Industri Kayu.

Khairi Mohd Nasib (M.S.): Teknologi Industri Kayu.

Mohd. Ithnin Abu (M.S.): Sains Tanah.

M. Kishokumar Jeyaraj (M.S.): Ekofisiologi.

Pelagio F. Bautista, Jr. (M.S.): Teknologi Industri Kayu.

Sining Unchi (M.S.): Ladang Hutan.

Zulkefli Haron (M.S.): Teknologi Industri Kayu.

Mohammadiyah Nordin (Ph.D): Taman dan Rekreasi Luar.

Othman Sulaiman (Ph. D): Hasil Bukan Kayu Hutan.

## PENYELIDIKAN

Abd. Rahman Derus. Productivity Study of Tree Harvesting Practice in the Hill Forest.

Ahmad Ainuddin Nuruddin. Effect of Recreation Use on Vegetation in Recreational Areas.

Ahmad Ainuddin Nuruddin and Mohd. Basri Hamzah. Fire as a Potential Silvicultural Tool in the Regeneration and Conversion of *Acacia mangium* qilld. stand.

Ahmad Said Sajap. Biology and Control of Insect Affecting Forest Plantations.

Ahmad Said Sajap. Entomopathogenous of the *Leucaena Psyllid*, *Heteropsylla cubana* in Malaysia.

Awang Noor Ab. Ghani. Socio-economic Study of Forest Workers.

Awang Noor Ab. Ghani and Khamuruddin Mohd. Noor. Locational Study of Wood-Based Industries in Sarawak.

Doraisingam Manikam. Occupational Safety in Forest Operations.

Faizah Abood Haris. Potential of Pyrethroids as Wood Preservatives Jalaluddin Harun and Mohd. Basri Hamzah. Effects of Topography and Soil Compaction on Four Years Old *Acacia mangium* (Wild). Wood.

Kamaruzaman Jusoff and Nik Muhamad Majid. Survey, Quantification and Rehabilitation of Degraded Forest Areas.

Kamis Awang and Ashari Muktar. Composition and Growth of Residual Stands After Logging.

Kamis Awang. Stomatal and Photosynthetic Responses to Changing Irradiance by Three Species of Varying Shade Tolerance.

Kamis Awang. Multipurpose Tree Species and Provenance Trial.

Lai Food See. Sediment Studies in Hill Forested Watersheds.

Lee Su See. Heart Rot in *Acacia mangium*.

Lee Su See. Same Aspect of the Biology of *Shorea* sp. Mycorrhizas.

Lim Meng Tsai. Ecological Studies on *Dryobalanops aromatica*.

Lim Meng Tsai and Siti Rubiah. Ecological Studies on Cengal. (*Neobalanocarpus heimii*).

Lim Meng Tsai. Productivity of *Acacia mangium* Stands.

Mohd. Basri Hamzah and Mohd. Basri Hamzah and Jalaluddin Harun. Effect of Thinning and Soil Type on Growth and Wood Quality of *Acacia mangium* Willd.

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Nor Aini Ab. Shukor: Genetik Variasi Pokok-Pokok Hutan Semenanjung Malaysia.

Nor Aini Ab. Shukor: Pembiakan Tampang Secara Keratan pada Pokok-Pokok Seraya, Merawan Siput Jantan dan Meranti Tembaga.

Othman Sulaiman: Drying of Bamboo, Determination of Drying Schedule of Bamboo, Ultrastructure of Bamboo and Anatomy of Bamboo.

Razali Abdul-Kader: Production Technology of Low-Density Particleboard.

Razali Abdul-Kader: Processing of Rubberwood in Malaysia.

Rusli Mohd: Kajian Pekerja dan Pekerjaan di Industri Berasas Kayu di Semenanjung Malaysia.

Rusli Mohd: Job Satisfaction, Experience and Performance of Logging Work Force.

Sheikh Ali Abod: Projek Penyelidikan *A. auriculiformis* bersama Winrock.

Sheikh Ali Abod: Perundingan Pejabat Hutan Sabah – Universiti Pertanian Malaysia – Penyelidikan Ladang Hutan.

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Shukri Mohamed: Problem and Prospects of Log Transfer from Sarawak to Peninsular Malaysia.

Sulong Ibrahim. Estimating Biomass of Hill Forest.

Yusuf Hadi and Sulong Ibrahim. Pre-felling Inventory with Varying Sampling Intensities Under the Selective Management System.

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#### **KURSUS/SEMINAR/WORKSHOP YANG DIHADIRI**

Ahmad Ainuddin Nuruddin. Menghadiri National on the Tropical Forestry Action for Malaysia. Organised by Ministry of Primary Industries Malaysia and Faculty of Forestry UPM pada 11 – 12 July 1988 di Serdang.

Ahmad Ainuddin Nuruddin. Menghadiri National Workshop and Seminar on Monitoring Strategies in Environmental Management and Assessment. Organized by M.A.R.C. University of London and U.K.M. 28 November – 1 December 1988. Kuala Lumpur.

Ahmad Ainuddin Nuruddin. Menghadiri National Tourism Conference – Gearing for 1990. Organized by National Tourism Council, 17 – 18 December, 1988. Kuala Lumpur.

Awang Noor Abd. Ghani. Menghadiri Kursus SAS-PC di Pusat Komputer, Universiti Pertanian Malaysia, Serdang pada 13 – 15 Jun 1988.

Awang Noor Abd. Ghani. Menghadiri Bengkel “Tropical Forest Action Plan” di PPPL, UPM pada 11 – 12 Julai 1988.

Awang Noor Abd. Ghani. Menghadiri International Seminar on Computerization for Development, the Research Challenge di PWTC, Kuala Lumpur pada 16 – 18 Ogos 1988.

Awang Noor Abd. Ghani. Menghadiri Forest Sector Planning and Evaluation di UPM, Serdang pada 3 – 15 Oktober 1988.

Awang Noor Abd. Ghani. Menghadiri Seminar on Forest Management Information system di Johor Baharu, Johor pada 15 – 18 Disember, 1988.

Faridah Hanum. Menghadiri Conference – Tropical Rain Forest of the Far East, anjuran University of Oxford Jun 1988 di Oxford, England.

Faridah Hanum. Menghadiri PROSEA (Plant Resources of South-East Asia) First International Symposium, anjuran Indonesia Institute of Sciences (LIPI) dan Wageningen Agricultural University (WAU) dari 22 – 25 Mei 1989 di Jakarta, Indonesia.

Kamis Awang. Menghadiri Expert Consultation on Forestry Educations, anjuran FAO pada 15 – 17 Jun 1988. Bangkok, Thailand. (Pembentang kertas kerja).

Kamis Awang. Menghadiri Seminar Konflik Di dalam Organisasi: Penyelesaian dari Perspektif Islam, anjuran Ambang Associated pada 21 Jun 1988. Kuala Lumpur. (Peserta).

Kamis Awang. Menghadiri National Workshop on the Tropical Forestry Action Plan for Malaysia, anjuran Kementerian Perusahaan Utama pada 11 – 17 Julai 1988. Serdang, Selangor Darul Ehsan. (Pembentang kertas kerja).

Kamis Awang. Menghadiri Regional Workshop on the Ecodevelopment Process for Degraded Land Resources in Southeast Asia. 22 – 25 August 1988. Bogor, Indonesia. (Pembentang kertas kerja).

Kamis Awang. Menghadiri Social Sciences in Asian Forestry Curricula Workshop. 27 November – 2 December 1988. Khonkaen, Thailand. (Peserta).

Kamis Awang. Menghadiri International Workshop on Professional Education and Training in Agroforestry. 5 – 8 December 1988. Gainesville, Florida, U.S.A. (Peserta).

Kamis Awang. Menghadiri Forum Dasar Ekonomi Baru: Penyelesaian Selepas 1990 anjuran

Pusat Kajian Dasar Pertanian UPM pada 21 Mac 1989 di UPM Serdang.

Lai Food See. Menghadiri Workshop on Endau-Rompin Park Management, anjuran EPU, WWF dan MNS dari 6 – 9 February 1988 di Kem Expedisi Endau-Rompin, Johore.

Lai Food See. Menghadiri Training Course on Computer Applications in Watershed Management, anjuran Jabatan Hutan dan ASEAN-US Watershed Project dari 13 – 20 November 1988 di Kuala Lumpur.

Nor Aini Ab. Shukor. Peserta Kursus Program Induksi – Modul 1, anjuran UPM dari 23 – 25 Mei 1989.

Nor Aini Ab. Shukor. Menghadiri Seminar “ERBA DAY” application seminar di Holiday Villa, Subang Jaya, 31 Mei 1989.

Nor Aini Ab. Shukor. Menghadiri Seminar on Investment in Large Scale Forest Plantation in Sea and Its Simplification and Research Leading to Improved Utilization of Under Utilized Speices di FRIM pada 31 Mac 1989.

Othman Sulaiman. Menghadiri Seminar Unit Kaunseling dan Kerjaya (Seminar ke-4) – Mengenalpasti Sistem Sokongan Kampus dan Bagaimana Ianya Boleh Menyumbang ke Arah Penyelesaian Masalah Pelajar Masa Kini 17 Februari 1989 di Serdang.

Othman Sulaiman. Lawatan Bersama Beberapa Buah Kilang Papan dan Kilang Papan Lapis di Pantai Timur Bersama Pelawat dari Jepun Prof. Sato. 13 – 16 March 1989.

Othman Sulaiman. Lawatan Kelatihan Praktikal Pelajar-Pelajar ke Selatan 21 – 26 November 1988.

Othman Sulaiman. Menghadiri Forum Scanning Elektron Microscope, 1 March 1989 anjuran Fakulti Kedokteran Veterinar dan Sains Peteranakan, UPM di Serdang.

Razali Abdul Kader. Pensyarah Utama di Kursus – Wood Adhesives and Composites, anjuran ATTC 6 – 16 Jun 1988 Kuala Lumpur.

Razali Abdul Kader. Menghadiri – Dialog/Workshop FRIM-Industri Perkayuan, anjuran

FRIM, 4 – 6 Julai 1988, Kepong.

Razali Abdul Kader. Menghadiri – National Workshop on The Tropical Forestry Action Plan, anjuran KPU/FAO dan UPM, 11 – 12 Julai 1988, Serdang.

Razali Abdul Kader. Menghadiri – Workshop on Machined Lumber Products Grading Rules, anjuran MTIB, 21 Okt. 1988, Kuala Lumpur.

Razali Abdul Kader. Menghadiri – Seminar on Transportation, Packaging and Handling of Timber and Timber Products for Export, anjuran MTIB, 2 – 3 November 1988, Kuala Lumpur.

Razali Abdul Kader. Pensyarah Utama di Kursus – Pengeringan Tanor Ke Enam, anjuran MTIB, FRIM dan UPM, 9 Nov. – 3 Dis., 1988, Serdang.

Razali Abdul Kader. Menghadiri – Bengkel Kajian Kecemerlangan Akademik, anjuran UPM, 2 Mac 1989, Serdang.

Razali Abdul Kader. Menghadiri – Forum Dasar Ekonomi Baru: Penyelesaian Selepas 1990, anjuran Pusat Kajian Dasar Pertanian UPM, pada 21 Mac 1989, di UPM, Serdang.

Rusli Mohd. Menghadiri National Workshop on the Tropical Forestry Action Plan for Malaysia. 11 – 12 Julai 1988, UPM, Serdang. Organised by Faculty of Forestry and Ministry of Primary Industries. Sponsored by FAO.

Rusli Mohd. Menghadiri International Seminar on Malaysian Agricultural Policy: Issues and Direction. 21 – 23 June 1988. UPM, Serdang. Organised by Centre for Agriculture Policy Studies, UPM.

Rusli Mohd. Menghadiri AAACU 7th Biennial Conference – Role of Agricultural Colleges and Universities in Poverty Redressal. 17 – 22 October 1988. UPM, Serdang.

Rusli Mohd. Menghadiri Training Course on Industrial Relations and Labour Laws. 31 Oct. – 4 Nov. 1988. National Productivity Centre, Petaling Jaya.

Rusli Mohd. Menghadiri National Seminar of

the Malaysian Psychology Association. 27 – 28 February 1989. UKM, Bangi.

Sheikh Ali Abod. Menghadiri Simposium Pembangunan Islam. 23 – 27 Disember 1988. Universiti Malaya.

Sheikh Ali Abod. Menghadiri Bengkel Kajian Kecemerlangan Akademik. 2 Mac 1989. UPM, Serdang.

Sheikh Ali abod. Menghadiri Bengkel Kurikulum Pengurusan Taman dan Rekreasi. 9 – 10 Mac 1989. UPM, Serdang.

Sheikh Ali Abod. Menghadiri Forum Dasar Ekonomi Baru, Penyelesaian Selepas 1990 pada 21 Mac 1989 anjuran Pusat Kajian Dasar Pertanian UPM, Serdang.

Shukri Mohamed. Menghadiri Bengkel Adaptasi Buku Akademik 5 – 9 September 1988 di Kuala Lumpur anjuran DBP Malaysia dan British Council.

Shukri Mohamed. Menghadiri Intensive Seminar on Applied Marketing Research 25 – 27 Mei 1988 di Kuala Lumpur anjuran RAYMA Management Services.

Shukri Mohamed. Menghadiri International Seminar on Furniture Development and Promotion 8 – 11 Ogos 1988 di Kuala Lumpur anjuran MTIB-ITTO.

Shukri Mohamed. Menghadiri National Workshop on the Tropical Forestry Action Plan 11 – 12 Julai 1988 di Serdang, Selangor anjuran Kementerian Perusahaan Utama Malaysia dan UPM.

Shukri Mohamed. Menghadiri Training Course on Timber Products Marketing 5 – 17 September, 1988 di Serdang, Selangor anjuran UPM-FAO (resource person).

Shukri Mohamed. Menghadiri Workshop on Furniture Production Technology 23 – 28 Januari 1989 di Kuala Lumpur anjuran MTIB-UNIDO/UNDP.

Shukri Mohamed. Menghadiri Workshop on Furniture Marketing and Market Promotion 3 – 5 April 1989 di Kuala Lumpur anjuran

## MTIB-UNIDO/UNDP.

Yusuf Hadi. Menghadiri Forum – Dasar Ekonomi Baru: Penyelesaian Selepas 1990 anjuran Pusat Kajian Dasar Pertanian UPM pada 21 Mac 1989 di UPM Serdang.

Yusuf Hadi. Menghadiri Forum – Keusahawanan dalam Bidang Perhutanan/Industri Perakayuan anjuran Persatuan Mahasiswa/i Fakulti Perhutanan dan Pusat Kajian Dasar Pertanian, UPM pada 18 Mac di UPM Serdang.

Yusuf Hadi. Menghadiri Seminar on AIFM FORWORD Planning Model anjuran Sabah Forest Industries Sdn Bhd pada 3 Mac 1989 di Kota Kinabalu Sabah.

Yusuf Hadi. Menghadiri ASEAN Seminar on Information for Forest Management, anjuran ASEAN Institute of Forest Management, Kuala Lumpur pada 15 – 17 Disember 1988 di Johor Bahru.

Yusuf Hadi. Menghadiri International Seminar on Computerization for Development – the Research Challenge anjuran UPM, INTAN, MSORSM dan PIKOM pada 16 – 18 August 1988 di Kuala Lumpur.

Yusuf Hadi. Menghadiri National Workshop on the Tropical Forestry Action Plan for Malaysia anjuran Kementerian Perusahaan Utama dan Fakulti Perhutanan, UPM pada 11 – 12 Julai 1988 di UPM Serdang.

## Seminar Akademik

Revegetation of degraded coastal areas of Guangdong Province, China disampaikan oleh Prof. Madya Dr. Kamis Awang pada 7 Jun 1988.

Studies on plant establishment disampaikan oleh Dr. Sheikh Ali Abod pada 21 Jun 1988.

Chemithermomechanical (CTM) pulping of rubberwood disampaikan oleh Jalaluddin Harun pada 28 Jun 1988.

Linear programming for the development of the Malaysian Forestry Sector disampaikan oleh Prof Madya Dr Yusuf Hadi pada 5 Julai 1980.

Ecological studies on *Neobalanocarpus Heimii*

(cengal) disampaikan oleh Puan Siti Rubiah Zainuddin pada 12 Julai 1988.

Forest sector planning in Peninsular Malaysia disampaikan oleh Encik Abdul Rahman Abdul Rahim pada 19 Julai 1988.

Tissue culture in *Acacia mangium* disampaikan oleh Prof Madya Mohd Basri Hamzah pada 26 Julai 1988.

Experiences in Brazil disampaikan oleh Prof Madya Dr Razali Abdul Kader pada 2 Ogos 1988.

Social Forestry disampaikan oleh Encik Awang Noor Abd Ghani pada 9 Ogos 1988.

Susceptibility of five plantation species to *Coptotermes curvignathus* disampaikan oleh Puan Faizah Abood Haris pada 16 Ogos 1988.

Logging systems disampaikan oleh Encik Doraisingam Manikam pada 23 Ogos 1988.

Amalan pengurusan pekerja di kilang kayu di Semenanjung Malaysia disampaikan oleh Encik Rusli Mohd pada 30 Ogos 1988.

Remote sensing of Mangrove Forests disampaikan oleh Encik Sulong Ibrahim pada 6 September 1988.

Comparative anatomical structure of some palm stems disampaikan oleh Prof Madya Mohd Zin Jusoh pada 13 September 1988.

Wood-based composites of the future disampaikan oleh Dr. Phil Humphrey pada 24 March

Height – diameter relationship of virgin and logged-over *Hill Dipterocarp* Forest disampaikan oleh Prof Madya Ashari Muktar pada 27 September 1988.

Malaysian wood furniture sector – some marketing aspects disampaikan oleh Encik Shukri Mohamed pada 4 Oktober 1989.

Some aspects of forestry in Papua New Guinea disampaikan oleh Puan Lee Su See pada 11 Oktober 1988.

Forestry and energy disampaikan oleh Dr Paul Mitchell pada 13 September 1988.

Comparative anatomical structure of some palm stems disampaikan oleh Prof Madya Mohd Zin Jusoh pada 20 September 1989.

The professional forester – an endangered species disampaikan oleh Encik S. T. Mok pada 27 September 1988.

Malaysian wood furniture sector – some marketing aspects disampaikan oleh Encik Shukri Mohamed pada 4 Oktober 1988.

Some aspects of forestry in Papua New Guinea disampaikan oleh Puan Lee Su See pada 11 Oktober 1988.

Height – diameter relationship of virgin and logged-over Hill Dipterocarp Forest disampaikan oleh Prof Madya Ashari Muktar pada 18 Oktober 1988.

Reactivity of *Acacia mangium* wood with beta-isocyanide and butylene oxide disampaikan oleh Encik Abdul Jalil Ahmad pada 1 November

Foliar moisture content of *Acacia mangium* disampaikan oleh Encik Ainuddin Nuruddin pada 15 November 1988.

Thinning and pruning operations in *Acacia mangium* stands disampaikan oleh Encik Bimal Paudyal Keshari pada 22 November 1988.

Some thoughts on Seraya Regeneration disampaikan oleh Prof Madya Mohd Basri Hamzah pada 6 Disember 1988.

Interaction of *Nosema pyrausta* with insect parasites and predators disampaikan oleh Dr Ahmad Said Seiap pada 13 Disember 1988.

Forest recreational travel characteristics disampaikan oleh Dr Wan Sabri Wan Mansor pada 17 Januari 1989.

Management of natural forest in Malaysia – FD/ITTP Project disampaikan oleh Prof Madya Mohd Ashari Muktar pada 31 Januari 1989.

Forestry development in Ireland disampaikan oleh Enik Len Gallagher pada 14 Februari 1989.

Tropical hardwood markets in Europe disampaikan oleh Enik Roger Cooper pada 21 Februari 1989.

Management of national parks in the United States disampaikan oleh Prof Michael Legg pada 7 Mac 1989.

Crown diameter – Dbh relationship in Hill Dipterocarp Forest trees pada 14 Mac 1989.

Wood chemistry and tropical timber disampaikan oleh Dr Sato pada 16 Mac 1989.

BOSTID Research Program disampaikan oleh Dr Joann Roskoski pada 21 April 1989.

Use of direct scanning x-ray densitometry to study wood quality disampaikan Prof Robert L Kraemer pada 4 Mei 1989.

## PELAWAT

Amurudin b. Jaafar dari Jabatan Hal Ehwal Orang Asli Negeri Sembilan/Melaka, Seremban telah melawat Fakulti Perhutanan pada 11 Jun 1988.

Valentino Felwell dan Menimo del Sermo dari Rimini (FO) Italy Via Sagrado, Istituto Per la Technology Del Legno (CNR) S. Michele A/A (Trento) 38101 Italy telah melawat Fakulti Perhutanan pada 16 Jun 1988.

Critin Phillip, Gerson Jackson, Ranster Andrew, Fred Skilling, Asaer P. Acher, Moses Mackwe lung dan Glasstine Cornelius dari Kosrae, FSM = 96944, Micronesia, telah melawat Fakulti Perhutanan pada 29 Jun 1988.

Mohan A. Arunasalam dari Tempawan Overseas Dev. Corp. 43 2nd Floor, SS 22/10 Damansara Jaya (Agri. Consultants to Govt of Kosrae (FSM), Malaysia telah melawat Fakulti Perhutanan pada 29 Jun 1988.

Chung, Hsu-ho dari Taiwan Forestry, Res. Inst. 53, Nam-Hai Rd., Taipei, Taiwan telah melawat Fakulti Perhutanan pada 5 Ogos 1988.

Xu Huang Can dari Research Institute of Tropical Forest, Chinese Academy of Forestry, Longdong, Guangzhou, P.R. China telah melawat Fakulti Perhutanan pada 5 Ogos 1988.

Hong Jusheng dari the Chinese Academy of Forestry Beijing, China telah melawat Fakulti Perhutanan pada 5 Ogos 1988.

Xiong Yaoguo dari the Chinese Academy of Forestry Beijing, China telah melawat Fakulti Perhutanan pada 5 Ogos 1988.

G.D. Bandara dari Forest Dept. Kew Road Colombo 2, Sri Lanka telah melawat Fakulti Perhutanan pada 5 Ogos 1988.

Warlito R. Vatnidad dari Ecosystems Research and Development Biro (FORI) Philippines telah melawat Fakulti Perhutanan pada 5 Ogos 1988.

Yoland Robillos dari Forest Products Research & Development Institute, College, Laguna, Philippines, telah melawat Fakulti Perhutanan pada 5 Ogos 1988.

Wilfredo M. Carandang dari Dept. of Silviculture and Forest Influence University of the Philippines at Los Banos College of Forestry, College, Laguna, Philippines telah melawat Fakulti Perhutanan pada 5 Ogos 1988.

Justo P. Rojo dari Forest Products Research and Development Institute College, Laguna Philippines, telah melawat Fakulti Perhutanan pada 5 Ogos 1988.

Edilbert E. Nasayao dari Acting Head Department of Forestry Visayas State College of Agriculture, Baybay, Layte, Philippines telah melawat Fakulti Perhutanan pada 5 Ogos 1988.

Julie Pak dari F/FRES Project on Maui, Hawaii, P.O. Box 186, PAIA, Maui, HI 96779 U.S telah melawat Fakulti Perhutanan pada 25 Ogos 1988.

Md. Lokmal Ngah dari FRIM, Kepong, Malaysia telah melawat Fakulti perhutanan pada 25 Ogos 1988.

Akina Yamaguchi, Mitsuyoshi Yatagai dan Yoichi Tomimura dari FRIM, Jica Jepun telah melawat Fakulti Perhutanan pada 29 Ogos 1988.

Mohd. Noor Mohd. Yusoff dari FRIM, Malaysia telah melawat Fakulti Perhutanan pada 29 Ogos 1988.

Chelso B. Lantican dari F/FRED Bangkok telah melawat Fakulti Perhutanan pada 4 September 1988.

Paul Mitcheal dari Aberdeen University, U.K.

telah melawat Fakulti Perhutanan pada 6 September 1988.

Baharuddin Hj. Ghazali dari MTIB, Malaysia telah melawat Fakulti Perhutanan pada 15 September 1988.

Samuel H. Butterfield dari Univ. of Idaho, Moscow, Idaho, USA telah melawat Fakulti Perhutanan pada 27 September 1988.

Donald D. Osburn dari University of Mo., Columbia, MO, USA telah melawat Fakulti Perhutanan pada 27 September 1988.

J.R. Palme dari Tropical Forestry & Computing Ltd. Oxford OX91TQ, U.K. telah melawat Fakulti Perhutanan pada 27 September 1988.

Heluk G. Hilmie dari FAO of UN, Rome Italy telah melawat Fakulti Perhutanan pada 14 Oktober 1988.

Venai Veerawatvenond dari Faculty of Social Sei, Mahidal U, Bangkok Thailand telah melawat Fakulti Perhutanan pada 18 Oktober 1988.

Foster B. Cudy dari Paia, Hawaii, USA telah melawat Fakulti Perhutanan pada 21 Oktober 1988.

Ja We Hu dari Department of Forestry Chinese Culture University telah melawat Fakulti Perhutanan pada 21 Oktober 1988.

Komar Soemarna dari Forest Research and Development Centre, Indonesia, telah melawat Fakulti Perhutanan pada 21 Oktober 1988.

Enrique N. Crizaldo dari ERDB, College, Laguna, Philippines telah melawat Fakulti Perhutanan pada 21 Oktober 1988.

L. Buford Briscoe dari Winrock/F/FRED, Arlington, VA, USA telah melawat Fakulti Perhutanan pada 21 Oktober 1988.

Kamol Wisupakan dari Royal Forest Department Bangkok, Thailand telah melawat Fakulti Perhutanan pada 21 Oktober 1988.

Charles Mehl dari Winrock International Kasetsart University, Bangkok, Thailand telah me-

lawat Fakulti Perhutanan pada 21 Oktober 1988.

Pan, Fah Jiunn dari Taiwan Forestry Research Institute, 53 Nam Hai Rd. Taiper, Taiwan 10728 telah melawat Fakulti Perhutanan pada 21 Oktober 1988.

Bunyaret Puriyakorn dari Silvicultural Research Subdivision, Silviculture Div. Royal Forest Department, Thailand telah melawat Fakulti Perhutanan pada 21 Oktober 1988.

Suree Bhumibhamon dari Department of Silviculture, Faculty of Forestry, Kasetsart Univ. Thailand telah melawat Fakulti Perhutanan pada 21 Oktober 1988.

R.S. Raros dari Visayas State College of Agricultural (VISCA), Baybay, Leyte, Philippines telah melawat Fakulti Perhutanan pada 21 Oktober 1988.

Kenneth G. MacDicken dari Winrock Int. — F/FRED, Kasetsart University Faculty of Forestry, Bangkok telah melawat Fakulti Perhutanan pada 21 Oktober 1988.

Kyaw Myint Than, Director, Forest Department, Burma telah melawat Fakulti Perhutanan pada 26 Oktober 1988.

U. Sien Thet and Mr. U. Thin Myint, Deputy Director, Forest Department, Rangoon, Burma telah melawat Fakulti Perhutanan pada 26 Oktober 1988.

A.S.T. Awuyo dari Permanent Secretary, Ministry of Environment Protection, P.O. Box 9629 Kampala, Uganda telah melawat Fakulti Perhutanan pada 7 November 1988.

John Carvaliio dari Forest Products Research, P.O. Box 1752, Kampala, Uganda telah melawat Fakulti Perhutanan pada 7 November 1988.

L.S. Kiwanuka, Chief Forest Officer, P.O. Box 31, Entebbe Uganda telah melawat Fakulti Perhutanan pada 7 November 1988.

P.K. Khosla dari College of Forest, University of Horticulture and Forestry Solan 173230 HP India telah melawat Fakulti Perhutanan pada 11 November 1988.

Navyen Huy Hong, Le Van Hong, Nguyen Utn Tuy, Nguyen Duc Luu, Lee Cong Trung and Nguyen Bich Ha dari Vietnam telah melawat Fakulti Perhutanan pada 11 November 1988.

Clive March dari Yayasan Sabah, Kota Kinabalu telah melawat Fakulti Perhutanan pada 22 November 1988.

R. J. Cooper dari School of Agricultural and Forest Science, UNCW Bangor, U.K. telah melawat Fakulti Perhutanan pada 8 Februari 1989.

Rober J. Day dari School of Forestry Lakehead University, Thunder Bay ONT telah melawat Fakulti Perhutanan pada 12 Februari 1989.

Dennis Richard dari P.O. Box 47, Moleuka, New Zealand telah melawat Fakulti Perhutanan pada 21 Februari 1989.

Michael Legg dari School of Forestry, Nacogdoches, Texas telah melawat Fakulti Perhutanan pada 28 Februari 1989.

Andres Martinez dari Winrock International, Rt. 3, Morriltoy ARK telah melawat Fakulti Perhutanan pada 15 Februari 1989.

Akira Sato Daro Wood Research Institute, Kyoto University Uji City, Kyoto, Japan telah melawat Fakulti Perhutanan pada 15 Mac 1989.

Jeff Vincent dari Michigan State University (Department of Forestry) East Lansing, MI, USA telah melawat Fakulti Perhutanan pada 22 Mac 1989.

Philip Humphrey dari Forest Research Lab. Oregon St. University telah melawat Fakulti Perhutanan pada 24 Mac 1989.

Kham Ovane Bougha dari Ministere de l'Agriculture and Forest telah melawat Fakulti Perhutanan pada 28 Mac 1989.

Rober L. Krahmer dari College of Forestry, Oregon State University telah melawat Fakulti Perhutanan pada 29 April 1989.

Hugh G. Miller dari Department of Forest, University of Aberdeen, U.K. telah melawat Fakulti Perhutanan pada 3 April 1989.

# FAKULTI KEDOKTORAN VETERINAR DAN SAINS PETERNAKAN

## DEKAN

Profesor Abdul Latif b. Ibrahim D.V.M. (Mymensingh), M.S. (Hawaii), Ph. D. (U.C. Davis).

### Jumlah Kakitangan

Jabatan	Kategori			
	A	B	C	D
Pejabat Dekan	2	1	8	8
Jabatan Sains Peternakan	16	3	19	22
Jabatan Patologi dan Mikrobiologi Vet.	16	4	17	11
Jabatan Pengajian, Klinikal Vet.	16	7		9
Jumlah	50	15	47	50
Jumlah Besar				162

### Perlantikan Baru

Seorang Prof. Madya, tiga orang pensyarah, seorang tutor dan seorang Pegawai Veterinar. Seorang Pemangku Ketua Jabatan telah dilantik semula.

### Perletakan Jawatan

Tiga orang pensyarah telah meletak jawatan.

### PERKARA-PERKARA AKADEMIK

### Cuti Belajar

Tiga orang pensyarah sedang mengikuti pengajian program Ph. D di luar negeri.

Dua orang pensyarah sedang cuti sebatikal.

Jumlah Pelajar	
Diploma Kesihatan Haiwan & Peternakan	205
Doktor Perubatan Veterinar	114
Master	13
Ph. D.	24

## Pemeriksa Luar

Prof. D.R. Lindsay dari University of Western Australia, Australia (Sains Peternakan).

Prof. N.T. Gorman

Prof. N.D. Dungworth dari University of California.

## PENYELIDIKAN

Dr. Tengku Azmi Tengku Ibrahim: Chromosome evaluation of production characteristics in the water buffaloes (projek IDRC).

Studies on male reproductive functions in imported rams (Kajian bersama dengan Jabatan Perkhidmatan Haiwan dan MARDI).

Light and electron microscopic structure of the kidney in experimentally induced nephrotic syndrome.

Dr. Abdul Salam Abdullah: Signal grass (*Bra-chiaria decumbens*) toxicity in sheep.

Molecular epidemiology of antibiotic resistance in *E. coli* from animals and man.

En. Osman Awang: Performance of Sahiwal-Friesian calves fed low cost calf starter.

Histochemical studies of tropical pastures and their degradation in the rumen.

Dr. Kuan King Kai: Performance characteristics and Heterophil/Lymphocyte ratio when broilers are subjected to stress.

Free choice intake and rumen degradation of different leaf forages.

En. Mohammed Peter Davis: Feed intake measurements to estimate climatic effects on the productivity of sheep in the humid tropics.

Puan Ramlah Hamid: Studies on improving breed and productive performance of village chicken.

Development of poultry feeding program based on agro-by-product derived feedstuff.

Dr. M.K. Vidyadaran: Chromosome Evaluation of Production Characteristics in Water Buffaloes (projek IDRC).

Studies on the mouse deer.

R & D on Deer Farms.

Dr. Hew Peng Yew: Conservation of Kedah-Kelantan cattle.

Dr. Mohd. Hilmi Abdullah: Chromosome evaluation and production characteristics of water buffaloes (projek IDRC).

Evaluation of goat and buffalo genotypes (projek ACIAR)

*In vitro* fertilization and embryo sexing in mice and hamster (projek JSPS).

Projek selembu (kacukan seladang x lembu) di-biayai oleh USA National Research Council melalui Jabatan Perkhidmatan Haiwan Malaysia.

Study on the cytogenetic of imported sheep.

En. Andrew Alek Tuen: The effect of mineral, urea and soybean meal supplementation on nutrient intake, digestibility and balance in goats fed rice straw based diet (projek IAEA).

Milk intake of preweaned goat kids (projek IRPA).

Nutrient intake of grazing sheep (projek IRPA).

Dr. Wan Nordin Wan Mahmud: Morphometric studies on swamp buffalo tests at 1, 2 and 3 years of age.

Dr. Tan Hock Seng: Conservation and improvement of indigenous livestock (projek IRPA).

Use of radioimmunoassay techniques to assess reproductive performance of cattle (projek IAEA).

Reproductive performance of imported sheep.

Dr. Adnan Sulong: Study of ovarian activity and kid growth performance in kacang goats.

Study of puberty in Kedah-Kelantan cattle.

Pregnancy diagnosis in sheep.

Study of semen characteristics in swamp, Murrah and crossbred buffaloes.

Dr. Zainal Aznam Jelani: Development of feed resources. I. Effect of ratio of protein: energy on fermentation of feed in buffaloes.

Utilization of oil-palm by-products by swamp, Murrah and swamp buffaloes (projek ACIAR).

Relationship between chromosome make-up and production traits in buffaloes (projek IDRC).

Nutritive values of agro-industrial by-products and other potential feed resources (projek IAEA).

Dr. Kassim Hamid: Genotype-nutrition-environmental interactions in chicken. Thermoregulation in farm animals. Conservation and improvement of indigenous livestock. Studies on improving breed and productive performance of village chicken.

Dr. Mohd. Ali Rajion: Sheep integration under orchard systems. *Brachiarria decumbens* toxicity in sheep. Goat production systems. Cellulase production by rumen bacteria.

Abdul Latif Ibrahim:

1. Vaccination of village chickens in Malaysia against Newcastle disease. Supported by a grant from the Australian Center for International Agriculture Research.
2. Application of Genetic engineering in animal health and Production. IRPA.
3. Animal Biotechnology (MPKSN).

Abdul Rahim Mutalib:

1. Etiologic studies of Pneumonia in Goat & Sheep
2. Isolation of Salmouella from abattoir samples
3. Ecology of Lactobacillus, Bifidobacteria and Bacteroides in goats.

Abdul Rani Bahaman:

1. The Prevalence of mastitis in cattle and buffaloes in Malaysia.
2. The epidemiology of leptospiral infection in domestic animals in Malaysia.
3. Prevalence of brucellosis in domestic animal in Peninsular Malaysia.
4. Detection of immunogenic components of *Pasteurella multocida*

Awang, I.P.R.:

1. Pengasingan paramiksovirus dari burung merpati.
2. Pengeluaran antibodi monoklonal.
3. Pengasingan virus dari bebiri.
4. Pembangunan teknik immunoperoksidase.

Mohd. Shah Majid: Studies on mycoplasma infections in chickens – Ph. D project.

Rasedee Abdullah:

1. Cattle resistance to tick and tick-borne diseases.
2. Coagulation abnormalities in nephrotic syndrome.

Rebana A. Sani:

1. Use of blood gastrin in the diagnosis of caprine haemonchosis (Joint Project with Un. London, funded by Overseas Development Agency, U.K.
2. Detection of circulating antigens in T. evansi infection in cattle and buffalo (Joint Project with Uni. Edinburg, co-funded by British Council, Univ. of Edinburgh and UPM.

Saleha, A.A.: Antibiotic resistant coliforms in village and modern hattery chickens.

Shaik Mohd. Amin Hj. Babjee:

1. Rintangan lembu Sahiwal Friesian terhadap sengkentit *Boophilus microplus* — Amin Babjee, Dahlan dan Rasedee.
2. Parasit Gastro-usus kambing — Amin, Sultan dan Lee.
3. Rintangan lembu Kedah-Kelantan terhadap sengkentit *Boophilus microplus* — Amin Babjee.

Sheikh-Omar, A.R.:

1. Etiologic studies of pneumonia in sheep and goats.
2. Pathogenicity studies of local IBR virus isolates in cattle and buffaloes.
3. Studies on animal rotaviruses.
4. Abattoir studies on disease conditions feedlot cattle.

Abdul Aziz Saharee: Studies of *Pasteurella Multocida* with special reference to haemorrhagic septicaemia in cattle and buffaloes in Malaysia.

A. Aziz Saharee, Nadzri Salim, Fatimah Iskandar dan Shafie'e Mohamad: A study on diseases and mortality in young ruminants in Malaysia: goats and sheep in the Hulu Langat District, Selangor. IRPA Research Project.

Aini Ideris: Newcastle disease vaccination of village chickens, Ph.D thesis (ACIAR).

Aini Ideris: Characterisation of infections bronchitis virus (IRPA).

Aini Ideris: The establishment of Improved methods for the Diagnosis and Control of Live-stock Diseases in Southeast Asia using the Enzyme linked Immunosorbent Assay (ELISA).

Aini Ideris: Characterisation of *Haemophilus Paragallinarum* (MPKSN).

A.R. Sheikh-Omar, Fatimah Iskandar: Biotechnology — Molecular Detection and Analysis of Malaysian animal Rotaviruses (MPKSN).

Bashir Ahmad Fateh Mohamed, Dr. Tengku Azmi Ibrahim: Etiologi dan Patofisiologi anhidrosis pada Kuda (1988).

Bashir Ahmad Fateh Mohamed, Dr. Tengku Azmi Ibrahim, Dr. Rasedee Abdullah: Etiologi dan Pathofisiologi Anhidrosis pada Kuda (1989).

Fatimah Iskandar: Study on Diseases and Mortality in Young Ruminants in Peninsular Malaysia (IRPA).

Henry Too Hing Lee: Disease and Mortality in Young ruminants in Peninsular Malaysia. IRPA, Peringkat Awal.

Henry Too Hing Lee: Studies on atrophic rhinitis in Malaysia. Dengan kerjasama dan bantuan Eli Lilly (M'sia) Sdn. Bhd.

h.L. Too and S.W. Ko: Studies on atropic rhinitis in Malaysia. Dengan bantuan Eli Lilly (M'sia) Sdn. Bhd.

Jainudeen, M.R: Superovulation and embryo transfer (IRPA).

Jainudeen, M.R: Superovulation and non-surgical recovery of embryo from Kedah-Kelantan cattle of Malaysia (FAO).

Kalthum Hashim: Influence of various factors on the pharmacokinetics of pethidine: Anaesthesia, surgery, age, hepatic disease.

Kalthum Hashim: 'Double-blind' trial of opioids analgesics: Pethidine, pentazocine, buprenorphine and butorphanol.

Kalthum Hashim: Correlation of plasma pethidine, levels and analgesia.

Kalthum Hashim: Effects of pethidine on respiratory blood gas values.

Rashid Ibrahim: Cervical spondylopathy in the dog (Laporan Kemajuan M.Sc/Ph.D).

Dr. Nadzariah Cheng Abdullah: Studies on the cat liver fluke *Platynosomum fastosum*.

## PENERBITAN

Azmi, T.I. (1988). "Crossbreeding of swamp and river buffaloes in Malaysia", kertas kerja di **Third Crop/Livestock Farming System Research Workshop**, 15 — 19 Ogos, 1988, MARDI, Kuala Lumpur.

- Azmi, T.I., Basrur, P.K., Bongso, T.A. and Harisah, M. (1988). "The Sertoli cell of the water buffalo". *Canadian Journal of Vet. Res.* (in press).
- Harisah, M., Azmi, T.I., Bongso, T.A., Hilmi, M., Vidyadaran, M.K., Nava, Z.M., Momongan, V.G. and Basrur, P.K. (1988). "Identification of crossbred buffalo genotypes and their chromosome segregation patterns". *Genome* (in press).
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- Salam Abdullah, A., Noordin, M.M. and Rajion, M.A. (1988). "Neurological disorders in sheep suring signal grass (*Brachiaria decumbens*) toxicity". *Veterinary and Human Toxicology* 31: 128 - 129.
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- Kuan, K.K. (1988). "Breeding Herd Management". *Annals Federation Livestock Farmers Assoc. Malaysia*, m.s. 69 - 78.
- Peter Davis (1989). "A rapid method for determining the digestibility of steam-treated agricultural by-products", *Prosiding Seminar 'Modernization in Tropical Livestock & Poultry Production'*, Genting Highlands, m.s. 116 - 119.
- Hogan, J.P., Cook, L.J. and Davis, p. (1988). "The Nutritional Value of Rice Pollard for Sheep". *Aust. J. Agric. Res.* 39: 525 - 31.
- Ramlah Hamid and Jalaludin, S. (1988). "Effects of feeding supplementary fat and constant energy to protein ratio on performance of laying hens". *Prosiding XVIII World Poultry Congress*, Nagoya, Japan, m.s. 963 - 940.
- Ramlah Hamid and Jalaludin, S. (1989). "Responses of laying hens fed at specific meal times". *Prosiding Seminar 'Modernization in Tropical Livestock and Poultry Production'*, Genting Highlands, m.s. 17 - 21.
- Ramlah Hamid, Hutagalung, R.I. and Vohra, P.N. (1989). "Dietary self selection by laying hens offered choices of feed". *Pertanika* 12(1).
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Basrur, P.K., Bongso, T.A., Harisah, M., Hilmi, M., Azmi, T.I. and Vidyadaran, M.K. (1988). "Recent advances in cytogenetics in water buffaloes". Prosiding **II World Buffalo Congress**, New Delhi, Vol. I, m.s. 301.

Vidyadaran, M.K., Rajion, M.A. and Tuen, A.A. (1988). "Goat Meat Production in Malaysia". *Goat Meat Production in Asia*, Ed. C. Devendra. m.s. 140 – 151.

Jelan, Z.A., Azmi, T.I., Hilmi, M., Basrur, P.K. and Bongso, T.A. (1988). "Performance of crossbred water buffalo under improved nutritional environment". Prosiding **II World Buffalo Congress**, New Delhi.

Symposium on Sheep Production in Malaysia (1988). Prosiding. Ed. M.K. Vidyadaran, Zamri Saad, Abdul Wahid Sulaiman, Azmi, T.I. and M.A. Rajion.

Symposium on Buffalo Genotypes for Small Farms in Asia (1989). Compiled : M.K. Vidyadaran, Azmi, T.I. and Hilmi, M.

Azmi, T.I., Bongso, T.A. and Basrur, P.K. (1989). "Chromosome evaluation of production characteristics in the water buffaloes – Goals and objectives", kertas kerja di **Simposium Antarabangsa Buffalo Genotypes for Small Farms in Asia**, 15 – 19 Mei, 1989, Kuala Lumpur.

Harisah, M., Azmi, T.I., Bongso, T.A., Hilmi, M., Vidyadaran, M.K., Naca, Z.M., Momongan, V.G. and Basrur, P.K. (1989). "Chromosome make-up of water buffalo breedtypes in South East Asia", kertas kerja di **Simposium Antarabangsa Buffalo Genotypes for Small Farms in Asia**, 15 – 19 Mei, 1989, Kuala Lumpur.

Azmi, T.I., Jelani, Z.A. and Harish, M. (1989). "Chromosome make-up and production traits in crossbred buffaloes", kertas kerja di **Simposium Antarabangsa Buffalo Genotypes for Small Farms in Asia**, 15 – 19 Mei, 1989, Kuala Lumpur.

Harisah, M. and Azmi, T.I. (1989). "Heterosis estimates for growth rates in crossbred water buffaloes", kerja-kerja di **Simposium Antarabangsa Buffalo Genotypes for Small Farms in Asia**, 15 – 19 Mei, 1989, Kuala Lumpur.

Azmi, T.I., Vidyadaran, M.K. and Hardy, N. (1989). "Phenotypic identification of the grade (karyotype) of crossbred buffaloes", kertas kerja di **Simposium Antarabangsa Buffalo Genotypes for Small Farms in Asia**, 15 – 19 Mei, 1989, Kuala Lumpur.

Gan, Y.Y., Azmi, T.I., Tan, S.G. and Latif, A.I. (1989). "Restriction fragment length polymorphisms (RFLP) of mitochondrial DNA (mt DNA) in buffaloes", kertas kerja di **Simposium Antarabangsa Buffalo Genotypes for Small Farms in Asia**, 15 – 19 Mei, 1989, Kuala Lumpur.

Vidyadaran, M.K. and Azmi, T.I. (1989). "Reproductive performance of swamp buffalo bulls", kertas kerja di **Simposium Antarabangsa Buffalo Genotypes for Small Farms in Asia**, 15 – 19 Mei, 1989, Kuala Lumpur.

Basrur, P.K., Vidyadaran, M.K. and Azmi, T.I. (1989). "Ultrastructural alterations in the Sertoli cells of crossbred buffaloes", kertas kerja di **Simposium Antarabangsa Buffalo Genotypes for Small Farms in Asia**, 15 – 19 Mei, 1989, Kuala Lumpur.

Hilmi, M. (1989). "Reproductive performance of female water buffalo breedtypes", kertas kerja di **Simposium Antarabangsa Buffalo Genotypes for Small Farms in Asia**, 15 – 19 Mei, 1989, Kuala Lumpur.

Bongso, T.A., Hilmi, M., Sopian, M. and Zulkifli, S. (1988). "Chromosomes of gaur cross domestic cattle hybrid". *Research Vet. Science* 44 : 251 – 254.

Hilmi, M. and Ishak Djafar (1988). Terjemahan buku "The Viscera of the Domestic Mammal" Second Revised Edition ke dalam Bahasa Malaysia.

Azman, N.N., Mohd. Zamri, S., Babjee, M.M. and Hilmi, M. (1988). "Observation on spermatogenesis of gaur (*Bos gaurus*) x cattle *Bos indicus/Bos taurus* hybrid – Selembu, kertas kerja di **Kongres Ke 6 FAVA**, 16 – 19hb. Oktober, 1988, Denpasar, Bali, Indonesia.

Tuen, A.A. and Mohd. Mahyuddin Dahan (1989). "Rice straw utilization by goats", IAEA publication (in press).

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- Ramakrishnan, P., Adnan, S., Nordin, Y. and Shanmugavelu, S. (1989). "Semen characteristics of the crossbred buffalo (3/4 river type possessing 2n=49 chromosomes)". Prosiding Seminar "Modernization in Tropical Livestock and Poultry Production", Genting Highlands, m.s. 199 – 203.
- Adnan, S., Jainudeen, M.R., Alimon, A.R. and Sharifuddin, W. (1989). "Ovarian function and growth performance in indigenous goats in Malaysia", kertas kerja di IAEA/FAO Final Coordination Meeting on "Improving sheep and goat productivity with the aid of nuclear techniques", 20 – 24hb. Februari, 1989, Perth, Australia.
- Ramakrishnan, P., Adnan, S., Nordin, Y. and Shanmugavelu, S. (1989). "A comparison of semen characteristics of the swamp and Murrah buffalo", kertas kerja di Simposium Antarabangsa Buffalo Genotypes for Small Farms in Asia, 15 – 19hb Mei, 1989, Kuala Lumpur.
- Jelan, Z.A. (1988). "Crop residues from rice farming for animal production", kertas kerja di Third Crop-Animal Systems Research Workshop, 15 – 19 Ogos, 1988, MARDI, UPM.
- Rajion, M.A. (1988). "Sheep research in Universiti Pertanian Malaysia". Prosiding Symposium on Sheep Production in Malaysia, Kuala Lumpur, m.s. 89 – 97.
- Rajion, M.A. and Rostam, H. (1988). "Plantation – livestock integrated farming systems in Malaysia". Kertas kerja di 18th Regional Training Programme on Development Strategies and Planning for Farmer's Communities, SEARCA, Serdang, Malaysia.
- A.L. Ibrahim and I. Aini. (1988). Man, Poultry and Viruses. *Journal of Impact of Science and Society*, No. 150, 171 – 178.
- A.L. Ibrahim (1988). Application of Electron Microscope in the Study of Virus Host Interaction. *Proceeding IVth Asia-Pacific Conference and Workshop on Electron Microscopy, Bangkok, 1988 p.* 629 – 630.
- A.L. Ibrahim (1988). Molecular Approaches In The Control of Newcastle Diseases. In Sipat, A., Ampon, K., Perumal, R., Aziz, Veterinary Association Malaysia. March 10 – 12, 1989, K.L. pp. 16 – 20, September 5, 1981, Penang.
- A.L. Ibrahim (1988). Research on Poultry Diseases at Universiti Pertanian Malaysia. Paper presented at ASEAN Seminar on Poultry Diseases and Their Control at VRI, Ipoh 15 Mac, 1988.
- A.L. Ibrahim. Molecular Approaches to the Control of Diseases of Veterinary Importance in Malaysia. Paper presented at Simposium Kebangsaan Biologi Molekular, Universiti Malaya. 29 May 1988.
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Asian/Pacific Poultry Health Conference, Surface Paradise, Australia 23 – 25 September, 1988.

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### **Cheng, B.Y.N**

Cheng, B.Y.N., Habibah, A. and Mutalib, A.R. (1989). Castration in the pig-tailed macaque. First Congress and Inaugural General Meeting, Shangri-La Hotel, Kuala Lumpur, March 10 – 12, 1989.

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Rasedee Abdullah: **Penterjemahan**

1. **Hematology:** A pathophysiological approach B.M. Babiro & T.P. Stossel (396 halaman).
2. **Veterinary Parasitology:** G.W. Urquhart, J. Armour, J.L. Duncan, A.M. Dunn, & F.W. Jennings (286 halaman) – Menterjemah 149 halaman.

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Cheng B.Y.N., Habibah, A., Mutalib, A.R. CastRATION in the pig - tailed macaque (*Macaca nemestrina*). Proceedings of the First Congress, Veterinary Association, Malaysia. Kuala Lumpur 10 – 12 March 1989.

#### SEMINAR/BENGGEL/KURSUS

“International Training Course on Animal Nutrition in the Tropics and Subtropics” yang diadakan di Feldafing, German Barat pada 21hb. Mei hingga 30hb. Jun, 1988 anjuran GERman Foundation for International Development. Dihadiri oleh En. Osman Awang.

Bengkel Komputer Mikro 2/88 DBASE III yang diadakan pada 3hb hingga 7hb Oktober, 1988 anjuran INTAN. Dihadiri oleh En. Osman Awang.

Seminar “Grassland and Forage Production and Utilization in Farming Systems in South East Asia” yang diadakan di UPM, Serdang pada 27hb. Februari hingga 3hb. Mac, 1989 anjuran FAO dari UPM. Dihadiri oleh En. Osman Awang.

Konferen ke 12 Malaysian Society of Animal Production “Modernization in Tropical Livestock and Poultry Production” yang diadakan di Genting Highlands, Pahang pada 29hb. hingga 31hb. Mac, 1989. Dihadiri oleh En. Osman Awang, En. Mohammed Peter Davis, Puan Ramlah Hamid, Dr. Mohd. Hilmi, En. Andrew Alek Tuen, Dr. Tan Hock Seng, Dr. Adnan Sulong, Dr. Zainal Aznam Jalan, Dr. Tengku Azmi dan Dr. Mohd. Ali Rajion.

Kongres Pertama Persatuan Veterinar Malaysia yang diadakan di Hotel Shangri La, Kuala Lumpur pada 10hb hingga 12hb Mac, 1989. Dihadiri oleh En. Osman Awang, Dr. Kuan King Kai, Puan Ramlah Hamid, Dr. M.K. Vidyadaran, Dr. Mohd. Hilmi, Dr. Wan Nordin, Dr. Tan Hock Seng, Dr. Adnan Sulong, Dr. Tengku Azmi, Dr. Abdul Salam Abdullah dan Dr. Kassim Hamid.

Seminar “Recent Advances in Animal Health and Production” yang diadakan di Fakulti Kedokteran Veterinar dan Sains Peternakan, UPM pada 1hb April, 1989 anjuran FKVSP dan UPM Vet. Alumni. Dihadiri oleh En. Osman Awang, Puan Ramlah Hamid, Dr. Mohd. Ali Rajion, Dr. Hew Peng Yew. Dr. Adnan Sulong dan Dr. Tengku Azmi.

Symposium “Sheep Production in Malaysia” yang diadakan di Kuala Lumpur pada 15hb hingga 16hb November, 1988. Dihadiri oleh Dr. Kuan King Kai, Dr. Mohd. Hilmi, Dr. Wan Nordin, Dr. Tengku Azmi, En. Andrew Alek Tuen, Dr. M.K. Vidyadaran dan Dr. Mohd. Ali Rajion.

Seminar “Technical barrow” yang diadakan di Port Dickson pada 9hb. hingga 11hb. Disember, 1988. Dihadiri oleh Dr. Kuan King Kai.

Malaysian-Danish Agro-Industrial Symposium

yang diadakan di Kuala Lumpur pada 6hb. hingga 7hb. Mac, 1989. Dihadiri oleh Dr. Kuan King Kai dan Dr. Kassim Hamid.

18th World Poultry Congress and Exhibition yang diadakan di Nagoya, Japan pada 4hb hingga 9hb September, 1988. Dihadiri oleh Puan Ramlah Hamid.

Exposition di "Second ASEAN Science and Technology Week" yang diadakan di Manila, Philippines pada 30hb Januari hingga 4hb Februari, 1989. Dihadiri oleh Puan Ramlah Hamid.

Finan RCM on "Improving Sheep and goat productivity with the aid of nuclear technique" yang diadakan di Perth, Australia pada 20hb hingga 24hb. Februari, 1989. Dihadiri oleh En. Andrew Alek Tuen and Dr. Adnan Sulong.

II World Buffalo Congress yang diadakan di New Delhi, India pada 12hb. hingga 17hb. Disember, 1988. Dihadiri oleh Dr. Tengku Azmi, Dr. M.K. Vidyadaran, Dr. Mohd. Hilmi dan Dr. Zainal Jelani.

International Symposium on Buffalo Genotypes for Small Farms in Asia yang diadakan di Kuala Lumpur pada 15hb. hingga 19hb. Mei, 1989 anjuran International Development Research Centre, Canada dan Universiti Pertanian Malaysia. Dihadiri oleh Dr. Tengku Ami, Dr. M.K. Vidyadaran, Dr. Mohd. Hilmi, Dr. Zainal Jelani dan Dr. Wan Nordin.

IAEA Research Co-ordination Meeting on "Application of Radioimmunoassay to Improving the Reproductive Efficiency and Productivity of Large Ruminants" yang diadakan di Vienna, Austria pada 5hb hingga 9hb. September, 1988. Dihadiri oleh Dr. Tan Hock Seng.

2nd Research Coordination Meeting on "Feeding Strategies during Period of Fluctuating Feed Supplies" yang diadakan di Vienna, Austria pada 13hb. hingga 18hb. Mac, 1989. Dihadiri oleh Dr. Zainal Aznam Jelani.

Third Crop/Livestock Farming System Research Workshop yang diadakan di MARDI, Kuala Lumpur pada 15hb hingga 19hb. Ogos, 1988. Dihadiri oleh Dr. Tengku Azmi dan Dr. Zainal Aznam Jelani.

Malaysia-Canada Dairy Technical Seminar yang

diadakan di Kuala Lumpur pada 11hb. Oktober 1988. Dihadiri oleh Dr. Tengku Azmi.

Bengkel "Formulation of Strategies for Self Reliance in Reproductive Research" yang diadakan di Port Dickson pada 27hb. hingga 29hb. Januari, 1989 anjuran LPPKN. Dihadiri oleh Dr. Tengku Azmi.

Training Course on Animal Production in the Tropics yang diadakan di DSE Feldafing, West Germany pada 1hb. hingga 30hb. September, 1988. Dihadiri oleh Dr. Kassim Hamid.

Forum Dasar Ekonomi Baru: Penyelesaian Selepas 1990 yang diadakan di Universiti Pertanian Malaysia pada 21hb. Mac, 1989. Dihadiri oleh Dr. Kassim Hamid dan Dr. Mohd. Ali Rajion.

Seminar on Editors Role in Journal Editing yang diadakan di MARDI, Serdang pada 18hb. hingga 20hb. Oktober, 1988. Dihadiri oleh Dr. Abdul Salam Abdullah.

International Toxicology Seminar in Environmental Toxicology yang diadakan di Bangkok, Thailand pada 14hb. hingga 20hb. November, 1988. Dihadiri oleh Dr. Abdul Salam Abdullah.

18th Regional Training Programme on Development Strategies and Planning for Farmers' Communities yang diadakan di UPM, Serdang pada 1hb. hingga 12hb. Ogos, 1988 anjuran SEARCA. Dihadiri oleh Dr. Mohd. Ali Rajion.

Livestock-Tree Cropping Workshop yang diadakan di MARDI, Serdang pada 5hb hingga 9hb. Disember, 1988. Dihadiri oleh Dr. Mohd. Ali Rajion.

CHICHE Sheep Programme Educational visit to United Kingdom, 17hb. April hingga 15hb. Mei, 1989 oleh Dr. Mohd. Ali Rajion.

Program Induksi Pegawai UPM yang diadakan di UPM, Serdang pada 23hb hingga 25hb Mei, 1989. Dihadiri oleh Dr. Abdul Salam Abdullah dan Dr. Mohd. Ali Rajion.

Kursus pendek histopatologi (Peringkat Kebangsaan) telah diadakan pada 6 - 8 Disember, 1988.

12 pensyarah dari Jabatan Patologi & Mikrobiologi Veterinar telah menghadiri Symposium on sheep production in Malaysia di Hotel Ming Court, Kuala Lumpur pada 15 – 16 Nov. 1988.

6 pensyarah dari Jabatan Patologi & Mikrobiologi Veterinar telah menghadiri Workshop on the diagnosis, control and eradication of Brucellosis in Asia and Western Pacific di Hotel Ming Court, Kuala Lumpur, 17 – 19 Jan. 1989.

Seorang pensyarah dari Jabatan Patologi & Mikrobiologi Veterinar telah menghadiri Seminar Penulis Kebangsaan Pengajian Tinggi, Kuala Lumpur, 26 Jan. 1989.

3 orang pensyarah dari Jabatan Patologi & Mikrobiologi Veterinar telah menghadiri Seminar 25th Annual Scientific Seminar of Malaysian Soc. of Parasitology and Tropical Medicine, IMR, 23 – 25 Feb. 1989.

12 pensyarah dari Jabatan Patologi & Mikrobiologi Veterinar telah menghadiri Seminar First Congress and inaugural General Meeting of Veterinary Association of Malaysia di Hotel Shangri-La, Kuala Lumpur pada 10 – 12 Mac, 1989.

12 pensyarah dari Jabatan Patologi & Mikrobiologi Veterinar telah menghadiri Seminar on Recent Advances in Animal Health and Production di Fakulti Kedokteran Veterinar dan Sains Peternakan, Universiti Pertanian Malaysia, Serdang pada 1 April 1989.

Seorang pensyarah dari Jabatan Patologi & Mikrobiologi Veterinar telah menghadiri Symposium on sheep in Malaysia sponsored by DVS, Kumpulan Guthrie, UPM and MSAP at the Ming Court Hotel, Kuala Lumpur on 15 – 16 November 1988.

Seorang pensyarah dari Jabatan Patologi & Mikrobiologi Veterinar telah menghadiri Sixth Congress of the Federation of Asian Veterinary Association (FAVA) held at Denpasar, Bali, Indonesia from 16 – 19 Oktober 1988.

Dua orang pensyarah dari Jabatan Patologi & Mikrobiologi Veterinar telah menghadiri Simposium Persatuan Mikrobiologi Malaysia Ke 11, anjuran Persatuan Mikrobiologi Malaysia dan Universiti Kebangsaan Malaysia di Holiday Inn, Kuala Lumpur pada 22 – 23 Ogos 1988.

Seorang pensyarah dari Jabatan Patologi & Mikrobiologi Veterinar telah menghadiri International Toxicology November 14 – 18, 1988 di Bangkok, Thailand.

First Congress and Inaugural General Meeting, Veterinary Association, Malaysia. March 10 – 12, 1989, Kuala Lumpur.

Friskies UPM Seminar for the Small Animal Practitioner (UPM-Nestle) 7 – 8 April 1989. Ming Court Hotel, Kuala Lumpur. Membentang kertas "Referral cases presented to the UPM Veterinary Teaching Hospital" (Apr 8) dan Pengerusi (Apr of).

Friskies Veterinary Symposium for the Small Animal Practitioner Aug 5, 6 1988, Kuala Lumpur. Membentang dua kertas.

i) A cat with leukemia and non-regenerative anemia.

ii) Babesiosis in a splenectomized dog.

Regional Brucellosis Workshop – at Ming Court 17 – 19 Januari 1989.

Seminar on Recent Advances in Animal Health and Production at UPM. 1 April, 1989.

Regional ACIAR/AIDAB Coordination Meeting – UPM. 29 – 31 May, 1989.

First Research Coordination Meeting and Training Workshop of the Coordinated Research Programmes on "Strengthening Animal Reproduction Research in Asia through the Application of Immunoassay Techniques diadakan pada 22 – 31 Mei, 1989, Universiti Pertanian Malaysia, Serdang.

## FAKULTI EKONOMI DAN PENGURUSAN

### DEKAN

Dr. Mohd. Ariff bin Hussein, B. Agric. Sc. (Hons) Malaya M.S, Ph. D (Penn State)

### KAKITANGAN

Jumlah Kakitangan

Jabatan	Kategori			
	A	B	C	D
Pejabat Dekan	3	2	9	12
Ekonomi Sumber Asli	14	—	1	2
Pengurusan dan Pemasaran	19	—	1	2
Perakaunan dan Kewangan	18	—	—	—
Ekonomi Pertanian	13	—	1	1
Ekonomi	15	—	1	2
<b>Jumlah</b>	<b>82</b>	<b>2</b>	<b>13</b>	<b>19</b>
<b>Jumlah Besar</b>	<b>166</b>			

#### Perlantikan Baru

Seramai 2 orang pensyarah, 4 orang Prof. Madya telah dilantik.

#### Perletakan Jawatan

Seorang pensyarah telah meletak jawatan dan seorang pensyarah kontrak telah tamat kontrak.

#### Cuti Pelajar

Seramai 19 pensyarah sedang mengikuti kursus di dalam dan luar negeri. (Ph.D — 12 orang, Master — 3, Cuti sabatikal — 3 orang).

### PERKARA AKADEMIK

#### Ijazah Lanjutan

Seramai 85 orang pelajar mengikuti Ijazah Lanjutan iaitu Ph.D — 10, Master Sains — 41, MBA — 34.

#### Program Bachelor

Seramai 1108 orang pelajar mengikuti program

Bachelor di Fakulti iaitu:

- a) B.S. Perniagaantani — 531 orang
- b) B.S. Ekonomi Sumber — 246 orang
- c) Bachelor Perakaunan — 186 orang
- d) Dip. Perniagaantani — 145 orang

#### Pemeriksa Luar

Seramai 3 orang pemeriksa luar bertugas di Fakulti. Mereka ialah:

- i) Prof. Werner Doppler dari Universiti of Hohenheim, German Barat (B.S Ekonomi Sumber).
- ii) Prof. Susan Dave, dari Universiti of London, England (Bachelor Perakaunan).
- iii) Prof. James Marsden dari University of Kentucky, U.S.A. (B.S. Perniagaantani).

### PENYELIDIKAN

Dr. Fatimah Arshad — Causality in Selected Agricultural Commodity Prices.

Dr. Fatimah Arshad, Dr. Abd. Aziz Abdul Rahman, Dr. Mad Nasir Shamsudin – Evaluation of Malaysia Agricultural Policy.

Dr. Mohd. Ghazali Mohayidin & Dr. Abd. Aziz Abdul Rahman – Economics of Malaysian Paddy Production.

Dr. Mad Nasir Shamsudin – Agricultural Productivity, Measurement and Analysis.

Dr. Zainal Abidin Mohamed & Dr. Roslan A. Ghaffar – Analisa Margin Pemasaran dan Causal Ordering Terhadap Harga Di tahap Runcit, Borong dan Ladang di Sektor Ternak Ayam.

Zainal Abidin Mohd. Tambi, Mahfoor Harron & Dr. Mad Nasir Shamsudin – Farm Management Study of Farming System Based on Perennial Crops.

Dr. Mohd. Ghazali Mohayidin & Ismail Sulong – Kajian Mengenai Impek Faktor-Faktor Dalam dan Luar Ke atas Pembangunan Sistem Perladangan.

Dr. Roslan A. Ghaffar & Abu Hassan Md. Isa – Penilaian Prestasi Kewangan Pertubuhan Peladang Kawasan (PPK).

Ahmad Shuib dan Mahfoor Hj. Harron – Kajian Kecekapan Peruntukan Sumber di Rancangan Penanam Padi di Sarawak dan Sabah.

Dr. Sahak Mamat – Kajian Strategi Pembangunan Tanah Terbiar di Kelantan.

Shaik Mohd NoorAlam S.M. Hussein & Zainal Abidin bin Mohd. Tambi – Jual-Janji, Amalan dan Pengiktirafan.

Dr. Mohd. Ismaif Ahmad – Patterns and Characteristics of Foreign Manufacturing Investments in Agro and Resource - Based Industries in Malaysia.

Samsinar Md. Sidjin, Dr. Md. Zabid Abdul Rashid and Mohd. Mansor Ismail – Marketing Mix Characteristics of Agricultural Inputs in Malaysia: A Consumer Behavioral Approach.

Dr. Maisom Abdullah – Labour Absorption (Employment) Technology Transfer and Productivity in Malaysian Agrobased Industries.

Habrizah Hussein, Dr. Zainal Abidin Mohamed – Optimal Dairy Plant Location in Peninsular Malaysia.

Dr. Abdul Aziz Abdul Rahman – Capital Structures of Malaysian Agricultural and Agrobased Manufacturing Industries.

Hj. Shahril Abd. Karim – A Study of Protection and Subsidies in the Manufacturing Sectors.

Samsinar Md. Sidin, Zainal Abidin Mohamed & Salmah Mohamed – Perbandingan Antara Firma.

Dr. Shaari Abdul Hamid, Arfah Salleh & Badriyah Minai – Development of Performance Index for Small Scale Industry.

Zaidnal Abidin Kidam & Yaakob Ibrahim – Strategi Pemasaran Perusahaan-Perusahaan Bumiputra Dalam Industri Pemprosesan Makanan.

Meharani Ramasamy – Credit Policy Practices of Small and Medium Sized Companies in Malaysia.

Dr. Shaari Abdul Hamid, Dr. Mohd. Ghazali Mohayidin and Yaakob Ibrahim – Upgrading of the Technology Delivery System for The Small and Medium Scale Enterprise.

Zainal Abidin Mohammed, Dr. Ghazali Mohayidin, Yaakob Ibrahim & Dr. Shaari Abd. Hamid – Flexibility Study of Setting Up Technology Transfer Centre in Johore.

Ommei Kalsum S. Rautar & Dr. Mohd Zabid Abd. Rashid – Amalan-Amalan Pengurusan Sumber Manusia di Sektor Perniagaantani Malaysia.

Arfah Salleh, Annuar Md. Nasir, Zainal Abidin Kidam & Mohd. Ali Abdul Hamid – Anomalies in Malaysian Stock Market : An Empirical Analysis.

Mohd Zain Mohammed – Decision Support Systems in Malaysian Firms.

Dr. Mohd. Zabid Abd. Rashid & Zainal Abidin Mohamed – Divestment Strategies and Processes in Malaysia.

- Wan Abdul Rahman Wan Ali & Salleh Yahya – Amalan-amalan Pengurusan Operasi di Firma-Firma Perniagaantani.
- Yaakob Ibrahim & Dr. Shaari Abd. Hamid – Kesan-kesan Persekitaran Sosio-ekonomi Terhadap Kejayaan Individu Sebagai Usahawan.
- Dr. Zainal Abidin Mohamed, Mohd Mansor Ismail & Dr. Mad Nasir Shamsudin – Assessment of Sheep Industry in Malaysia.
- Mahfoor Hj. Harron & Zainal Abidin bin Mohd Tambi – Economic Analysis of Corn and Sorghum Silage as An Alternative Feed for Dairy.
- Dr. Chew Tek Ann – Farm Management Study of Rubber Estates Using LOTUS 1-2-3.
- Dr. Nik Mustapha Raja Abdullah & Ahmad Shuib – Iklan Pembangunan Kemudahan Pelancongan dan Rekreasi di Pulau Tioman.
- Azman Hassan, Dr. Roslan A. Ghaffar & Habrizah Hussein – Kecekapan dan Ekonomi Bidang-an Dalam Sektor Pengangkutan : Kes Keretapi Tanah Melayu.
- Mariam Abd. Aziz – Analisis Nisbah Cukai & Daya Percukaian Kes di Malaysia.
- Saroni Judi & Dr. Roslan A. Ghaffar – Kapasiti, Kos & Kecekapan Industri Pemprosesan Kayu Gergaji.
- Mohd. Mansor Ismail & Muzafar Shah Habibullah – Bee-Honey Industry in Malaysia : Structure, Cost and Efficiency.
- Dr. Mohammed Yusoff – Malaysian Foreign Exchange Market.
- Muzafar Shah Habibullah – Permintaan Wang oleh Firma-Firma Di Malaysia.
- Zainal Abidin Mohamed – Proses Perancangan Yang Dipraktikkan oleh Organisasi Besar di Malaysia.
- Zainal Abidin Kidam – Relationship Between Work Values, Characteristics, Motivation and Productivity of Malaysian Farmers : A Cross Cultural Comparative study.
- Habrizah Hussein & Zainal Abidin Mohamed – Sistem Pengurusan Syarikat-Syarikat Pengangkutan Barangan Lembah Kelang.
- Loo Sin Chun – The Relationship Between Malaysia and Major International Equity Indices.
- Arfah Salleh, Badriyah Minai, Hashanah Hj. Ismail & Nor Aziah Abu Kassim – Pembentukan Sistem Perakaunan Untuk Pengusaha-Pengusaha Kecil.
- Zainal Abidin Mohamed & Samsinar Md. Sidin – Struktur Pasaran Sektor Pembutan Berasaskan Perkayuan dan Implikasinya Terhadap Pembentukan Strategi Pemasaran Perusahaan Kecil Bumiputra.
- Dr. Wan Leong Fee – Investment Strategy in ASEAN Energy Markets.
- Dr. Mad Nasir Shamsudin – Agricultural Commodity and Policy Modeling System.
- Zainal Abidin Mohamed, Eddie Chiew Fook Chong & Dr. Mad Nasir Shamsudin – Government Industries and Comparative Advantage in Livestock and Feedstuffs Sectors in Malaysian.
- Dr. Mohd. Ariff Hussein – Ekonomi Sumber Asli dan Pengurusan Akuakultur.
- Dr. Abdul Aziz Abd. Rahman – En Economic Analysis of Agriculture System and Policy Implications, Macro and Micro Perspective.
- Gordon V. Oed – Management Accounting Practices in Malaysia.
- Salmah Mohammed & Dr. Shaari Abd. Hamid – Masalah-masalah Yang Dihadapi oleh Firma-Firma Kecil di dalam Mendapatkan Bantuan Kewangan.
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Dr. Ishak Hj. Omar, Dr. Syed Kadir Alsagoff, Kusairi Mohd Noh, Nik Mustapha Raja Abdullah – Sistem Pangu Bagi Bot Pukat Jerut : Projek Perundingan Anjuran Lembaga Kemajuan Ikan Malaysia.

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A'amir Nordin & Arfah Salleh – Financial Reporting Practices.

Dr. Mohd. Ariff Hussein & Dr. Syed Kadir Alsagoff – Kajian Sistem Bersepadu Pertanian – Akuakultura di Perak.

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#### SEMINAR/KURSUS YANG DIHADIRI

Mariam Aziz menghadiri Seminar The New Economic Policy after 1990 di UPM - April 1989.

Ahmad Shuib menghadiri Gearing For 1990, National Tourism Conference pada 18-19 Dec. 1988.

Ahmad Shuib menghadiri National Conference on Developing The Image and Increasing Prospect of Tourist Industry in Malaysia for The 1990's - 2 April 1988.

Dr. Mohd. Zabid Abd. Rashid menghadiri Southeast Asia Regional Conference Academy of International Business, pada 23-25 Jun 1988, di Bangkok.

Dr. Mohd. Zabid Abd. Rashid menghadiri Corporate Revitalisation for Government Enterprise, pada 25-27 September 1988 di Desaru, Johor.

Meharani Ramasamy menghadiri 4th National Accountant Conference pada 19-20 Ogos 1988 di PWTC, Kuala Lumpur.

Meharani Ramasamy menghadiri kursus Penggunaan Microsoft word pada 25-26 Ogos 1988 di UPM.

Meharani Ramasamy menghadiri Current Developments in Banking & Commercial Law pada 27-28 Jun 1989 di Kuala Lumpur.

Hj. Shahril Hj. Abd. Karim, menghadiri Seminar Kebangsaan Industri Nenas, anjuran Lembaga Perusahaan Nenas Tanah Melayu pada 14-15 Nov. 1988 di Desaru, Johor.

Hj. Shahril Hj. Abd. Karim, menghadiri Konferensi, 'Dasar Pertanian Malaysia' anjuran PKDP, UPM pada 21-23 Jun 1988.

Hj. Shahril Hj. Abd. Karim, Dr. Roslan A. Ghaffar, Muzafar Shah Habibullah menghadiri Federation of ASEAN Economic Assoc. Conference pada 17-19 Nov. 1988 di Pulau Pinang.

Hj. Shahril Hj. Abd. Karim menghadiri National Outlook Conference, anjuran Malaysian Institute of Econ. Research, 29-30 Nov. 1988 di Kuala Lumpur.

Hj. Shahril Hj. Abd. Karim menghadiri Kongress Ekonomi Pemuda UMNO Malaysia pada 18-19 Februari 1989 di Kuala Lumpur.

Hj. Shahril Hj. Abd. Karim menghadiri Seminar Usahawan Bumiputra, anjuran Bank Bumiputra, 7-8 Mac 1989 di Bangi, Selangor.

Hj. Shahril Hj. Abd. Karim penganjur Forum "Dasar Ekonomi Baru Selepas 1990," PKDP, UPM pada 21 Mac 1989.

Azman Hassan menghadiri Seminar on "Industry Trends and Outlook" pada Dec. 1988 di Kuala Lumpur.

Azman Hassan menghadiri Bengkel Tertutup Pemikiran Sistem Ekonomi Islam Berasaskan Syariah, Mac 1989 di Kuala Lumpur.

Azman Hassan, Muzafar Shah Habibullah & Roslan A. Ghaffar menghadiri National Seminar on "Issues on Fiscal and Monetary Policies: Implication On Economic Development, August 1988, di UUM, Kedah.

Azman Hassan, Maisom Abdullah, Ommei Kalsum S. Rautar, Nik Mustapha Raja Abdullah, Muzafar Shah Habibullah menghadiri Forum "Dasar Ekonomi Baru: Penyelesaian Selepas 1990" anjuran PKDP pada 21 Mac 1989 di UPM.

Mohd. Ariff Hussein, Maisom Abdullah, Roslan A. Ghaffar, menghadiri International Seminar On Malaysian Agricultural Policy: Issues and

Direction, UPM, June 1988.

Wang Leong Fee menghadiri International Ocean Seminar pada 24-6 Dec 1989 di Kuala Lumpur.

Wan Leong Fee menghadiri Manila International Symposium on the Development and Management of Energy Resources pada 26-28 January 1989, di Manila.

Wan Leong Fee menghadiri GASTECH 88 The 13th International LNG/LPG Conference & Exhibition pada 18-21 Okt. 1988 di Kuala Lumpur.

Nik Mustapha Raja Abdullah menghadiri Seminar Pengendalian & Pemprosesan: Aspek Utama Pemasaran Perikanan di Malaysia pada 27-28 Mac 1989.

Nik Mustapha Raja Abdullah menghadiri Seminar Sumber Perikanan Laut Dalam Di Zon Eksklusif (ZEE) Malaysia pada 20 Mei 1989.

Maisom Abdullah menghadiri Post Budget Panel Discussion pada 22 Okt. 1988 di Kuala Lumpur.

Maisom Abdullah menghadiri Bengkel Kecemerlangan Akademik pada 2 Mac 1989 di UPM.

Maisom Abdullah menghadiri Bengkel Project Planning and Evaluation Experiences from Developing Countries pada 1 April 1989 di UPM.

Maisom Abdullah menghadiri Successful Development Strategies of Pacific Rim Countries and Their Relevance to Malaysia, INTAN, pada 20 Jan. 1989 di INTAN.

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Maisom Abdullah menghadiri Bengkel Dasar Ekonomi Baru 1990 pada 14 Jun 1989 di UPM.

Syed Kadir Alsagoff pengerusi Kursus Motivasi & Keusahawanan UPM pada 17-29 April 1989 di PPPL, UPM.

Syed Kadir Alsagoff menghadiri Seminar Marketing & Technological Issues in Exporting Fish Products" anjuran LKIM/MFS pada 18-19 Ogos 1988 di Kuala Lumpur.

Zainal Abidin Mohamed menghadiri kursus Strategic Planning pada 24-25 Januari 1989.

Zainal Abidin Mohamed menghadiri Seminar Usahawan Bumiputra pada 7-8 Mac 1989 di BBMB, Bangi.

Zainal Abidin Mohamed memberi ceramah pengurusan untuk pegawai Kanan Kementerian Pertanian di ILPP pada 28 Februari 1989.

Zainal Abidin Mohamed memberi ceramah "Motivasi & Usahawan" untuk pelajar UPM di PPPL pada 17-29 April 1989.

Abd. Aziz Abd. Rahman reprotuer Forum on 'New Economic Policy: Solution After 1990', Organised by Centre for Agricultural Policy studies, Universiti Pertanian Malaysia, Serdang, March 1989.

Abd. Aziz Abd. Rahman menghadiri Thirteenth Annual Conference of the Federation of ASEAN Economic Associations on 'Foreign Investment in ASEAN: Strategies and Policies,' Jointly organised by Federation of ASEAN Economic Association (FAEA) and Persatuan Ekonomi Malaysia, Penang, November 1988.

Abd. Aziz Abd. Rahman menghadiri Seminar on 'Current Developments in Banking and Commercial Law with special emphasis on Remedies and Executions,' Jointly organised by Institut Bank-Bank Malaysia and University of Buckingham Alumni Club of Malaysia, Kuala Lumpur. January 1989.

Abd. Aziz Abd. Rahman menghadiri Annual Public Lecture on 'Insurance Regulation and Development in Singapore,' organised by The Malaysian Insurance Institute (MII), Kuala Lumpur. December 1988.

Abd. Aziz Abd. Rahman menghadiri International forum "Debt strategies for developing countries; future options, organised by Institute of Strategic and International Studies

(ISIS), in Kuala Lumpur, 11 July 1988.

Abd. Aziz Abd. Rahman menghadiri Second Commodities Policy Group Meeting, organised by The Malaysian Institute of Economic Research (MIER) in Kuala Lumpur, 13 October 1988.

Abd. Aziz Abd. Rahman menghadiri International Conference "Role of Agricultural Colleges and Universities in Poverty-Redressal" organised by Asian Association of Agricultural Colleges and Universities in Serdang, 17-20 October 1988.

Abd. Aziz Abd. Rahman menghadiri Managing Technological Change: Policies and strategies, organised by Ministry of Science and Technology, in Kuala Lumpur, 22-25 May 1989.

### SEMINAR/BENGGEL/KURSUS

Opportunities for Direct Foreign Investment in Malaysia (Peringkat Fakulti), pada 29 April 1988.

Economics of Resource Use under Different Sharing Systems in The Marine Fisheries of Malaysia (Peringkat Fakulti) pada 9 Mei 1988.

Kemudahan Untuk Melabur Dalam Amanah Saham Nasional dan Lain-lain yang disediakan oleh Malayan Banking, Cawangan Taman Sri Serdang (Peringkat Fakulti) pada 16 Jun 1988.

Public lecture: Relationship Between Research and Education in Accounting (Peringkat Fakulti) pada 8 Julai 1988.

Changes in Auditing Education – Past, Present and Future (Peringkat Fakulti) pada 6 Julai 1988.

Developing Effective Auditing Courses and Curricula (Peringkat Fakulti) pada 7 Julai 1988. Public lecture: Changes in Auditing. Practice – Past (Peringkat Fakulti) 8 Julai 1988.

Skills Migration from Developing Countries: Characteristics and Consequences (Peringkat Fakulti) pada 13 Julai 1988.

Effects of the Irrigation Management Pro-

gramme on Rice Productivity and Income in North-West Bangladesh (Peringkat Fakulti) pada 20 Julai 1988.

Changes in Soviet Economic Structure (Peringkat Fakulti) pada 3 Ogos 1988.

Participative Management System (Peringkat Fakulti) diadakan pada 16 September 1989. Some Economic Consequences of Electronic Finance (Peringkat Fakulti) diadakan pada 14 October 1988.

The Impact of Industrialisation on Land Use and Employment Structure Among Small-holders in Selangor: Some Empirical Evidence (Peringkat Fakulti) pada 26 October 1988.

Concepts of Project Planning and Evaluation Farming System (Peringkat Fakulti) pada 9 November 1988.

Patterns in the Government – Public Enterprise Relationships (Peringkat Fakulti) pada 22 November 1988.

Project Planning and Evaluation – Experiences from Developing Countries (Peringkat Fakulti) pada 1 April 1989.

Understanding Advertising (Peringkat Fakulti) pada 19 April 1989.

Seminar Antarabangsa ‘Malaysian Agricultural Policy: Issues and Direction’ pada 21/23 Jun 1988.

Forum Dasar Ekonomi Baru Penyelesaian Selepas 1990 (Peringkat Kebangsaan) pada 21 Mac 1989.

Bengkel Dasar Ekonomi Baru Selepas 1990, (Peringkat Kebangsaan) pada 14 Jun 1989.

Program Tanpa Ijazah bagi Sesi Julai/Disember 1988.

Program Tanpa Ijazah bagi Sesi Julai Semester Julai 1989.

Kursus Jangka Pendek Pengurusan di Fakulti Ekonomi & Pengurusan 12-20 Jun 1989.

Executive Training Programme in Strategic Planning January 1989.

## FAKULTI PENGAJIAN PENDIDIKAN

### DEKAN

Prof. Madya Mohd. Shah Hj. Lassim Dip. Agric (Malaya), B.S., M.S. (Louisiana State)

### KAKITANGAN

Jabatan	Kategori				
	A	B	C	D	JUMLAH
Pejabat Dekan	4	—	10	7	21
Jabatan Pendidikan	60	1	9	13	83
Jabatan Bahasa	52	2	4	7	65
Jabatan Sains Kemasyarakatan	17	—	1	3	21
<b>JUMLAH</b>	<b>133</b>	<b>3</b>	<b>24</b>	<b>30</b>	<b>190</b>

#### Perlantikan Baru

Seramai 4 orang pensyarah, seorang pensyarah (sementara), 5 orang Guru Bahasa dan seorang Pembantu Makmal telah dilantik.

#### Perletakan Jawatan/Tamat Tempoh Perkhidmatan

Seorang Professor telah tamat tempoh perkhidmatannya pada 23hb September, 1988. Tiga orang pensyarah dan seorang jurutaip telah meletak jawatan.

#### Cuti Belajar

Seramai 5 orang pensyarah sedang cuti belajar di luar negeri.

### PENYELIDIKAN

Encik Mohd. Majid Konting: Kajian Pola-Pola Penggunaan Perpustakaan oleh Pelajar UPM.

Encik Mohd. Majid Konting: Kepuasan Bekerja Guru-Guru Sains Pertanian di Negeri Melaka.

Cik Shahizah Daiman: Tahap Pengetahuan dan Amalan Kesihatan Kardiovaskular di Kalangan Pelajar Sekolah Menengah di Semenanjung Malaysia.

Cik Shahizah Daiman: Physiological and Morphological Factors Affecting and Endurance Run Test in Girls 10-11 years old.

Encik Abd. Main Haji Salimon: Peranan, Konflik Peranan dan Persepsi Umum Terhadap Tugas Guru Peringkat Rendah Menengah dan Tinggi.

Encik Abd. Main Haji Salimon: Penulisan Laporan Latihan Mengajar 1987.

Encik Abd. Main Haji Salimon: Development and Field Test of Selected Teaching Coincepts on to Pre Service Teachers.

Dr. Naim Haji Ahmad: Filem 'Timeless Teimar' (1956): Satu Analisa dari sudut filem Ethnografi dan Perbandingan Hidup Masyarakatnya.

Dr. Rohani Ahmad Tarmizi: Suatu Pendekatan Untuk Keberkesanan Pembelajaran dan Penyelesaian Masalah Matematik.

Dr. Rohani Ahmad Tarmizi: Pengajaran Mikro-Satu Tinjauan Terhadap Pelajar-Pelajar Fak. Peng. Pendidikan, UPM.

Dr. Rohani Ahmad Tarmizi: Pendidikan Sains dan Matematik Sekolah-Sekolah Menengah di Malaysia.

Dr. Gan Siowck Lee: Tanggapan dan Sikap Bakal Guru Terhadap Penggunaan Komputer dan CAI.

Encik Ahmad Mohd. Isa: Penilaian Prestasi Guru dan Murid Sekolah Menengah Berasrama Penuh.

**Jumlah Pelajar Ikut Program**

Program Bac. Pend.	Tahun 1	Tahun 2	Tahun 3	Tahun 4	Jumlah
Pengajaran Bahasa Malaysia Sebagai Bahasa Pertama	153	154	122	15	445
Pengajaran Bahasa Inggeris Sebagai Bahasa Kedua	102	99	79	1	281
Bimbingan dan Kaunseling	51	51	49	52	203
Pendidikan Jasmani	54	52	53	33	192
Sains Pertanian	35	34	31	16	116
Sains Rumah tangga	26	20	21	3	70
Matrikulasi TESL	41	118			159
<b>Jumlah</b>	<b>462</b>	<b>529</b>	<b>355</b>	<b>120</b>	<b>1466</b>

**Ijazah Lanjutan**

Seramai 45 orang pelajar peringkat Master dan seramai 8 orang pelajar peringkat Doktor Falsafah (Ph.D) sedang mengikuti pengajian.

Encik Ahmad Mohd. Isa: Perasaan Murid-Murid Melayu Terhadap Peperiksaan SPM.

Encik Ahmad Mohd. Isa: Tahap Penguasaan Kemahiran Berkomunikasi Murid-Murid Tahun Empat Sekolah Rendah Di Daerah Kuala Terengganu dan Marang.

Encik Ahmad Mohd. Isa: Amalan Belajar Di Kalangan Murid-Murid Sekolah Menengah Keluarga Berpendapatan Rendah.

Dr. Noran Fauziah Yakub, Puan Zaidatul Akmaliah Lope Pihie: Hubungan Antara Ciri-Ciri Sekolah Dengan Prestasi.

Dr. Noran Fauziah Yakub: The Relationship Between Personality Traits, Morines for Teaching and Teacher Trainees attitude Towards Teaching and Their Performance.

Encik Muhammad Hasan Abd. Rahman: Penggunaan Video dan TV untuk Pengajaran Bagi Guru.

Encik Muhammad Hasan Abd. Rahman: Fotografi Untuk Pengajaran dan Pembelajaran.

Puan Zaidatul Akmaliah Lope Pihie: Pengajaran Mikro: Tinjauan Terhadap Pelajar-Pelajar FPP.

Puan Zaidatul Akmaliah Lope Pihie: Dr. Shari-fah Mohd. Nor: Peraliran di Malaysia.

Dr. Mohd. Ibrahim Nazri: Kajian Mengenai Graduan Bac. Pend. (Sains Pertanian).

Dr. Mohd. Ibrahim Nazri: Profesional Knowledge Competency Achievement of Agricultural Teachers with and Without Preseivice Teacher Preperation in Peninsular Malaysia.

Puan Habsah Ismail: Prestasi Pencapaian Matematik Di Sekolah-Sekolah Rendah Malaysia.

Dr. Mohd. Fauzi Muhammad: Sekolah-Sekolah Pondok Agama Di Daerah Pasir Mas, Tumpat dan Bachok, Kelantan Selepas Merdeka. Sikap Ibu Bapa dan Minat Murid.

Encik Abd. Aziz Zakaria: Tanggapan Masyarakat Terhadap Ko-Kurikulum Sekolah.

Rosli Talif & Malachi Edwin: Error Analysis of Form Four English Compositions.

Hj. Mohamad Hj. Kasim: Koperasi sebagai Alternatif kepada Pelaksanaan Riba: Kejayaan ke Atas KBI.

Nora Mohamed Nor, Mat Nor Hussin, Normah Abdullah, Ramizah Abdul Hamid & Yazariah Yacob: Tahap Penguasaan Kemahiran Berkomunikasi Murid-murid Tahun IV, Sekolah Rendah di Daerah Kuala Terengganu dan Marang.

Normah Abdullah & Ramizah Abdul Hamid: Kajian Kemahiran Belajar dan Membaca di Kalangan Murid Sekolah Menengah Agama Terengganu: Satu Kajian Kes di Daerah Besut, Terengganu Darul Iman.

Rosli Talif & Malachi Edwin: A Comparative Study of the Achievement and the Proficiency Levels in English as a Second Language among Learners in Selected Rural and Urban Schools in Peninsular Malaysia.

Mohamad Othman: Syntactic Ability of BBI 201 and TESL Matriculation Subjects: A Pilot Study.

Mohd Faiz Sathivellu bin Abdullah: Contextual Variability in Interlanguage Phonology.

Mohd. Faiz Sathivelu bin Abdullah: The TOEFL as a valid, reliable and practical measure of general English proficiency.

Aripin Said: Undang-Undang Lama sebagai Hasil Sastera (Hukum Kanun Pahang & Melaka).

Dr. Abd. Halin Hamid: Pemburu Madu Lebah Tualang di Pendesaan Malaysia: Aspek-aspek sosio-ekonomi anjuran MBRDT Malaysia.

Dr. Abd. Halin Hamid: Industri Kecil di Kalangan Wanita Desa di Kelantan, anjuran Pertubuhan Perkumpulan Perempuan Melayu, Semenanjung Malaysia.

Dr. Abd. Halin Hamid: Kajian Struktur dan Proses Perkhidmatan Perbidanan Desa di Hilir Perak, anjuran Universiti Pertanian Malaysia.

Dr. Abd. Halin Hamid: Permintaan dan Keperluan Perkhidmatan Kesihatan Ibu Mengandung dan Kanak-Kanak di Luar Bandar Semenanjung Malaysia, anjuran MPKSN.

Dr. Abd. Halin Hamid: Organisasi Semula Sistem Pengeluaran Pertanian: Satu Penilaian Terhadap Projek Estet Mini di Semenanjung Malaysia, anjuran MPKSN.

Dr. Zahid Emby: Organisasi Semula Sistem Pengeluaran Pertanian: Satu Penilaian Terhadap Projek Estate Mini di Semenanjung Malaysia.

Dr. Zahid Emby: Kajian Kecemerlangan Akademik di Universiti Pertanian Malaysia.

Dr. Zahid Emby: Pengumpulan Madu Lebah Tualang, di Semenanjung Malaysia.

## PENERBITAN

Tuan Haji Daud Norakit (1988). "Risalah Antidadah, , Jabatan Pendidikan, Siri I", Berita Hal Ehwal Pelajar, UPM, Julai 1988.

Tuan Haji Daud Norakit (1988), "Penilaian Akhlak dan Ibadat Di Bulan Syawal: Suatu Perbandingan Dengan Bulan Ramadan, kertas kerja Ceramah anjuran Kelab Bina Insan, Jabatan Biologi di Jabatan Biologi, UPM, 11 Jun 1988.

Tuan Haji Daud Norakit (1988). "Keperluan Awal Peningkatan Kerjasama Penyelidikan dan Pendidikan Sains Matematik," kertas kerja di Simposium Kebangsaan Sains Matematik Ke 3, di Jabatan Matematik dan Persatuan Matematik Malaysia, 22-24 Ogos 1988.

Tuan Haji Daud Norakit (1988), "Setia Menurut Perspektif Islam", kertas kerja di Kursus Pengurusan Am Jurutrengkas I, Pejabat Pendaftaran, 17 Disember 1988.

Encik Nordin Kardi (1988). "Kecemerlangan Perkhidmatan", kertas kerja Ceramah anjuran Perpustakaan, 13 Jun 1988.

Encik Nordin Kardi (1988). "Komunikasi Dalam Kaunseling", kertas kerja Ceramah anjuran Syarikat Telekom Malaysia, 14 Jun 1988.

Encik Nordin Kardi (1988). "Pembentukan Ke-cemerlangan Diri", kertas kerja di Kursus Gaya Kepimpinan Diri, di UPM, 21 Jun 1988.

Encik Nordin Kardi (1988). "Kepimpinan Diri", kertas kerja di Kursus Pembentukan Sikap Kakitangan Kementerian Pertanian, di Institut Latihan Bank Pertanian Malaysia, Bangi, 21 Jun 1988.

Encik Nordin Kardi (1988). "Ceramah Organisasi Pengurusan Personal" kertas kerja di Bengkel Pengurusan Personalia Pelajar Sekolah-Sekolah Menengah N. Sembilan, UPM, 22 Jun 1988.

Encik Nordin Kardi (1988), "Ceramah Aliran-aliran Kepimpinan dan Gaya Kepimpinan, kertas kerja di Kursus Kepimpinan Kolej 5, UPM, 22 Jun 1988.

Encik Nordin Kardi (1988). "Ceramah Adakah Anda Sebagai Fasilitator" kertas kerja di Kursus Asas Fasilitator, Institut Sedar Kem. Pembangunan Manusia dan Luar Bandar, 19 Julai 1988.

Encik Nordin Kardi (1988). "Ceramah Organisasi dan Saya" kertas kerja di Kursus Pembentukan Sikap K/Tangan Kem. Pertanian, Institut Latihan Asean ) Planti, 2 Ogos 1988.

Encik Nordin Kardi (1988). "Perlunya Kaunseling Dalam Masyarakat Hari Ini", kertas kerja di Seminar Kebangsaan Ke Arah Pemupukan Islam di Dalam Kaunseling", Hyatt Saujana Hotel, 3 Ogos 1988.

Encik Mohd. Majid Konting (1988). "Memasyarakatkan Sukan", Dewan Masyarakat, Julai 1988.

Encik Mohd. Majid Konting (1988). "Cabaran Penyelidikan dalam Pendidikan Pengurusan", kertas kerja di Bengkel Latihan Mengajar Antara Universiti Ke 6, UPM, 16-17 Disember 1988.

Encik Abd. Main Haji Salimon (1988). "Penilaian Masyarakat Terhadap Guru", Berita Harian Ms. 10, Cols. 1 – 8, 27 Disember 1988.

Encik Abd. Main Haji Salimon (1988). "Database Ke Arah Perancangan Program, kertas kerja di Ceramah Pusat Belia Antarabangsa, KBS, Kuala Lumpur, 24 November 1988.

Encik Abd. Main Haji Salimon (1989). "Fisiologi Kardiovaskular dan CPR" kertas kerja ceramah di Bengkel CPR, PPKM, Kuala Lumpur, 5 Mac 1989.

Dr. Noran Fauziah Yaakub (1988), "Attitude Towards Teaching – The Use of The MTAI Pre-Service Teachers", Jurnal Pendidikan Guru, Disember 1988.

Encik Muhammad Hasan Abd. Rahman (1988). "Model dari Bahan Polistairin untuk Pengajaran", Jurnal Teknologi Pendidikan, Disember 1988.

Encik Muhammad Hasan Abd. Rahman (1988). "Fotografi untuk Pengajaran, kertas kerja di Kursus Asas Fotografi, UPM, 23 Julai 1988.

Encik Muhammad Hasan Abd. Rahman (1989). "Teknologi Pendidikan Untuk Pengajaran", kertas kerja Ceramah Pusat Sumber, PPD, Kuala Lumpur, 18 Februari 1989.

Puan Zaidatol Akmaliah Lope Pihie (1988). "Terjemahan Pengenalan Pentadbiran Pendidikan", Universiti Pertanian Malaysia, November 1988.

Puan Zaidatol Akmaliah Lope Pihie (1989). "Rencana: Menyedia Anak Bangsa untuk Dunia Niaga", Utusan Malaysia, 23 Februari 1989.

Puan Zaidatol Akmaliah Lope Pihie, Dr. Shari-fah Mohd. Nor (1988). "Kajian Kepuasan Kerja Guru-Guru Perdagangan dan Keusahawanan di Sekolah Menengah Rendah di Malaysia", Berita Penyelidikan, Jilid 2, Disember 1988.

Dr. Mohd. Ibrahim Nazri (1989). "Professional Knowledge Competency Achievement of Agricultural Teachers With and Without Preservice Teacher Preparation in Peninsular Malaysia", Proceeding of The Central States Agricultural Education Research Conference, 18 Februari 1989.

Dr. Abd. Patah Abd. Malek (1989). "Menternak Ayam", UNESCO/UPM, Disember, 1989.

Noran Fauziah Yaakub, "Factors Related to Performance of Teacher Trainees," *Jurnal Psikologi Malaysia*, no. 4, 1988 (in press).

Dr. Abd. Patah Abd. Malek (1988). "Pengukuran dalam Bilik Darjah", kertas kerja di Workshop Pendidikan, Sek. Swasta Al Amin, 7–8 Disember 1988.

- Dr. Abd. Patah Abd. Malek (1988). "Pendidik Sebagai Ilmuan, kertas kerja Workshop Siri Penerapan Nilai-Nilai Islam", ILSAS, 19 Disember 1988.
- Dr. Abd. Patah Abd. Malek (1988). "Pensyarah Sebagai Pendidik", kertas kerja di Kolokium Ilmu, UTM, 12 November 1988.
- Puan Rosini Abu (1988). "Teknik Pendekatan Pengajaran SRF (Membuat Pakaian), Kertas Kerja di Kursus Latihan Penyelia SRT, Bahagian Teknik dan Vokasional, Kementerian Pendidikan, Kelantan, 8 Jun 1988.
- Puan Rosini Abu (1988). "Peluang Melanjutkan Pelajaran dan Peluang Pekerjaan Pelajar, SRT, selepas tamat persekolahan, kertas kerja Ceramah di Jabatan Daerah Pendidikan Kelang, 12 Ogos 1988.
- Encik Mohd. Ismail Haji Ridzwan (1988). "Isu-Isu Pembelajaran Pelajar-Pelajar Universiti dan Topik-Topik Penting dalam Penilaian di Universiti", kertas kerja di Kursus Pengajaran-Pembelajaran, UPM, 21-23 Jun 1988.
- Encik Mohd. Ismail Haji Ridzwan (1988). "Teknik Belajar Matematik", kertas kerja di Kempen Kesedaran Matematik Sekolah Menengah Tengku Mahkota, Muar, 7 Julai 1988.
- Dr. Azizah Abd. Rahman (1988). "Universiti Sebagai Tempat Pembinaan Intelek", kertas kerja di Kursus Kepimpinan I, HEP, UPM, 22 Ogos 1988.
- Dr. Azizah Abd. Rahman (1988). "Falsafah Pendidikan dalam KBSR - Implikasinya bagi Amalan Bilik Darjah" kertas kerja di Kursus Lanjutan Inst. Bahasa, Kuala Lumpur, Institut Bahasa, K. Lumpur, 24 Ogos 1988.
- Dr. Mizan Adiliah Ahmad Ibrahim (1988). "Keahlian di dalam Kelompok", kertas kerja di Kursus Asas Fasilitator, Kem. Pembangunan Negara dan Luar Bandar, K'Lumpur, 20 Julai 1988.
- Dr. Mizan Adiliah Ahmad Ibrahim (1988). "Pembentukan Keluarga Bahagian Melalui Kaunseling", kertas kerja di Seminar Kefahaman Islam - Negeri Melaka, Jab. Agama Islam Melaka, 18 Disember 1988.
- Cik Shahizah Daiman, Tuan Sheikh Kamaruddin Sheikh Ahmad (1988). "Kecergasan Fizikal", Kertas Kerja di Seminar Sains Sukan, MPIK, Kuala Lumpur, 19 Julai 1988.
- Cik Shahizah Daiman, (1988). "Aspek Latihan Jasmani dan Kesihatan", kertas kerja Ceramah Kecergasan, Jalan Duta, Kuala Lumpur, 10 Oktober 1988.
- Cik Shahizah Daiman (1989). "Pemakanan di Kalangan Wanita", kertas kerja Ceramah Kecergasan, Jalan Duta Kuala Lumpur, 13 Januari 1987.
- Encik Mokhtar Haji Nawawi (1998). "The Need to Promote Environmental Responsibility through Science Learning", kertas kerja di Symposium on Advances in the Quality of The Malaysian Env't., Hotel Grand Continental, Kuala Lumpur, 23 Januari 1989.
- Encik Abd. Majid Mohd. Isa (1988), "Pelajar - Anak Merdeka Memerdekan Diri", kertas kerja di Kursus Kepimpinan, 1988, HEP, UPM, 22-24 Ogos 1988.
- Encik Abd. Majid Mohd. Isa (1988). "Belia dan Kecemerlangan", kertas kerja di Kursus Belia, Bandar Tun Razak, Kuala Lumpur, 30 Oktober 1989.
- Encik Abd. Majid Mohd. Isa (1988). "Psikologi Kanak-Kanak dan Remaja" kertas kerja di Kursus Guru Tahfiz, ABIM, Kajang, 24 Disember 1988.
- Puan Lily Mastura Haji Harun (1988). "Model Komunikasi Antara Individu", kertas kerja di Kursus Lanjutan Penilaian Daerah, INSPEN, Bangi, 1-6 Ogos 1988.
- Encik Abdul Aziz Zakaria (1988). "Psikologi Sukan", kertas kerja di Kursus Kem Bakat, Majlis Sukan Negara, PULAPOL, 3 Ogos 1988.
- Puan Halijah Mohd. (1988). "Pengenalan Kepada Latihan Asertif", kertas kerja di Konvensyen PERKAMA Ke 3, Hyatt Saujana Subang, 11 Disember 1988.
- Dr. Naim Haji Ahmad (1988). "Perancangan: Asas & Kaedah Dalam Merekabentuk Bahan-Bahan Pengajaran", kertas kerja di Bengkel Rekabentuk dan Penghasilan Bahan Pengajaran, Kementerian Pendidikan, Melaka, 4 dan 14 Disember 1988.
- Encik Ahmad Mohd. Isa (1989). "Kaedah

Pengajaran dan Pembelajaran: Satu Pandangan Ringkas”, kertas kerja di Simposium kerja, 26 Februari 1989.

Encik Zakaria Abd. Rahman (1988). “Pendidikan di Switzerland”, kertas kerja ceramah Persatuan Pelajar Sains Pertanian, UPM, 12 Oktober 1989.

Dr. Mohd. Fauzi Muhammad (1988). “Al-Quran Perlembagaan Hidup”, kertas kerja di Kursus Kefahaman dan Penghayatan Islam, Port Dickson, 24 Disember 1989.

Datin Halimah Othman, Hapsah Nawawi, Wan Sarah Wan Abdullah, Abdul Halin Hamid (1988). Income – generating activities for rural women: A study of cottage industry in Kelantan. Petaling Jaya: the National Association of Women’s Institute, Malaysia.

Mat Nor Hussin, (1988). **Alat Bantu Mengajar dalam Pengajaran Bahasa**, Longman Malaysia.

Ismail Jusoh, (1988). “Menyorot Kembali Perkembangan Bahasa Malaysia”, **Utusan Malaysia**, 29 Jun 1988.

Taha Hj. Abd. Kadir, (1988). ‘Seni Muzik Tradisional Negeri Sembilan’, **Dewan Sastera**, November 1988.

Taha Hj. Abd. Kadir, (1988). **Buat Pertama Kali (puisi)**, Penerbit: Antologi Publisher, Shah Alam.

Kamarudin Hj. Husin, (1988). **Pedagogi Bahasa**. Penerbit: Longman Malaysia.

Kamarudin Hj. Husin, (1988). **Kaedah Pengajaran Kesusasteraan**, Penerbit: Fajar Bakti, Petaling Jaya.

Aripin Said, (1988). **Racik Raja Putera (Sastera Rakyat)**, Penerbit: Marwilis Publisher, Petaling Jaya.

Aripin Said, (1989). **Ceritera Awang Miskin (Sastera Rakyat)**, Penerbit: Fajar Bakti, Petaling Jaya.

Aripin Said, (1998). ‘Hujan Turun di Kota Margherita’ (cerpen).

Aripin Said, (1989). ‘Hujan Turun di Kota Margherita’ (cerpen). **Dewan Sastera (DBP)**, Januari 1989, m.s. 30-31.

Aripin Said, (1989). ‘Emas’ (cerpen). **Dewan Masyarakat (DBP)**, Januari 1989, m.s. 62-63.

Aripin Said, (1989). ‘Dalam Kenangan’. **Dewan Sastera (DBP)**, Mei 1989, m.s. 51-52.

Mhd. Amin Arshad (1989). ‘Hikayat Umar Umaiyah: Perlu Penilaian Semula’. **Mastika**, Mei 1989, hal. 46-49.

Malachi Edwin, (1989). ‘Things Fall Apart’, **MELTA Newsletter**, Mac 1989.

Mohd Zainuddin Hashim (1989). **Taksonomi Objektif Pendidikan (Terjemahan)**. Dewan Bahasa dan Pustaka, K.L.

Abdul Rahim Marasidi (1988). **Pengajian Am Buku I**, (1988). Fajar Bakti, Petaling Jaya.

Abdul Rahim Marasidi (1989). **Pengajian Am Buku II**, (1989). Fajar Bakti, Petaling Jaya.

Abdul Rahim Marasidi (1989). **Bimbingan SPM Hari Kemerdekaan**. K. Publishing, Kuala Lumpur.

Abdul Rahim Marasidi (1989). **Bimbingan SPM Umar Umaiyah**. K. Publishing, Kuala Lumpur.

#### **SEMINAR/BENGGKEL/KURSUS YANG DIANJURKAN**

Kursus Asas Fotografi diadakan pada 23 Julai 1988.

Kursus Lanjutan Fotografi diadakan pada 21 Januari 1989.

Kursus Asas Pendidikan untuk Guru-guru Sekolah Menengah Agama Terengganu di adakan di PPPL, UPM pada 27 Julai hingga 2 Ogos 1988.

Kursus Pendidikan untuk Guru-guru Sekolah Menengah Agama Terengganu di adakan di PPPL pada 13 – 19 November 1988.

## FAKULTI KEJURUTERAAN

### DEKAN

Professor Madya Dr. Mohd. Zohadie Bardaie Dip. Agric (Malaya), B.S., M.Sc. (U.C. Davis), Ph.D. (Cornell).

### PENDAHULUAN

Fakulti dipilih sekali lagi sebagai Pusat Rujukan Asian Geotechnical Engineering (AGE) dan bekerjasama dengan Perpustakaan dalam pembukaan Management and Utilization of Wastes Information Centre (MUWIC) dengan Bantuan

### IDRC.

Fakulti telah mempertingkatkan pengambilan pelajar dalam bidang Pengajian Siswazah. Di samping itu memperkukuhkan program akademik serta mempertingkatkan aktiviti penyelidikan, pengembangan dan pengajaran.

### KAKITANGAN

Jumlah kakitangan mengikut kategori:

	Kategori			
	A	B	C	D
Pejabat Dekan	2	1	10	14
Jab. Kejuruteraan Perladangan	7	—	7	3
Jab. Kejuruteraan Pemprosesan dan Kesekitaran	8	—	5	2
Jab. Kejuruteraan Kuasa & Jentera	8	—	5	5
Jab. Kejuruteraan Awam dan Alam Sekitar	21	—	6	5
Jab. Kejuruteraan Mekanikal & Sistem	10	—	7	4
Jab. Kejuruteraan Elektronik dan Komputer	12	—	5	4
Jumlah	68	1	45	37
<b>JUMLAH BESAR</b>	<b>151</b>			

### Perlantikan Baru

En. Muhammad Salih Hj. Ja'afar telah dilantik sebagai ahli Senat dari Fakulti Kejuruteraan untuk tempoh 2 tahun mulai 19hb. Julai, 1988.

Dr. Mohd. Zohadie Bardaie, Ketua Jabatan Kejuruteraan Kuasa dan Jentera telah dilantik sebagai Dekan baru Fakulti Kejuruteraan mulai 16hb. Ogos, 1988. Sehubungan dengan itu, En.

Muhammad Salih Hj. Ja'afar telah dilantik sebagai ketua jabatan yang baru mulai 16hb. Ogos, 1988 untuk menggantikan beliau.

Seorang tutor iaitu En. Nordin b. Endut telah dilantik sebagai Pensyarah pada 4hb. Oktober, 1988.

En. Abdul Rahman Ramli dan En. Rahman Wagiran dilantik sebagai Pensyarah di Jabatan

Kejuruteraan Elektronik dan Komputer pada Mei 1989.

Cik Ratna Kalus Zakiah bt. Sahbudin dilantik sebagai Tutor mulai bulan Mei 1989 di Jabatan Kejuruteraan Elektronik dan Komputer.

Dr. Azmi Yahya dilantik sebagai Pensyarah pada 16hb. Ogos, 1988.

Prof. Madya Dr. Mohd. Nordin Ibrahim dilantik sebagai Ketua Jabatan Kejuruteraan Pemprosesan dan Kesekitaran pada 16hb. September, 1988.

En. Megat Johari Megat Mohd. Noor dilantik sebagai Ketua Jabatan Kejuruteraan Awam dan Alam Sekitar pada 15hb. September, 1988.

En. Megat Mohd. Hamdan Megat Ahmad dilantik sebagai Pensyarah di Jabatan Kejuruteraan Mekanikal dan Sistem pada 7hb. Julai, 1988.

Puan Napsiah Ismail dilantik sebagai Pensyarah di Jabatan Kejuruteraan Mekanikal dan Sistem pada 4hb. Oktober, 1988.

Ir. Mohd. Yusof Ismail dilantik sebagai Pensyarah di Jabatan Kejuruteraan Mekanikal dan Sistem pada 1hb. Januari, 1989.

#### **Perletakan Jawatan**

En. Wan Ishak b. Wan Ismail, meletakkan jawatan sebagai Ketua, Jabatan Kejuruteraan Kuasa dan jentera pada bulan Ogos 1988.

Professor Ir. Abang Abdullah Abang Ali, meletakkan jawatan sebagai Dekan pada bulan Ogos 1988.

Prof. Madya Ir. Syed Mansur Syed Junid, meletakkan jawatan sebagai Ketua, Jabatan Kejuruteraan Awam dan Alam Sekitar pada bulan September 1988.

En. Wan Mohamad b. Hj. Abdullah, meletakkan jawatan sebagai Ketua, Jabatan Kejuruteraan Pemprosesan pada bulan September 1988.

En. Mohd. Isa b. Mansor, meletakkan jawatan sebagai Ketua, Jabatan Kejuruteraan Elektronik dan Komputer pada 30 April 1988.

En. Abdul Rahim b. Md. Amin, meletakkan jawatan sebagai Ketua, Jabatan Kejuruteraan Mekanikal dan Sistem pada tahun 1988.

#### **Cuti Belajar**

En. Wan Ishak b. Wan Ismail, Pensyarah, mengikuti kursus Ph.D di University of Michigan pada Ogos 1988.

Prof. Madya Ir. Syed Mansur b. Syed Junie, Pensyarah, mengikuti kursus Ph.D di University of Salford pada bulan Oktober 1988.

En. Wan Mohamad b. Hj. Abdullah, Pensyarah, mengikuti kursus Ph.D di University of Manchester pada Oktober 1988.

En. Abdul Rahim Md. Amin, Pensyarah, mengikuti kursus Ph.D di University of Birmingham pada bulan Ogos 1988.

Ir. Abdul Rahman Bidin, Pensyarah, mengikuti kursus Ph.D di University of Sheffield, dalam bidang Kejuruteraan Kawalan pada bulan Ogos, 1988.

#### **Cuti Sabatikal/Tanpa Gaji**

Professor Abang Abdullah b. Abang Ali membuat cuti sabatikal di University of Manchester pada September 1988 selama 9 bulan.

Prof. Madya Dr. Mohd. Nur Ahmad membuat cuti sabatikal di SIRIM, Malaysia pada September 1988 selama 9 bulan.

Puan Rosnah bt. Mohd. Yusof mengambil cuti tanpa gaji sehingga 1989.

#### **Kursus Kemahiran**

Prof. Madya Dr. Mohd. Zohadie Bardaie telah mengikuti program di bawah rancangan 'United States Cochran Middle Income Program' di University of Florida, USA dalam bidang 'Computer Expert Systems' pada 16 Oktober hingga 18 November 1988.

#### **Siswazah Lanjutan**

Beberapa orang pegawai dan pelajar mengikuti program Ijazah Lanjutan di Fakulti Kejuruteraan.

En. Lee Teang Shui – mengikuti program Ph.D di fakulti, akan tamat pada tahun 1989.

En. Mohamed Daud – sedang mengikut program Ph.D di Fakulti Kejuruteraan.

Pelajar-pelajar berikut sedang mengikuti program M.S. di Fakulti Kejuruteraan;

- a. En. Redzuan Kamaruddin
- b. En. Aziz Mamat
- c. En. Md. Sazali Mohd. Nor
- d. En. Jamil Khamis
- e. En. Ramlee Jantan
- f. En. Razak Jelani
- g. Cik Noraishah Mohd. Idris
- h. Puan Aeshah Ismail
- i. Cik Sarifah Yaacob
- j. En. Rosli Mohd. Zin
- k. En. N. Kumarason

#### Pemeriksa Luar

Pemeriksa Luar Jabatan, Prof. Dr. Thomas H. Burkhardt dari Michigan State University, USA telah berada di Jabatan Kejuruteraan Kuasa dan Jentera dari 28hb. Ogos hingga 9hb. September, 1988.

Dr. Mark Nixon, Pensyarah Pelawat dari University of Southampton berada di Jabatan Kejuruteraan Elektronik dan Komputer dari 22hb. Oktober, 1988 hingga 13hb. November, 1988.

Prof. Roger Green Pensyarah Pelawat dari University of Bradford berada di Jabatan Kejuruteraan Elektronik dan Komputer dari 13hb. hingga 19hb. Februari, 1989.

Prof. Peter Montague Pemeriksa Luar dari University of Manchester berada di Jabatan Kejuruteraan Awam dari 15hb. Mei, 1989 hingga 22hb. Mei, 1989.

#### PENYELIDIKAN

Dr. Mohd. Zohadie Baraie:

– Penuaian dan Pengumpulan Buah Kelapa Sawit.

En. Muhammad Salih Hj. Ja'afar: Rekabentuk dan Pembinaan Jentera Pemecah dan Pemisah Biji Koko.

– Pengupasan Kulit Lada untuk Pemprosesan Lada Putih.

– Kajian Ciri Perkhidmatan Sistem Tertutup Tol Lebuhraya Seremban-Kuala Lumpur.

– Kajian Sistem Penerimaan dan Pengerangan Padi di Kompleks LPN, Sekinchan, Selangor.

Puan Nor Mariah Adam

– Pembangunan Jentera Pertanian untuk Kelapa Sawit dan Koko.

– Ciri-ciri Getaran Hasil Dusun.

En. Rimfiel Janius

– Merekabentuk dan Membina Jentera Pengupasan Kulit Kopi.

En. Kamarudzaman Aribi

– Perolehan Data Asas bagi Sifat Fizikal, Mekanikal dan Reologi Buah Koko.

– Merekabentuk dan Menilai Keberkesanan Mesin Penyembur Racun Serangga ke atas Pokok Koko.

Prof. Madya Dr. Mohd. Nordin Ibrahim, Prof. Madya Hussain Mohd. Salleh, En. Wan Mohamad Hj. Abdullah dan En. Buhri Ariffin.

– Satu Cara Innovative bagi Pengeluran Tepung Koko di Peringkat Industri Kecil.

Prof. Madya Dr. Mohd. Nur Ahmad:

– Peranan Kimia-Mekanikal dalam Penyarian Butir-butir Kanji dari Sagu.

Bambang Sunaryo Suparjo: VLSI Library Design.

Ir. Mohd. Isa Mansor: Local Area Network.

Norman Marium: Automatic Switching at Building Services.

Dr. Borhanuddin Mohd. ALi: Voice/data Integration in Packet Switching.

Rahman Wagiran: VLSI library design.

Ahmad Jusoh, Megat Johari Megat Mohd. Noor,  
Abdul Halim Ghazali:

- Penggunaan Semula Sisa-sisa Pertanian sebagai Media Penapis bagi Rawatan Air dan Air Sisa.

Ahmad Jusoh, Muhammad Salih Hj. Ja'afar,  
Mohd. Salleh Punan:

- Merekabentuk, Membina dan Mengujikaji Mesin Pengupas Kulit Lada untuk Pemprosesan Lada Putih.

Abdul Halim Ghazali, Ahmad Jusoh, Megat Johari Megat Mohd. Noor:

- Kajian Infrastruktur dalam Penurasan Perlahan untuk Projek Perumahan Kos Rendah.

Megat Johari Megat Mohd. Nor, Ahmad Jusoh,  
Abdul Halim Ghazali, Anhar Suki:

- Rawatan Air Sisa secara Aerobik dan Anaerobik serta Penggunaan Semula.

Megat Johari Megat Mohd. Noor, Azlan Abdul Aziz, Radin Umar Radin Suhadi:

- Jalan Kos Rendah.

Shattri Mansor, Abdul Halim Ghazali:

- Development of a Regional Flood Zone Mapping Technique Using Satellite Imagery.

Shattri Mansor:

- Computer Aided Design and Drafting (CADD) Based Mapping and Modelling Systems.

Shattri Mansor:

- Digital Terrain Modelling by Finite Elements Method.

Shukri Maail:

- Plasticity Characteristic of Tropical Residual Soil.

Shukri Maail:

- Determination of Moisture Content of Soil Using Microwave techniques.

Abang Abdullah Abang Ali, Shukri Maail,  
Zakaria Che Muda, S.A. Salam:

- Appropriate Indigenous Materials and Technology for Low Income Settlement.

Mohd. Salih Hj. Ja'afar:

- Performance of Various Types of Load Bearing Walls for Housing Construction.

Tan Ka Kheng, Mohamed Daud:

- Transport of Agro-Chemicals in Irrigation Water.

Yong Eu Fan, Dr. Salim Said:

- Effects of Climate Changes on Water Resource and Agriculture Policies.

Radin Umar Radin Suhadi:

- Analisis Kemalangan Melalui Kajian Konflik.

Radin Umar Radin Suhadi, Aminuddin Adnan,  
Rehan Karin, Mohd. Asri:

- Kajian Kemalangan di Titik Hitam Km 35 hingga 41 Lebuhraya Ipoh – Kuala Lumpur.

S.A. Salam, Lee Teang Shui:

- Prestressed Concrete.

Mohd. Saleh Jaafar, Syed Mansur Syed Junid:

- Building System.

Dr. Borhanuddin, Zakaria Che Muda, Yaakob MOhd. Salleh, Megat Mohd. Hamdan Megat Mohd. Salleh, Megat Mohd. Hamdan Megat Ahmad:

- Pembinaan, ujian dan Penggunaan Perisian 'Finite Element Analysis untuk Analisis Tegasan dan Getaran.

Mohd. Rashid Omar:

- Appropriate Automation for Industry

Ir. Fuad Abas:

- Kuasa Mekanikal dari Tenaga Suria

Dr. Abdul Aziz Zakaria:

- Sistem Pengairan Paip Tertebuk
- Keperluan Air untuk Tanaman Buah-buahan
- Kesan Kelembapan Tanah Ke atas Tumbesaran Anak Durian.

Prof. Madya Kwok Chee Yan:

- Water Management for Padi Soils
- Standardisation of Cone Penetrometer Readings on padi Soils.

Dr. Salim Said:

- Numerical Methods of Determining Emitter Discharge of a Trickle Irrigation System.
- Trickle Irrigation on Tin-tailings.
- Modelling of Climatological and Irrigation Influences on Crop Production in Malaysia.

Mohd. Rashidi Bakar:

- Standardisation of Cone Penetrometer Readings on Padi Soil.
- Kesan Air Ke atas Kekuatan Tanah Sawah.

Mohamed Daud:

- Expert System for Irrigation water Distribution at the Kemubu Irrigation Scheme.

## PENERBITAN

Rimfiel b. Janius (1988). Asas Enjin Pembakaran Dalaman. Terbitan Jabatan Kejuruteraan Kuasa dan Jentera, Fakulti Kejuruteraan, UPM. 223 muka surat.

Prof. Madya Dr. Mohd. Zohadie Bardaie dan N. Kumarason (1988). 'Development and Usage of Computer Expert Systems in Agriculture: A case Study in Tractor Service & Maintenance', di Seminar Penyelidikan Kejuruteraan

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Zohadie, M., Ishak, W. dan Desa, A. (1988). 'Kejenteraan Pertanian Di Malaysia, Dewan Bahasa dan Pustaka, Kuala Lumpur.

Muhammad Salih Hj. Ja'afar dan Abd. Razak Jelani (1988). 'Kajian Awal Terhadap Penggunaan Alat Memungut Buah Kelapa Sawit Terlerai,' Seminar Penyelidikan Kejuruteraan Pertanian, UPM, Serdang, 16 - 17 November 1988.

Rimfiel b. Janius (1988). 'Alcohol as Tractor Fuel - Is There Any Future?', Agricultural Dmechanization in Asia, Africa and Latin America, 19:4, p. 75 - 77.

Nor Mariah Adam (1988). 'Vibration Characteristics of Malaysian Oranges,' Seminar Penyelidikan Kejuruteraan Pertanian, UPM, Serdang, 16 - 17 November 1988.

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Muhammad Salih Hj. Ja'afar (1989). 'Laporan Status Penyelidikan Kejuruteraan Pertanian di UPM,' di Bengkel Penjenteraan Pertanian, RRI, Sg. Buluh, 20 - 21hb. Februari, 1989.

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Hussain b. Mohd. Salleh (1988). "Drying Rice Using the Concurrent Flow Dryer. Paper presented at Agricultural Engineering Research Seminar, 16 – 17hb November, 1988. PPPL, UPM, Serdang.

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Zakaria Che Muda "FINASAS – A Transform

students and staff, University of Newcastle Upon Tyne, UK.

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Salim Said, "Rehabilitation of Disturbed (Mined) Tropical Land with Trickle Irrigation for Agricultural Production" Accepted to be published in the Proc. of the 11th. International Congress on Agricultural Engineering, Dublin, Ireland, 1989.

#### SEMINAR/BENGGEL/KURSUS

##### Luar Negeri:

Bengel Kemajuan Projek ASEA-EEC diadakan di Munoz, Nueva Ecija, Filipine pada Indonesia pada 11hb. – 12hb. Oktober, 1988. Dihadiri oleh Dr. Mohd. Nordin b. Ibrahim.

Bengel Kemajuan Projek ASEAN/EEC diadakan di Sukamandi, Indonesia pada 21 – 22hb. Mac, 1989. Dihadiri oleh Encik Hussain Mohd. Salleh.

##### Dalam Negeri:

Seminar Computerisation for Development – The Research Challenge diadakan di Putra World Trade Centre pada 16 – 18hb. Ogos, 1988. Dihadiri oleh Encik Buhri Ariffin.

11th. ASEAN Technical Seminar on Grain Postharvest Technology di Pan Pasifik Hotel, Kuala Lumpur diadakan pada 23hb. hingga 26hb. Ogos, 1988. Dihadiri oleh Dr. Mohd. Nordin Ibrahim, Encik Wan Muhammad Hj. Wan Abdullah dan En. Hussain Mohd. Salleh.

Seminar Persidangan Kebangsaan Kelapa Sawit/Minyak Sawit 'Perkembangan Masakini' diadakan di Shangri-La Hotel pada 11 – 15hb. Oktober, 1988. Dihadiri oleh Dr. Mohd. Nur Ahmad.

En. Buhri Ariffin, En. Muhammad Salih Hj. Ja'afar dan Puan Nor Mariah Adam.

Seminar First Particulate Technology Conference diadakan di Putra World Trade Centre, Kuala Lumpur pada 7 – 9hb. Sept., 1988. Dihadiri oleh Dr. Mohd. Nur Ahmad.

Seminar Role of Agricultural Colleges and Universities in Poverty Redressal, diadakan di Pusat Pengembangan dan Pendidikan Lanjutan pada 17 – 22hb. Oktober, 1988. Dihadiri oleh En. Mohd. Rashidi Bakar dan En. Buhari Ariffin.

Milling Terminal Workshop diadakan di Langkawi, Malaysia pada 25 – 27hb. Februari, 1989. Dihadiri oleh En. Hussain b. Mohd. Salleh dan Dr. Mohd. Nordin Ibrahim.

Teach – in Course on Prestressed Concrete Structure, diadakan di PPPL, UPM oleh Jabatan Kej. Awam dan Alam Sekitar pada 26 – 28hb. Julai, 1988.

Civil Engineering Research at University of Manchester, diadakan di Fakulti Kejuruteraan oleh Dr. S.A. Salam pada 6hb. Ogos, 1988.

Civil Engineering Education, Research & Professional Development, diadakan di PPPL, UPM oleh Jabatan Kej. Awam dan Alam Sekitar pada 8 – 10hb. Ogos, 1988.

Research and Teaching Program in Agricultural Engineering at Michigan State University, diadakan di Fakulti Kejuruteraan oleh Dr. S.A. Salam pada 7hb. September, 1988.

Water Resource Modelling, diadakan di Fakulti Kejuruteraan oleh Dr. S.A. Salam pada 19hb. Oktober, 1988.

Methyl Soyoil and Methyl Tallow Esters as Fuels for Diesel Engines, diadakan di Fakulti Kejuruteraan oleh Dr. S.A. Salam pada 23hb. November, 1988.

Characteristics of Partially Prestressed Concrete, diadakan di Fakulti Kejuruteraan oleh Dr. S.A. Salam pada 25hb. Januari, 1989.

Farm Implements and Post-harvest Technology Situation in Bangladesh, diadakan di Fakulti Kejuruteraan oleh Dr. S.A. Salam pada 28hb. Februari, 1989.

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Barkawi b. Shahari, Mohd. Isa Mansor, "Introduction to Finite Element and Its Relationship to Computer-Aided-Engineering" Presented at Bengkel and Pameran Kebangsaan Mengenai Engineering Information System and Computer-Aided-Engineering 16 – 16 March 1988, Universiti Pertanian Malaysia, 1988.

Fuad Abas, Mohd. Rashid Osman, "Penyelenggaraan dan Pengurusan Alatan Saintifik -Satu Pendekatan." Seminar, 1988.

Barkawi Sahari, "Finite Element and the Concept of Verified Predictive method" Jurnal Institusi Jurutera Malaysia, Bil. 41, pp 7 – 17, Jun 1988.

Barkawi b. Sahari, Zakaria Che Muda, "The Future of Finite Element Technology – The Challenge Ahead" Proceedings, International Seminar and Exhibition, Computerisation for Development – The Research Challenge, 16 – 18 August 1988, PWTC Kuala Lumpur.

Mohamed Daud (88), "Group farming as a basis or Efficient Resource Utilization for Small and Marginal Farmers in Malaysia" Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP). DHAKA: Final Research Report, 13 May 88. pp. 104.

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T.S. Lee 1988, "Infiltration Characteristics of Two Sandy Soils. Agricultural Engineering Research Seminar, UPM. Serdang.

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Mohamed Daud ('88) "Adaptation of rain gun sprinkler system for irrigation of FELDA sugarcane plantation in Malaysia" Conference on Agricultural Engineering, 1988. Sydney, 25 – 29 Sept. 88, pp. 6.

Mohamed Daud (1988), Mechanization of a padi Estate in Trans Perak Malaysia," Conference on Agricultural Engineering, 1988, Sydney, 25 – 29 Sept. '88, pp.6.

Kwok Chee Yan et. al (1988), "Measurement of the Albedo of a Padi Crop.," Paper Presented at Seminar Penyelidikan Kejuruteraan Pertanian 1988, UPM Serdang 15 – 16 Nov. 1988.

Salim Said (1988), "General Issues of Agriculture and Mechanization in Malaysia," Invited paper presented before Agricultural Engineering

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Zakaria Che Muda "Physical and Computational Modeling for F.E. Analysis." Seminar on Engineering Information System and Computer Aided Engineering, March 88 UPM.

Zakaria Che Muda "Criteria and Computer Aided Design of Slub" 2nd International Conference on Computer Application in Concrete, Mac 88, Singapore.

Zakaria Che Muda "The Future of Finite Element Technology – The Challenge Ahead." Int. Seminar and Exhibition August 1988, Kuala Lumpur.

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Tan Ka Kheng & Yong Eu Fan (1988). Analysis of Floating Refuse Along the Gombak River, *Pertanika II (i)*, 151 – 155.

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Megat Johari dan Azlan A. Aziz (1988). "Soil Cement for Low Cost Roads." *Proceedings of the 14th WEDC conference: Water and Urban Services in Asia and the Pacific, September, 1988, m.s. 103*.

Megat Johari Megat Mohd. Noor. "Upflow Fixed Bed Anaerobic Digestion." Paper presented at Department of Biotechnology Seminar, UPM Serdang, Mar. 1989.

Megat Johari Megat Mohd. Noor. "Biological Wastewater Treatment: Principles and Application." Paper presented at the 2nd ENSEARCH Training Course for Wastewater Treatment Plant Operators. Penang, February 1988.

Megat Johari Megat Mohd. Noor, Ahmad Jusoh, Abdul Halim Ghazali, "Sistem Rawatan Air dan Air Sisa di Negeri-negeri Utara Malaysia." Penerbitan Jabatan Kej. Awam dan Alam Sekitar, UPM Serdang. Disember, 1987.

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Megat Johari Megat Mohd. Noor. "Sludge Management Considerations." Paper presented at the 2nd training Course on Operation and Maintenance of Wastewater Treatment Plants. UPM Serdang. December 1988.

Research Thrust Area: Materials and Structures, diadakan di Fakulti Kejuruteraan oleh Dr. S.A. Salam pada 29hb. Mac, 1989.

Research Thrust Area: Agricultural Mechanization and Machinery Development, diadakan di Fakulti Kejuruteraan oleh pada 26hb. April, 1989.

Bengkel Teknologi Simenfero Ke-4, dianjurkan oleh FIN/UPM pada 26hb. November, 1989.

Kursus Pendek Teknologi Simenfero dalam Pembinaan Tangki Air, dianjurkan oleh FIN/UPM pada 31hb. Jan. hingga 2 Februari, 1989.

Seminar dan Pameran Kebangsaan Kejuruteraan dibantu Komputer (CAE) dan Sistem Maklumat Kejuruteraan, (EIS) 15 dan 16 Mac, 1988.

Kursus 'Plantation Mechanization' untuk Pengurus-pengurus Estet, diadakan pada 20 - 25hb. Jun, 1988.

Seminar Penyelidikan Kejuruteraan Pertanian, UPM, 16 - 17hb. November, 1988.

#### **LAWATAN/PELAWAT**

Mr. Terry Mac Carthy dari University of Newcastle-Upon-Tyne, United Kingdom telah membuat lawatan ke Jabatan Kej. Pemprosesan dan Kesekitaran pada 2hb. Julai hingga 6hb. Ogos, 1988 di bawah program talian akademik anjuran British Council dan UPM.

Dr. Mohd. Nordin Ibrahim, Ketua Jabatan Kej. Pemprosesan dan Kesekitaran telah membuat lawatan ke University of Newcastle-Upon-Tyne pada 12hb. Mac, 1989 di bawah program talian akademik anjuran British Council dan UPM.

Encik Ahmad Mohd. Zain, Juruteknik Kanan Jab. Kej. Pemprosesan telah membuat sambil belajar ke University of Newcastle-Upon-Tyne pada 2hb. April hingga 14hb. Mei, 1989.

Jab. Kej. Pemprosesan telah membuat lawatan sambil belajar ke University of Newcastle-Upon-Tyne pada 2hb. April hingga 14hb. Mei, 1989.

## FAKULTI SAINS DAN PENGAJIAN ALAM SEKITAR

### DEKAN:

Prof. Dr. Hj. Badri bin Muhammad B.Sc. (Hons.) (St. F.X.), Ph.D. (Dal.)

### KAKITANGAN:

#### Jumlah Kakitangan:

Jabatan	Kategori			
	A	B	C	D
Pejabat Dekan	6	—	12	18
Biokimia dan Mikrobiologi	17	1	15	11
Biologi	27	—	24	20
Fizik	29	1	15	10
Kimia	29	—	23	19
Matematik	42	—	1	5
Sains Alam Sekitar	16	—	11	7
Pusat Sains Asasi	29	—	2	1
<b>Jumlah:</b>	<b>195</b>	<b>2</b>	<b>102</b>	<b>90</b>
<b>Jumlah Besar</b>	<b>389</b>			

#### Perletakan Jawatan

Seorang pensyarah dan dua pelayan makmal telah meletak jawatan.

#### Cuti Belajar

Seramai 28 orang pensyarah sedang mengikuti kursus di dalam dan luar negeri (Ph.D. 23, Master 5)

**Jumlah Pelajar Mengikuti Program**

Program	Tahun					JUMLAH
	I	II	III	IV	V	
Diploma Sains Komputer	78	64	44	*6		192
Bachelor Sains Komputer	28	24	41	34		127
Bachelor Sains (Kepujian)	100	53	34	23		210
Bachelor Sains (Alam Sekitar)	16	15	13	6		50
Bachelor Sains Dgn. Pendidikan (Kepujian)	—	—	44	22	*1	67
<b>JUMLAH BESAR</b>						<b>646</b>

\* Semester Tambahan

**Jumlah Pelajar Ijazah Lanjutan**

Program	Bilangan
Master Sains	17
Ph. D.	5
Jumlah	22

**PEMERIKSA LUAR**

Prof. Evan Wyn – Jones dari University of Salford, England adalah pemeriksa luar bagi program Bac. Sains (Kep.)/Bac. Sains dengan Pendidikan (Kepujian) Major Kimia mulai 9 April hingga 20 April 1989.

Prof. N. Thomas Stephens dari Florida Institute of Technology Melbourne Florida adalah pemeriksa luar bagi program Bac. Sains (Alam Sekitar) mulai 2 April hingga 15 April 1989.

Prof. J. H. Loxton dari Physics Computing and Electronics Macquarie University NSW Australia adalah pemeriksa luar bagi program Bac. Sains (Kep.) Major Matematik mulai 16 April hingga 28 April 1989.

**PENYELIDIKAN**

Dr. Abd. Rahman Manas  
 – Biological Screening of Traditional medicinal Plants in Relation To The Anticancer

Agents And Toxicity.

- Chemical Constituents, Structural Determination of Compounds From Phyllanthus Species and Eudia Species.

Atan Mohd Sharif

- Kajian Penentuan Struktur dan Keaktifan Biologi keatas Alkalodi Popowia Pisocarpa.

Dr. Asmah Haji Yahaya

- Kajian terhadap teknik-teknik pencernaan dan penganalisan bagi unsur-unsur surih dalam bahan pertanian dan air. (keutamaan diberikan kepada logam berat)

Prof. Dr. Hj. Badri Muhammad

- Thermal Decomposition of Co (II) Complexes.
- Preparation and Characterization of Activated Carbon.

Dr. Karen Badri

- Preparation and Characterization of Activated Carbon.
- Thermal Decomposition of Chromium (II) Complexes.
- Organometallic Complexes – Synthesis & Reactions.
- The Effect of the Extractive of Kapur on the Curing of Adhesives.

Dr. Lee Chnoong Kheng

- Arsenik, kadmium dan plumbum dalam biji koko dan tanah di Semenanjung Malaysia.
- Penyerapan pewarna bes pada bahan-bahan pertanian.

Dr. Low Kun She

- Arsenik, kadmium dan plumbum dalam biji koko dan tanah di Semenanjung Malaysia.
- Penyerapan pewarna bes pada bahan-bahan pertanian.

En. Mansor Hj. Ahmad

- Kajian terhadap teknik-teknik pencernaan dan penganalisisaan bagi unsur-unsur surih dalam bahan pertanian dan air.

Dr. Mawardi Rahmani

- Biological Screening of Traditional Medicinal Plants in Relation to the Anticancer Agents and Toxicity.

Dr. Aspollah Hj. Sukari

- Pengekstrakan dan pencirian komponen Kimia dari tumbuhan ubatan serta kajian ketoksikannya.
- Kajian minyak pati dari tumbuhan famili Labiatea dan Zingiberaceae.

Dr. Md. Jelas Haron

- Penyediaan Penukar ion mengkelat poli (asid N-fenilhidroksamik).

Dr. Mohd. Zaini Desa

- Kestabilan ekstrak antosianin daripada roselle (*hibiscus sabdariffa*, L.).
- Pengekstrakan pewarna Congo merah dengan resin Amberlyst A 27.

Dr. Mohamad Zaki Ab. Rahman

- Pengubahsuaian Kimia Getah Asli dan Minyak Kelapa sawit secara tindak balas meta-tesis.

Dr. Ramli Ibrahim

- Karbon diaktifkan sebagai Sampingan Berliang Untuk Elektron Rujukan.

Puan Rehan Hj. Mohd. Nor.

- Kajian Mengenai Masalah Pelajar dalam Tajuk-tajuk Tertentu dalam kimia.

Dr. Sidik bin Silong

- Penyediaan, pencirian dan penentuan struktur kompleks logam berat dengan ligan multidentat.

Dr. Tan Wee Tee

- Elektroanalytical studies of selected metal complexes.
- Sorption Studies of metal ions by agricultural residues.

Dr. Wan Md. Zin b. Wan Yunus

- Penyediaan, Pencirian dan Penggunaan Resin Penukar Ion.
- Penyediaan Polimer Sebagai metriks untuk sekar gerak enzim.

Prof. Madya Dr. Kamel Ariffin b. Mohd Atan: Kekardinalan Set Penyelesaian Persamaan Kongruen.

(Cardinality of the Set of Solutions to Congruence Equations).

Mohamed b. Othman: Kecerdasan Buatan dan Sistem Kepakaran.

(Artificial Intelligence and Expert System).

Prof. Madya Dr. Mohamed b. Suleiman: Kaedah Berangka Dalam Penyelesaian Persamaan Pembezaan Biasa.

(Numeric Method in the Solutions of Ordinary Differential Equations).

Drs. Ismail B. Abdullah: Merekacipta Pakej Komputer Untuk Sekolah-sekolah.

(To Design Computer Packages for Schools).

Dr. Abu Talib b. Othman: Permodelan Sistem Rangkaian Komputer.

(Modelling of Computer Network System).

Prof. Madya Dr. Malik b. Hj. Abu Hassan: Pengoptimuman Sejagat.

(Global Optimization).

Dr. Abu Talib b. Othman: Penilaian Prestasi Komputer.

(Evaluation on Computer Performance).

Md. Yazid b. Mohd Saman dan Ramlan b. Mahmood: Rekabentuk Pentafsir Bahasa AHAL.

(Design of AHAL Language Interpreter).

Prof. Madya Dr. Mohamed b. Suleiman: Mencari Rantau Kestabilan Bagi Kaedah Runge-Kutta.

(Determining the Region of Stability of Runge-Kutta Method).

Dr. Leow Soo Kar: Penggunaan Teori Giliran di Pelabuhan Kelang.

(Application of Queuing Theory at Port Klang)

Dr. Ismail b. Mohd: Matematik Selang. (Interval Mathematics).

Prof. Madya Dr. Mohamed b. Suleiman, En. Saiman b. Mat Baik, Pn. Fudziah bte Ismail: Penyelesaian Persamaan Pembezaan Peringkat Tinggi Secara Terus.

(Solutions to Higher Order Differential Equations by Direct Method).

Prof. Madya Dr. Mohamed b. Suleiman, Dr. Bachok b. Taib: Pemetakan Persamaan Pembezaan Biasa.

(Partitioning of Ordinary Differential Equations).

Md. Nasir b. Sulaiman: Sistem Maklumat Pengurusan Prototaip: Kajian Kes FSAS. (Prototype Management Information System: Case Study FSAS).

Md. Nasir b. Sulaiman: Pakej Pembelajaran Bahasa Pascal. (Package On the Learning of PASCAL).

Md. Yazid b. Mohd Saman: Mengkaji Ciri-ciri 'Concurrent' Pengaturcaraan Dalam Beberapa Bahasa Komputer.

(A Study on the Features of Concurrent Programming In Some Computer Languages).

Mat Rofa b. Ismail: Teori Singularan. (Singularity Theory)

Mat Rofa b. Ismail: Sejarah Matematik (History of Mathematics).

En. Azmi Zakaria: Mereka bentuk Alat Penentu Pekali Penyerapan dan Pekali Penyerakan Larutan.

En. Abdul Rahman Ramli: Pembinaan Amali Fizik Berbantu Komputer.

Dr. Mohd. Yusof Sulaiman: Penggunaan Teknik Tomografi Dalam Pertanian.

Dr. Abdul Halim Shaari, Dr. Mansor Hashim: Preparation and Characterization of Magnetic and Semiconducting Materials.

Dr. Abdul Halim Shaari, Dr. Mansor Hashim: Superkonduktor Suhu Tinggi.

Dr. Yahya Mat Hassan, En. Rahman Ramli, Dr. Kaida Khalid: Instrumentasi

En. Zaidan Abd. Wahab: Keresapan Terma bagi Getah Asli Terepokside (GATE). Applications of Photoacoustic.

Dr. W. Mahmood Mat Yunos, En. Zainul Abidin Sulaiman: Penentuan Masa Ranum Buah Kelapa Sawit dengan Menggunakan Kaedah Tomografi.

Dr. Hj. Kaida Khalid dan En. Rahman Ramli: The Development of Multipurpose Moisture Content Meter by Using Microwave Technique.

Dr. Shaharin Ibrahim: Penjanaan Tenaga Elektrik dengan Menggunakan Mikrohidro.

Dr. Chow Sai Pew, Dr. Mansor Hashim: Sinar Suria dan Pemindahan Haba dalam Rumah Kaca Hidroponik.

Dr. Yahya Mat Hassan: Pencirian tak linear ke atas bahan dan peranti dengan kaedah mikrogelombang.

Abdul Wahid Ghazali: Improvement of Environmental Health in Urban Settlements and Fringes – Case Study of Selected New Villages in Malaysia.

Nasiman Sapari, Abdul Wahid Ghazali, Puziah A. Latif, Rosta Harun: The Development of Petrochemical Industries and its Effects on Rantau Abang Beach. (Projek IRPA).

Abd. Wahid Ghazali: Cadangan Mengujudkan laluan Penghijrahan Gajah yang teratur (PERHILITAN dan Kementerian Kemajuan Tanah dan Wilayah).

Azman Zainal Abidin: Observations of the temporal and spatial patterns of selected air pollutants in the Klang Valley.

Azman Zainal Abidin: Observations of vertical temperature profiles and vertical profiles of wind velocity.

Azman Zainal Abidin: Monitoring of Polynuclear Aromatic Hydrocarbons (PAH) in the

- Klang Valley (joint study with the National Institute of Public Health, Tokyo, Japan).
- Dr. Anhar Suki: Kajian feasibiliti Penubuhan Khidmat Nasihat Teknikal bagi pengurusan loji rawatan air buangan.
- Dr. Anhar Suki: Kajian proses kolam pengoksidaan dan bioturas jenis titisan bagi kumbahan.
- Dr. Anhar Suki: Proses anaerobik kadar pantas bagi POME
- Dr. Mohd. Ismail Yaziz: Microbiology of Oxidation Pond Systems (IRPA project).
- Dr. Mohd. Ismail Yaziz: Isolation and Characterization of Campylobacters from Animals (WHO/PERAS project).
- Dr. Muhamad Awang: Kesan Pencemaran udara terhadap tanaman pertanian dan kulturakebunan.
- Dr. Muhamad Awang: Kesan simulasi hujan asid, terhadap tanaman pertanian dan kulturakebunan.
- Dr. Muhamad Awang: Kesan perubahan iklim serta peningkatan CO<sub>2</sub> terhadap tanaman pertanian.
- Dr. Ramdzani Abdullah: Keberkesanan pelaksanaan Penilai Kesan-kesan Alam Sekitar di negara membangun.
- Puziah Abdul Latif: Rawatan ke atas sisa pertanian.
- Dr. Nasiman Sapari, Puziah Abd. Latif: Pengawasan dan Pengurusan Air Bawah Tanah di Kawasan Tapak Pelupusan Sisa Pepejal.
- Dr. Nasiman Sapari, Puziah Abdul Latif, Azman Z. Abidin dan Zelina Z. Ibrahim: Post Environmental Impact Assesment of Sultan Salahuddin Abdul Aziz Power Station.
- Tengku Hanidza Ismail: Isolation of Campylobacter sepcies from domestic animals.
- Tengku Hanidza Ismail: Mengukur tahap bunyi bising di Kilang-kilang Percetakan di Bandar Johor Baru.
- Drs. Abd. Rahim Ismail:
- Taksonomi tetampin Malaysia (Insecta: Trichoptera).
- Drs. Idris Abd. Ghani:
- Ekologi organisma Interstitial (Psammon) Invertebrata akuatik sebagai penunjuk kualiti air.
- Dr. Umi Salamah Hassan:
- Pembaikan dan pengaruh variasi genetik pada kultivar *Garcinia mangostana* menggunakan sinaran mengion terhadap anak-benih dan plantlet.
  - Toksisiti genetik logam timah terhadap sel sum-sum tikus.
- Dr. Azhar Phoon Chum Guan:
- Taksiran potensi kebun belimbing besi menghasilkan madu lebah.
  - Penggunaan kelulut dalam pendebungaan pokok buah-buahan.
- Dr. Quah Soon Cheang:
- Genetics and Breeding of Mungbean.
- Dr. Tan Soon Guan:
- Genetic identification of strains and genotypes of buffaloes and goats from Southeast Asia.
  - Biochemical genetic markers in Malaysia's animal and plant species.
- Dr. Hasnah Hamdan:
- Genetic analysis of siderophore production in *Pseudomonas fluorescens* M4-80R.
  - Role of the fluorescent siderophore of *Pseudomonas fluorescens* 2-79RN10 in biological control of wheat.
- Ahmad Abd. Rahman:
- Pengumpulan germplasma Zingiberaceae di Malaysia dan negara-negara lain.
  - Zingiberaceae sebagai bahan perasa makanan, sumber bahan ubatan, dan tumbuhan hiasan.
  - Penghasilan minyak asen dari beberapa spesies Famili Zingiberaceae.
  - Kunyit (*Curcuma* sp.) sebagai bahan pewarna, pengawet dan potensi sumber ekonomi.
  - Kesan curcumin terhadap pertumbuhan bakteria dan kulat.
  - Kesan curcumin terhadap anai-anai, kum-

bang beras dan lipas.

- *Ficus cunia* (Moraceae) sebagai tumbuhan buahan Malaysia.
- Ekologi tumbuhan pantai: Cukai ke Johor Baharu.

Dr. Ithnin Bujang:

- Variasi Penggunaan Nutrien Tanaman *Vigna radiata*.

Nor'Aini Mohd. Fadzillah:

- Kajian ke atas pengkulturan *Capsicum sp.* secara *in vitro*.

Dr. Ann Anton:

- Kenalpasti penunjuk biologi bagi kualiti air dan perubahan alam sekitar.
- Kesan pencemaran haba terhadap organisme marin.

Nakisah Mat Amin:

- Pemencilan dan pengenalpastian spesies ameba dari sedimen-sedimen sungai di Malaysia.
- Mengenalpasti spesies ameba yang boleh digunakan sebagai penunjuk kualiti air.

Dr. Jambari Hj. Ali:

- Kawalan Biologi Penyakit Gatal-Sawah (Cercarial Dermatitis) di Negeri Sembilan.
- Pengwujudan Sistem Pemonitoran Nyamuk *Aedes albopictus* di kampus UPM, Serdang.
- Kawalan Biologi Nyamuk *Aedes albopictus* menggunakan Nyamuk *Toxorynchitis splendens*.
- Kajian Biologi Pendebunga Kelapa Sawit *Elaeodobius kamerunicus*.
- Taksonomi Pentastomida dari Kumpulan *Raillietiella* (Cephalobaenida).

Dr. Vijaya S. Kanapathipillai:

- Fruit surface fungi of bananas and their potential towards biological control of Anthracnose pathogen: - *Colletotrichum* species.
- Seed borne fungi of vegetables, longbeans, frenchbeans and 4 angled beans, their pathogenic importance and the control measures.

Dr. Saberi Othman:

- Auteknologi tumbuhan yang mempunyai kepentingan Ekonomi:
  - a. Biologi dan Ekologi *Asystasia intrusa* (B1.)
  - b. Rate of sedimentation in Mangrove soil.

- The distribution of plants in tin-tailing area and its relation to edaphic factors.

Dr. Abu Bakar Salleh: Teknologi Enzim dan Mikrob: Biotekno

Dr. Abu Bakar Salleh: Teknologi Enzim dan Mikrob: Bioteknologi Lemak dan Minyak.

Dr. Che Nyonya Abdul Razak: Penyaringan, pemencilan dan pencirian mikrob lipolitik.

Dr. Che Nyonya Abdul Razak: Bioteknologi Haiwan: Kajian ke atas *Hemophilus paraqallinavium* : Pengklonan gen.

Ismail Omar, M. Mahmood dan M. A. Syed: Kesan tekanan persikataran (misalan kamarau, ion galian, nutrien, hormon, baja dan kemasinan) terhadap pertumbuhan kekacang menggunakan teknik kultur sel/tisu.

Ismail Omar: Interaksi antara ligan dengan reseptor karbohidrat pada permukaan eritrosit manusia melalui tindakbalas ikatsilang foto.

Dr. Johari Ramli: FAO/IAEA Coordinated Research on Radiotracer Studies of Fungicide Residues in Food Plants.

Dr. Johari Ramli: Kajian terhadap residu racun kulat etilinbisditiokarbamat di dalam projek teras MPKSN Biokimia Racun Makhluk Perosak.

Dr. Juzu Hayati Arshad: Kegigihan malation di dalam beras simpanan.

Dr. Juzu Hayati Arshad: Bioavailabiliti malation di dalam beras/padi simpanan ke atas tikus.

Dr. Kamaruzaman Ampon: Chemical Modification of Lipase for use in Organic Synthesis.

Dr. Kamaruzaman Ampon: Purification and characterization of proteinases from latex of *Hevea brasiliensis*.

Dr. Kamaruzaman Ampon: Development of a rapid, easy, and economical screening kit for detection of cellular factors from animals and plants.

Dr. Kamaruzaman Ampon: Tailor making by chemical modifications of industrially important protein molecules.

Dr. Khatijah Yusoff: Application of genetic engineering in disease control: molecular cloning and analysis of the Newcastle disease virus.

Dr. Khatijah Yusoff: Molecular analysis of some plant viruses which are of economic importance in Malaysia.

Dr. Lee Chaing Hin: Metabolisma siklik AMP dalam pengikat nitrogen Rhizonium.

Dr. Marziah Mahmood: Molecular Biology of Plant stresses.

Dr. Mohd. Arif Syed: Mengenalpasti dan mengasingkan parameter-parameter asimilasi N<sub>2</sub> yang diperlukan untuk pertumbuhan dan daya hidup survival sel-sel di dalam kekacang dan tanaman penting yang lain (seperti padi) di bawah tekanan (stress).

Dr. Mohd. Arif Syed: Mengkaji 'bioavailability' dan 'biological activity' (toxicological potential) sisa baki racun perosak kepada organisma bukan sasaran dengan menggunakan teknik-teknik radiotracer.

Dr. Mohd. Arif Syed: Biological Activity and Bioavailability of Bound Pesticide Residues Using Nuclear Techniques.

Dr. Mohd. Arif Syed: phosphatases in the Latex of *Hevea brasiliensis*.

Dr. Mohd. Noor Wahab: Penanaman Cendawan *Pleurotus sajor-caju*.

Dr. Nor Aripin Shamaan: Chromosome and gene mapping in livestock in Malaysia.

Dr. Nor Aripin Shamaan and Wan Zurinah Wan Ngah: The involvement of glutathione-dependent enzymes in detoxication and initiation of chemical carcinogenesis.

Dr. Norani Abdul Samad: Pembentukan teknik-teknik untuk pengesanan 'Cymbidium mosaic virus' dan 'Odontoglossum ringspot virus' di tanaman orkid.

Dr. Norani Abdul Samad: Kajian epidemiologi virus-virus yang ditransmitkan oleh aphid di tanaman cili.

Dr. Norani Abdul Samad: Mengenalpasti virus di kekacang dan sayuran di Malaysia.

Dr. Norani Abdul Samad: Kajian virus di *Hevea* sp.

Dr. Norhani Abdullah: Pengajian mengenai kulat rumen lembu dan kerbau yang diberi makanan berserabut — ciri-ciri kulat dan enzim-enzim yang dihasilkan oleh kulat.

Dr. Othman Abdul Samah: Penapaian koko dan bahan buangan pertanian.

Dr. Tong Chow Chin: Penanaman Cendawan *Volvariella* sp.

Dr. Tong Chow Chin: Penanaman Cendawan *Ganoderma* sp.

#### PENERBITAN

W. Mahmood b. Mat Yunos and Azizan b. Abdul Rahman: Refractive index of solutions at high concentrations. *Appl. opt.* 27 (16), 3341 — 3343 (1988).

W. Mahmood b. Mat Yunos: Peranan parasparas 3p dan 3p terhadap Pekali Pengionan Sekunder dalam Nyahcas Townsend. *PERTANIKA* 11 (2), MS 311 — 315 (1988).

Zainal Abidin Sulaiman: Pendahuluan Fizik Atom dan Nukleus, Buku Teks DBP.

Azmi Zakaria: "Elektronik" dan "Litar dan Pemasangan Pembekal Kuasa Untuk Meter pH/mV" Module Bengkel Jun 1988.

Azmi Zakaria: "Elektronik" dan "Litar dan Pemasangan Pembekal Kuasa Untuk Meter pH/mV" Module Bengkel April 1989.

K. B. Khalid, TSM Maclean, M. Razaz, P. W. Webb: Tem Analysis of Coplanar Stripline Moisture Sensor. *Jornal Fizik Malaysia* 1988 Jilid 9 No. Bhg. 36 M. S. 29 — 35.

Kaida b. Khalid, Zaidan b. A. Wahab, A. R. Kasmani: Microwave Drying of *Hevea* Rubber

Latex and Total Solid Content (TSC) Determination. PERTANIKA 1988 Jilid II No. Bhg. 2 M. S. 289 – 297

K. Khalid: The Application of Microstrip Sensors for Determination of Moisture Content in Hevea Rubber Latex. Journal of Microwave Power and Electromagnetic Energy 1988 Jilid 23 No. Bhg. 1 M. S. 45-52

K. B. Khalid, TSM Maclean M. Razaz P. W. Webb: Analysis and Optimal Design of Microstrip Sensors. Iee Proceedings Pt. H. 1988 Jilid 135 No. Bhg. 3 M. S. 187 – 195

K. B. Khalid, Y. M. Hassan, A. R. Ramli: The Analysis and Optimal Design of Coplanar Stripline Moisture Sensor. Proceedings First Regional Seminar on Process Control Nov 1988 M. S. 137 – 149, Kuala Lumpur.

G. A. Saunders, H. A. A. Sidek, H. Futterer, J. Pelzl and H. Bach: The Elastic Behaviour of Ce S and La S. J. Mat. Sci. 23, 121 – 125, (1988).

H. A. A. Sidek, G. A. Saunders, R. N. Hampton, R. C. J. Draper and B. Bridge: Samarium Ion Valence Instability in a Glassy Matrix. Phil. Mag. Letts., 57, 49-53 (1988).

A. Mierzejewski, G. A. Saunders, H. A. A. Sidek and B. Bridge: Vibrational Properties of Samarium Phosphate Glasses J. Non-Cryst. Solids (1988), Vol. 104, 323-332.

H. A. A. Sidek, I. T. Collier, R. N. Hampton, G. A. Saunders and B. Bridge: Electrical Conductivity and Dielectric Constant of Samarium Phosphate Glasses Phil. Mag. (1989) B. vol. 59, no. 2, 221-232.

A. Mierzejewski, G. A. Saunders, H. A. A. Sidek, R. N. Hampton and I. J. Mummar: Valence Instability of Samarium Phosphate Glasses 11th. European Conference on Thermophysical Properties, Umea, Sweden, Jun, (1988).

K. B. Khalid, Y. M. Hassan and Y. B. Hashim: Microwave Aquametry In Hevea Rubber Latex by Reflection Technique Dibentangkan di National Physic Symposium '88, IFM, Universiti Malaya, 13 August 1988.

K. B. Khalid, Y. M. Hassan, A. R. Ramli: Measurement of Dry Rubber Content of Hevea Latex and Its Problem.

Dibentangkan di Seminar Tahun Ke V Fizik Keadaan Pepejal, UTM, Skudai, Johor 3-4 Oktober 1988.

Zainal Abidin Sulaiman: The Use of Computed Tomography in Agro – based Research.

Dibentangkan di National Physics Symposium '88, IFM, Universiti Malaya, 13 August 1988.

Mansor Hashim & Faridah Mohd. Yusof: Isochronal Recovery of Dc Electrical Resistivity in Yttrium Iron Garnet (YIG).

Dibentangkan di National Physics Symposium '88, IFM, Universiti Malaya, 13 August 1988.

A. Halim Shaari, Mansor Hashim and Mohd. Noh Dalimin: Some Aspects of Preparation and Characterisation of High-T Y-Ba – Cu – O Superconductor.

Dibentangkan di National Physics Symposium '88, IFM, Universiti Malaya, 13 August 1988.

Mohd. Noh Dalimin, Abdul Halim Shaari & Mansor Hashim: Progress in High Temperature Superconductors and Their Impact on Industry. Dibentangkan di National Physics Symposium '88, IFM, Universiti Malaya, 13 August 1988.

Zainul Abidin Hassan & Azmi Zakaria: The Cooling of Water in Malaysian Earthen Water Jug.

Dibentangkan di National Physics Symposium '88, IFM, Universiti Malaya, 13 August 1988.

Zainul Abidin Hassan & Azmi Zakaria: The Effect of Quenching Temperature on the Cooling of Water in Earthen Water Jug.

Dibentangkan di National Physics Symposium '88, IFM, Universiti Malaya, 13 August 1988.

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#### Seminar/Bengkel/Kursus

Dr. Abd. Rahman Manas, Dr. Mohd. Zaizi Desa, Atan Mohd. Shariff, Dr. Aspollah Hj. Sukari telah menghadiri

“Seminar/Pameran Mengenai Perubahan Traditional Malaysia” diadakan pada 10-11 Jun 1988 di Universiti Malaya, Kuala Lumpur.

Dr. Abd. Rahman Manas, Atan Mohd. Shariff, Dr. Mohd Zaizi Desa, Dr. Aspollah Hj. Sukari “Unesco Sub-Regional Seminar/Workshop On The Systematic Identification of Natural Products” pada 13-17 Jun 1988 di Universiti Kebangsaan Malaysia.

Dr. Asmah Hj. Yahaya, En. Mansor Ahmad, Dr. Md. Jelas Haron, Dr. Wan Md. Zin Wan Yunos telah menghadiri

Simposium Kimia Analisis Kebangsaan Kedua yang diadakan pada 6-8 Sept. 1988, di USM, Pulau Pinang.

Dr. Asmah Hj. Yahya, Dr. Mawardi Rahmani, Cik Kamaliah Sivati telah menghadiri

Seminar on Toxins in Food yang diadakan pada 15 Mei 1989 di UM, Kuala Lumpur.

Dr. Mohd. Zaizi Desa telah menghadiri

Liquid Chromatography Seminar oleh Perkin Elmer and Rank O'Connor's diadakan pada 28-29 November 1988.

Dr. Mohd. Zaizi Desa, En. Mansor Ahmad, Dr. Md. Jelas Haron, Dr. Sidek Sulong, Dr. Wan Md. Zin Wan Yunus telah menghadiri

Bengkel Pembinaan Kelengkapan Makmal Murah Tempatan, Meter pH/mV, diadakan pada 3-5hb. April, 1989, UPM.

Prof. Dr. Badri Muhammad telah menghadiri kertas kerja

“Pemimpin dan Kepimpinan Mahasiswa”. Kursus Perkaderan, Kelab Patriotik Kolej Tun Perak. 23-25 Januari 1989.

“Universiti Sebagai Tempat Pembinaan Intelekt”. Kursus kepimpinan I Sesi 1988/89. 20-23 Ogos, 1988. Kolej Kediaman Ke Sembilan, UPM.

“Ilmu Sebagai Teras Pembangunan Ummah” Kursus Motivasi: 26 Feb. 1989. Perpustakaan UPM.

Science and Technology Policy of the Moslem World. Islamic Academy of Sciences. Islamabad. 3-5 December 1988.

Forum Dasar Ekonomi Baru: Penyelesaian Selepas 1990. Pusat Kajian Dasar Pertanian UPM. 21 Mac 1989.

Dr. Karen Badri telah menghadiri

Seminar Peranan Editor dalam Penyuntingan Jurnal diadakan pada 18-20 Oktober, 1988.

En. Mansor Ahmad, Dr. Md. Jelas Haron telah menghadiri

Seminar on Gel Permeation Chromatography anjuran Waters (Australia) pada 26 Oktober 1988 di Subang Merlin, Subang Jaya.

Dr. Aspollah Hj. Sukari telah

Melawat Pesticide Research Institute, University of Kyoto dari 21 Nov. 1988 hingga 10 Des, 1988; sebagai Guest Scholar (program anjuran JSPS-VCC)

Dr. Aspollah Hj. Sukari telah menghadiri

The 2nd JSPS-VCC Seminar on Chemistry, Biotechnology and Environmental Engineering, 6-7 Dec. 1988, Kyoto Univ. Japan. (Pembentang kertas kerja).

Dr. Aspollah Hj. Sukari, Dr. Nordin Lajis, telah menghadiri

Sixth Asian Symposium on Medicinal Plants and Spices, 24-28th Jan 1989, Bandung, Indonesia. (Pembentang kertas kerja)

Dr. Md. Jelas Haron, Dr. Wan Md. Zin Wan Yunus, telah menghadiri

Malaysian Chemical Conference '88 Anjuran

Institut Kimia Malaysia di Holiday Inn Johor Baharu, 9-10 Ogos, 1988 – Pembentang kertas kerja.

Dr. Md. Jelas Harun telah menghadiri

Seminar Penyelidikan dan Perancangan dalam Industri – Jabatan Alam Sekitar – Kementerian Alam Sekitar, 21.3.89 – Peserta.

Bengkel Latihan Mengajar antara Universiti ke 5 Anjuran J/K Latihan Mengajar Antara Universiti di UPM. 16-17.12.88 – Ahli Jawatankuasa Pengelola.

Dialog Jawatankuasa Latihan Mengajar dan Preaktikum Kaunseling dengan pihak sekolah. Anjuran Fakulti Pengajian Pendidikan 30.3.89 – Jawatankuasa Pengelola.

Dr. Mohamad Zaki Ab. Rahman telah menghadiri

International Rubber Technology Conference pada 17-19hb. Okst. 1988 di Penang.

Dr. Nordin Hj. Lajis telah

Menyertai "The Second JSPS-VCC Seminar on Chemistry, Biotechnology, and Environmental Engineering" di Kyoto University, Japan 6-7 Dis, 1988.

Dr. Ramli Ibrahim telah menghadiri

Kursus Mikropemproses Dan Perantaramuka, PUSPATI, Bangi, pada 3-8 Okt. 1988.

Dr. Wan Md. Zin Wan Yunus telah menghadiri

Kursus Keselamatan makmal, Penceramah, ahli jawatankuasa penyelarasan dan teknikal, 6-8 Jun 1988 di Jabatan Kimia, UPM.

Microflow Chemistry Analyser for Research and Industries – 9th January 1989 – Universiti Malaya.

Seminar Penulis Kebangsaan Pengajian Tinggi – 26 Januari, Pusat Dagangan Putra, Kuala Lumpur. Anjuran DBP.

Bengkel ahli Panel kajian kecermeralang Akademik 2-3 1989 – di PPL, UPM.

Seminar Pengurusan Hal Ehwal Pelajar – Isu dan Jawapan 1/4/89 – Dewan Senat

Dr. Abu Bakar Salleh menghadiri kursus peringkat kebangsaan dalam bidang kimia sinaran dan penggunaannya. 17-28 Oktober 1988. Puspati,

Bangi. Instruktur jemputan.

Dr. Abu Bakar Salleh menghadiri Bengkel Pendidikan dan Pembelajaran Biokimia. 14-18 Nov. 1988. Universiti Malaya.

Dr. Abu Bakar Salleh, Dr. Kamaruzaman Ampon, Dr. Norhani Abdullah, Dr. Che Nyonya Abd. Razak, Dr. Lee Chiang Hin, Dr. Johari Ramli, Dr. Mohd. Arit Said, Dr. Othman Abdul Samah, Dr. Juzu Hayati Arshad, Dr. Nor Arifin Shamaan, Dr. Marziah Mahmood, menghadiri 7th FAOB Congress. 28-30 Nov. 1988; PWTC KL.

Dr. Che Nyonya Abd. Razak, Dr. Tong Chow Chin menghadiri Simposium Mikrobiologi Malaysia ke 11. 22-23 Ogos 1988. KL.

Dr. Che Nyonya Abd. Razak, Dr. Lee Chiang Hin, Dr. Juzu Hayati Arshad, Dr. Johari Ramli, Dr. Kamaruzaman Ampon, Dr. Nor Arippin Shamaan, Dr. Othman Abdul Samah, Dr. Marziah Mahmood, Dr. Mohd. Arif Syed menghadiri Bengkel Pendidikan dan Pembelajaran Biokimia. 14-18 Nov. 1988. Universiti Malaya.

Encik Ismail Omar, Dr. Mohd. Arif Syed menghadiri ASEAN Technology Expo 1989. 27 Jan. – 5 Feb. 1989. Manila.

Dr. Johari Ramli, Dr. Juzu Hayati Arshad menghadiri 3rd FAO/IAEA Research Coordination Meeting on Radiotracer Studies of Fungicide Residues in Food Plants Beytepe. 13-17 Mac 1989. Ankara, Turki.

Dr. Kamaruzaman Ampon menghadiri Seminar Pertengahan Tahun Malaysian Society of Parasitology and Tropical Medicine. 3 Sept. 1988. UPM (Peserta).

Dr. Kamaruzaman Ampon menghadiri 1st Malaysian International Symposium on Essential Oils. 6-9 Dis. 1988. KL. (Pembentang Kertas Kerja)

Dr. Khatijah Yusoff menghadiri Conference on genetics and pathogenicity of negative strand viruses. 18-23 Sept. 1988. Dinard, France.

Dr. Khatijah Yusoff menghadiri Seminar

'Recent Advancements in Microbiology'. 16 Jan. 1989. KL.

Dr. Marziah Mahmood menghadiri Simposium Durian, The King of Tropical Fruits. Ogos 1988. USM. (Pembentang Kertas Kerja).

Dr. Marziah Mahmood menghadiri 'Workshop on Peat Res. and Dev. Feb. 1989. MARDI, Serdang. (Pembentang Kertas Kerja).

Dr. Mohd. Arif Syed menghadiri Persidangan AAACU 'Role of Agricultural Colleges and Universities in Poverty Redressal'. 17-22 Okt. 1988. UPM.

Dr. Norani Abdul Samad menghadiri Seminar 'Recent Advancement in Microbiology'. 16 Jan. 1989. KL.

Dr. Norhani Abdullah menghadiri 'International Symposium on Buffalo Genotypes for Small Farms in Asia'. 15-19 Mei 1989. KL.

Dr. Jambari Hj. Ali menghadiri Symposium on Biological Control of Pests in Tropical Agricultural Ecosystems, SEMEO-BIOTROP, Bogor 1-3 June, 1988. Pembentang kertaskerja.

Dr. Jambari Hj. Ali menghadiri 4th APEM Workshop on Electron Microscopy Asian Pacific Electron Microscope Society, Chulalongkorn University, Bangkok, 26-30hb Julai, 1988. Peserta.

Dr. Jambari Hj. Ali menghadiri Conference on Electron Microscopy Asian Pacific Electron Microscope Society's, Bangkok World Trade Center, 1-3 August, 1988. Peserta.

Dr. Jambari Hj. Ali menghadiri Mid Year Seminar of the Malaysian Society of Parasitology and Tropical Medicine, 3rd September, 1988. Peserta.

Dr. Jambari Hj. Ali menghadiri Short Course on Slugs & Snails of Economic Importance, 7-26 November, 1988. Asean Plant Quarantine Centre and Training Institute, Serdang. Peserta Sambilan.

Dr. Jamari Hj. Ali menghadiri 25th Annual Scientific Seminar of the Malaysian Society of Parasitology and Tropical Medicine, IMR,

Kuala Lumpur, 23-25 February, 1989. Pembentang kertaskerja.

Dr. Jambari Hj. Ali menghadiri Short Course on the Management of the Economical and Medical Malacology at the Center for Applied Malacology and Entomology, Mahidol University, Bangkok. 16-23 April, 1989.

Dr. Jambari Hj. Ali menghadiri Mid Year Seminar of the Malaysian Society of Parasitology and Tropical Medicine, 27th May, 1989. Peserta.

Nakisah Mat Amin menghadiri Simposium Mikrobiologi Malaysia, Holiday Inn, Kuala Lumpur, 22-23 August, 1988. Peserta.

Nakisah Mat Amin menghadiri Simposium Biologi Kebangsaan, Subang Jaya, Selangor. 22-24 November, 1988. Pembentang Kertaskerja.

Nakisah Mat Amin: Amoeba tanah berpotensi sebagai patogen: Pamiran Hari Petani & Fakulti Tumpuan, UPM, 18 Februari, 1989.

Nakisah Mat Amin: Seminar 'Research priorities for tropical medicine in the 90's, Seminar Saintifik Tahunan ke 25, Persatuan Kajiparasit dan Perubatan Tropika, IMR, Kuala Lumpur 22-25 Februari, 1989. Peserta.

Nakisah Mat Amin: Pemencilan dan pengenalan-pastian beberapa spesies ameba dari tiga kawasan tanah gambut terpilih dan juga sedimen beberapa sungai di Malaysia. Seminar Jabatan, 24 Mac, 1989.

Nakisah Mat Amin: Menghadiri kursus mengenai teknik-teknik identifikasi dan mengkultur protozoa di CCAP, Cumbria, England, 3-24 Jun, 1989.

Dr. Ann Anton: National Workshop and seminar on Monitoring strategies in Environmental Management and Assessment in Kuala Lumpur. 28 Nov. - 1 Dec. 1988. Peserta

Dr. Ann Anton: Seminar Pertengahan Tahun Malaysian Society of Parasitology and Tropical Biologi (MSTPM) di Universiti Pertanian Malaysia, 3 Sept. 1988. Peserta.

Dr. Ann Anton: WEDC Conference on Water and Urban Services in Asia and the Pacific in Kuala Lumpur. 11-15 April, 1988. Peserta.

Dr. Ann Anton: Bengkel Ahli Panel dan Dekan Kajian Kecemerlangan Akademik, 2 Mac 1989, Universiti Pertanian Malaysia.

Dr. Tan Soon Guan: International Symposium Buffalo Genotypes for Small Farms in Asia, 15-19 Mei, 1989 di Universiti Pertanian Malaysia.

Dr. Tan Soon Guan: Bengkel Ahli Panel dan Dekan Kajian Kecemerlangan Akademik, 2 Mac 1989, di Universiti Pertanian Malaysia.

Dr. Ithnin Bujang: AAACU Seventh Biennial Conference and Seminar on "Role of Agricultural Colleges and Universities in Poverty Redressal, 17-22 October, 1988 di Universiti Pertanian Malaysia".

Dr. Ithnin Bujang: Forum: Dasar Ekonomi Baru: Penyelesaian selepas 1990 pada 21hb Mac, 1989, di Universiti Pertanian Malaysia.

Dr. Quah Soon Cheang: Membentangkan kertas bertajuk "Evaluation of recent introduction of mungbean into Peninsular Malaysia" di Simposium Biologi Kebangsaan Ketiga, 22-24 Nov. 1988, Holiday Villa, Subang Jaya. Anjuran Fakulti Sains Hayat, Universiti Kebangsaan Malaysia.

Dr. Quah Soon Cheang: Menghadiri Bengkel Sumber Genetik Tumbuhan Malaysia pada 23 Nov. 1988 sempena Simposium Biologi Kebangsaan Ketiga, Holiday Villa, Subang Jaya.

Dr. Quah Soon Cheang: Membentangkan kertas bertajuk "Effect of Fertilizers on yield of some mungbean varieties" di National Seminar on Soil Management for food and fruit crop production, 28-29 Mac 1989, Merlin Hotel, Kuala Lumpur. Anjuran Persatuan Sains Tanah Malaysia.

Dr. Quah Soon Cheang: Menghadiri simposium bertajuk "Advances in biochemistry and biotechnology in Asia and Oceania", sempena 7th Federation of Asia and Oceania Biochemists Symposium, 28-30 Nov. 1988, Putra World Trade Centre, Kuala Lumpur.

Dr. Quah Soon Cheang: Menghadiri Seminar bertajuk "Current status of mungbean research in Universiti Pertanian Malaysia" di Jabatan Biologi, Universiti Pertanian Malaysia pada 5 Ogos, 1988.

Dr. Quah Soon Cheang: Menghadiri SAS user group Conference dan AGM di Universiti Pertanian Malaysia pada 26 Jan. 1989.

Dr. Quah Soon Cheang: Menghadiri 2nd Annual Conference of SAS user group of Malaysia bertajuk "Sharing information among SAS users" di Ming Court, Kuala Lumpur pada 21 Sept. 1988.

Dr. Vijaya S. Kanapathipillai: Simposium "First International Symposium on Fruit Flies in the Tropics", 14-16 Mac 1988, Merlin Hotel, Kuala Lumpur.

Nor'Aini Mohd. Fadzillah: Simposium Federation of Asian and Oceanian Biochemists Ketujuh, 28-30 November 1988, di Pusat Daganan Dunia Putra, Kuala Lumpur.

Nor'Aini Mohd. Fadzillah: Bengkel Pengajaran dan Pembelajaran ke VIII, 17-24 Jun, 1989 di Institut Aminuddin Baki.

Dra. Umi Salamah Hassan: Seminar Mikroskop Imbasan Elektron, PUSPATI, Bangi, Selangor, 17 Jun, 1988. Peserta.

Dra. Umi Salamah Hassan: Seminar Pertengahan Tahun Malaysian Society of Parasitology and Tropical Biology, 3 Sept. 1988. Ahli Jawatankuasa Kerja.

Dra. Umi Salamah Hassan: 7th Federation of Asian and Oceanian Biochemists Symposium 28-30 Nov. 1988. Peserta.

Ahmad A. R. & Halijah Ibrahim (1988). Potensi Tumbuhan Famili Halia (Zingiberaceae) Sebagai Sumber Bahan Ubat. Kertaskerja dibentangkan pada Seminar Perubatan Tradisional Malaysia, 10-11 Jun, 1988, di Institut Pengajian Tinggi, Universiti Malaya.

Halijah Ibrahim & Ahmad A. R. (1988). Beberapa Tumbuhan Halia (Zingiberaceae) yang berpotensi. Pameran di Seminar Perubatan Tradisional Malaysia, 10-11 Jun, 1988, di Institut Pengajian Tinggi, Universiti Malaya.

Ahmad A. R. (1988). The Potential of Mangrove Areas in East Coast of Peninsular Malaysia. Paper presented at the Symposium on Mangrove Management: Its Ecological and Economic Considerations. SEMEO-BIOTROP, Bogor, Indonesia, August 9-11, 1988.

Ahmad A. R., F. B. H. Ahmad, Sukari, M. A. and Wahab, H. A. (1988). Essential Oils from *Cucurma* spp. Kertaskerja dibentangkan di "First Malaysian International Conference on Essential Oils, 5-7 Dec. 1988, Putra World Trade Centre, Kuala Lumpur.

Ahmad A. R. and F. B. H. Ahmad (1989). Effect of Curcumin on the Growth of Fungi (*Pestotatia* sp.). Poster presented at Sixth Asian Symposium on Medicinal Plants and Spices. Bandung, Indonesia, 24-28 Jan, 1989.

Ahmad, F. B. H., A. R. Ahmad and A. S. Sajap (1989). Preliminary Study of Feeding Response and Survival of *Coptotermes curvignathus* on Curcumin, Poster presented at Sixth Asian Symposium on Medicinal Plants and Spices, Bandung, Indonesia, 24-28 January 1989.

Dr. Saberi Othman: Simposium Biologi Kebangsaan, Subang Jaya, Selangor, 22-24 Nov. 1988. Pembentang kertaskerja.

Dr. Saberi Othman: Symposium on Mangrove Management: Its Ecological and Economic Considerations: SEAMEO-BIOTROP, Bogor, Indonesia, 9-11 August 1988. Pembentang kertas kerja.

Dr. Saberi Othman: Seminar on Environment Hazards, Subang Jaya, Selangor, 28-29 March 1989. Peserta.

Dr. Saberi Othman: National Workshop on Monitoring Strategies in Environmental Management and Assessment. Kuala Lumpur, 28 Nov - 1 Dis 1983. Peserta.

Dr. Saberi Othman: Kursus 'Tropical Rain Forest Ecology, Utilization and Conservation', Singapore, 10-15 October 1988. Peserta.

Dr. Saberi Othman: PROSEA-First International Symposium, Jakarta, Indonesia, 22-25 May 1989. Pembentang kertaskerja.

Dr. Saberi Othman: Mid Year Seminar of the Malaysian Society of Parasitology and Tropical Medicine (MSTPM). UPM, Selangor, 3 September 1988. Pembentang kertaskerja.

Dr. Salihan Siahs, Kesan Racun rumput rampai terhadap kadar Fotosintesis.  
- Masalah pembelajaran pelajar di sekolah dan di Institusi Pengajian Tinggi.

Dr. Saberi Othman: Bengkel Ahli Panel dan Dekan, Kajian Kecemerlangan Akademik, UPM, Selangor, 2 Mac 1989.

Dr. Saberi Othman: Program Retreat, HEP, UPM, Air Kroh, Melaka. 18-21 April 1989. Pembentang kertaskerja.

Nama Pegawai : Salihan Bin Siahs  
Penyelidikan : Kesan Racun Rumput Rampai Terhadap Kadar Fotosintesis  
Masalah Pembelajaran Pelajar di Sekolah dan Di Institusi Pengajian Tinggi  
Penerbitan : Modul Panduan Menghadapi Peperiksaan (Penulis bersama) Penerbit Hazami Kuala Lumpur. 181 muka surat  
1988

Dr. Salihan Siahs telah mengikuti Bengkel Nadwah Pendidikan: Anjuran Sekolah Menengah Convent Klang, Selangor, Di asrama Yayasan Selangor Klang. (Penceramah/fasilitator)  
1 Mei 1988.

Bengkel Nadwah Pendidikan: Anjuran Sekolah Menengah Sultan Abdul Samad Klang, Selangor, Di Sekolah Sultan Abdul Samad Klang. (Penceramah/fasilitator)  
4 Mei 1988.

Bengkel Nadwah Pendidikan: Anjuran Sekolah Menengah Perempuan Metodist Klang, Selangor, Di Sekolah Meng. Perempuan Metodist Klang. (Penceramah/fasilitator)  
4 Mei 1988.

Bengkel Motivasi Dan Kemahiran Belajar: Anjuran Sekolah Menengah Teknik Kuala

Lumpur Di Sekolah Meng. Teknik Kuala Lumpur.  
(Penceramah/Fasilitator)  
26 Mei 1988.

Bengkel Motivasi Dan Kemahiran Belajar  
Anjuran Sekolah Meng. Dato Taha Gemen-  
ceh Negeri Sembilan. Di dewan Sekolah  
Meng. Dato Taha  
(Penceramah/Fasilitator)

Bersama-sama dengan Persatuan Matematik  
Malaysia, Jabatan Matematik telah meng-  
anjurkan Simposium Kebangsaan Sains Mate-  
matik III yang telah diadakan pada 22hb.  
hingga 24hb. Ogos, 1988, di Universiti Per-  
tanian Malaysia.

Bengkel Motivasi Dan Kemahiran Belajar  
Anjuran Sekolah Meng. Dato Hamzah Klang  
Selangor. Di dewan Dato Hamzah Klang  
(Penceramah/Fasilitator)  
28 Mei 1988.

Bengkel Kemahiran Belajar Guru Seluruh  
Pahang  
Anjuran Pusat Sumber Pendidikan Pahang  
Di Pusat Sumber Pendidikan Pahang. Kuantan.  
(Penceramah/Fasilitator)  
30-2 Jun 1988.

Bengkel Menghadapi Peperiksaan  
Anjuran Sekolah Vokasional Klang  
Peserta Murid tingkatan 5  
Di dewan Sekolah Vokasional Klang  
(Penceramah/Fasilitator)  
10-12 Jun 1988.

Bengkel Khas : "Cara Gaya Berfikir"  
Anjuran Persatuan Bulan Sabit Selangor  
cawangan Selangor  
Di Pusat Perubatan UPM.  
14 Jun 1988.

Bengkel Pengurusan Pelajar Untuk Guru Kanan  
HEM seluruh Negeri Sembilan, Anjuran Pejabat  
Pendidikan Negeri Sembilan. Di Kolej 7 UPM  
(Penceramah/Fasilitator)  
21-23 Jun 1988.

Bengkel Kemahiran Belajar Guru Seluruh  
Negeri Melaka; Anjuran Pejabat Pendidikan  
Negeri Malaka  
Di Pusat Latihan Talipon Kawasan Selatan

Bukit Beruang Malaka  
(Penceramah/fasilitator)  
27 Jun – 2 Julai 1988.

Bengkel Pembinaan Kelengkapan Makmal Harga  
Murah. Anjuran bersama Jabatan Kimia dan  
Fizik UPM  
Di Jabatan Kimia UPM Serdang  
(Pengerusi/fasilitator)  
28 – 30 Jun 1988.

Bengkel Kemahiran Belajar Tingkatan 5  
Anjuran Sekolah Tengku Abd. Rahman Ipoh  
Di Dewan Sekolah STAR Ipoh.  
(Penceramah/Fasilitator)  
15-19 Julai 1988.

Bengkel Kemahiran Belajar Tingkatan 6  
Anjuran Pejabat Pendidikan Wilayah  
Persekutuan  
Di Dewan Asrama Yayasan Selangor Kg.  
Pandan  
(Penceramah/Fasilitator)  
25 – 28 Julai 1988.

Bengkel Kemahiran Belajar; Anjuran Pejabat  
Pendidikan Bentung, Di IPPN Genting Pahang  
Peserta; Guru Daedah Bentung  
(Penceramah/Fasilitator)  
1 – 5 Ogos 1988.

Bengkel Kemahiran Belajar Tingkatan 4  
Anjuran Sekolah Sains Selangor  
Di Dewan Sekolah Sains Selangor  
(Penceramah/Fasilitator)  
12 – 16 Sept. 1988.

Bengkel Kemahiran Belajar Guru Sekolah  
Agama Sultan Zainal Abidin Trengganu  
Anjuran Sultan Zainal Abidin Trengganu  
Di Sekolah Sultan Zainal Abidil  
(Penceramah/Fasilitator)  
22 – 24 Sept. 1988.

Bengkel Sehari Kemahiran Belajar kepada  
Guru Daerah Banting-Sepang Selangor;  
Anjuran Pejabat Pendidikan Daerah Banting-  
Sepang Selangor  
(Penceramah/Fasilitator)  
21 – Oktober 1988.

Bengkel Kemahiran Belajar Untuk Murid  
Bependatan Rendah, Anjuran Pejabat  
Kebajikan Masyarakat Selangor

Di Sekolah Vokasional Shah Alam Selangor  
(Penceramah/fasilitator)  
11 –22 Desember 1988.

Bengkel Penilaian Semula Matalamat Pelajar  
Anjuran HEP UPM. Di Kolej Kediaman 7 UPM  
Penceramah/Fasilitator  
11–12 Feb. 1989.

Bengkel Kemahiran Belajar Murid Tingkatan 5  
Anjuran Sekolah Sains Muar Johor  
Di Dewan Sekolah Sains Muar  
(Penceramah/Fasilitator)  
1–6 Feb. 1989.  
Kaedah Pengajaran dan Pembelajaran. Kertas  
Kerja di Bentangkan di Simposium Kerja Wanita  
Dalam Pendidikan, Di UPM  
Anjuran HEP ( Wanita ) UPM  
( Penulis bersama )  
26 Feb. 1989.

Bengkel Kemahiran Belajar; Anjuran Pejabat  
Pendidikan Bentung, Di Dewan Sek. Zaaba  
Kuala Pilah Negeri Sembilan  
Peserta; Guru Daerah Kuala Pilah – Jelebu  
Negeri Sembilan  
Penceramah / Fasilitator  
3 – 5 March 1989

Bengkel Kemahiran Belajar ; Anjuran Pejabat  
Pendidikan Temerloh Pahang, Di Dewan IPPN  
Genting  
Peserta; Guru seluruh Daerah Temerloh  
Penceramah / Fasilitator  
20 – 23 March 1989

Seminar Penulisan Buku Pengajian Tinggi  
Anjuran Dewan Bahasa Pustaka, Di PWTC  
Kuala Lumpur ( Peserta )  
24 March 1989.

Bengkel Menghadapi Peperiksaan Untuk Murid  
Tingkatan 6 Seluruh Daerah Muar. Anjuran  
Jawatan Kuasa Pengajian Am Daerah Muar,  
Di Sekolah Meng. Tun Mamat Tangkak Muar  
Johor.  
Penceramah / Fasilitator  
24 – 25 March 1989.

Bengkel Kemahiran belajar, Anjuran Sekolah  
Meng. Sultan Ahmad Shah Kuantan. Di Dewan  
Sekolah Sultan Ahmad Shah Kuantan.  
Penceramah / Fasilitator  
17 – 20 Mei 1989

Bengkel Induksi Pegawai UPM.  
Anjuran UPM, Di Kolej Kediaman 7 UPM  
Fasilitator  
23 – 25 Mei 1989.

### Kertas Kerja

Sejauh manakah Kegiatan Kokurikulum Di  
Kolej Kediaman Membantu Mengatasi Polarisasi  
Di kalangan Pelajar, Di bentangkan Di Persidangan  
Perwakilan Pelajar Kolej Kediaman 4 UPM.  
12 Disember 1988.

“Hasrat Negara” Di bentangkan Pada Majlis  
Taklimat minggu suaikenal Di Kolej Kediaman  
5 UPM Anjuran HEP UPM  
26 Jun 1988

Pendekatan dan Teknik Belajar Dalam Sistem  
Semester, Di bentangkan Pada Malam Suaikenal  
Kolej Kediaman 4 UPM.  
Julai 1988.

Pengurusan Masa di kalangan Pelajar Universiti  
Di bentangkan seminar kepimpinan Kolej  
Kediaman 2 UPM.  
Disember 1988.

Peranan Guru-Guru Melayu Dalam Proses Peng-  
ajaran-pembelajaran Di Malaysia. Di Bentangkan  
Pada Kursus Kepimpinan Guru Negeri Perak,  
Anjuran BTN Perak. Di Kem Bina Semanagat  
Kg. Gajah Perak.  
Mei 1989.

Puan Norhafizah Ahmad Nasaruddin: Seminar  
in Earth Resources (Data, System Applications  
1988) di Shangri-La Hotel Sarawak Ballroom  
Kuala Lumpur pada 12 – 14 Julai 1988.  
(peserta).

Dr. Zainal Abidin Sulaiman, Dr Shaharin  
Ibrahim: Seminar Penyenggaraan dan Pengurus-  
an Peralatan Saintifik di Kompleks Puspati,  
Bangi pada 23 – 24 Nov. 1988.

Prof. Madya Dr. Yahya, Mat Hassan, Dr. Kaida  
Khalid, Dr. Zainal Abidin Sulaiman, Dr. W.  
Mahmood Mat Yunos, Dr. Mansor Hashim, Dr.  
Abdul Halim Shaari, En. Rahman Wagiran, En.  
Zaidan Abd. Wahab, En. Rahim Omar, En.  
Zainul Abidin Hassan dan En. Azmi Zakaria:  
National Physics Symposium di Universiti  
Malaya pada 13 Ogos 1988.

Dr. Zainal Abidin Sulaiman: International Seminar and Exhibiton Computerisation for Development – The Research Challenge) di PWTC pada 16/8 hingga 18/8/88 (peserta).

En. Zaidan Abd. Wahab: Seminar dan Bengkel Serantau Mengenai Kalendar Islam Antarabangsa di USM pada 7/6 hingga 10/6/88.

En. Zaidan Abd. Wahab: Kursus Pengenalan Kepada Komputer dan Pemerosesan Data di UPM mulai 22/8 hingga 26/8/88 anjuran Persatuan Mahasiswa Fakulti Ekonomi Pengurusan dengan kerjasama Persatuan Kelas Bac. Sc. Perniagaan Tani Tahun Akhir (sebagai pelajar).

Dr. Abdul Halim Shaari: Seminar “High-Temperature Superconductivity” di Singapura pada 27 Jun hingga 3 Julai 1988.

Prof. Madya Dr. Yahya, Mat Hassan, En. Rahim Omar, Dr. Kaida Khalid, En. Rahman Wagiran, Dr. Shaharin Ibrahim, Dr. Mansor Hashim, Dr. W. Mahmood Mat Yunos: Seminar Tahunan ke V Kumpulan Fizik Keadaan Pepejal di UTM Skudai, Johor pada 3/10 hingga 4/10/88.

En. Rahman Wagiran dan En. Rahman Ramli: Conference on 1st National Computer Science di Pusat Komputer Universiti Malaya pada 24/1 hingga 25/1/89.

Prof. Madya Dr. Yahya Mat Hassan, Dr. Abdul Halim Shaari, Dr. Mansor Hashim: International Workshop on Solid State Ionic Battery di Jabatan Fizik UKM pada 18/1 – 21/1/89.

Dr. Abdul Halim Shaari, Dr. Mansor Hashim: 2nd Asean Science & Technology week di Manila Philippines pada 30 Jan hingga 4 Feb 1989 (mengadakan pameran).

Dr. Abdul Halim Shaari: Membuat Lawatan Ke Institusi-Institusi Pengajian Tinggi di Kanada untuk tujuan Pengiktirafan dan Penilaian Kelayakan Ijazah pada 23/9 hingga 20/10/1988.

Prof. Madya Dr. Yahya Mat Hassan: “Regional Islamic Science Conference for Asia Pacific” di Jakarta, Indonesia pada 12 hingga 15/2/89.

Dr. Abdul Halim Shaari dan Dr. Mansor Hashim: “First Ceramic Technology National

Seminar di The Royal Casuarina Hotel, Ipoh, Perak pada 22 hingga 23 Feb 1989. (bentang kertas kerja).

Prof. Madya Dr. Yahya Mat Hassan, Puan Norhafizah Ahmad Nasaruddin, Dr. Abdul Halim Shaari, Prof. Madya Dr. Mohd Yusof Sulaiman: Bengkel Ahli Panel dan Dekan: Kajian Kece-merlangan Akademik di PPPL pada 2 Mac 1989.

Prof. Madya Dr. Mohd. Yusof Sulaiman, En. Rahman Wagiran, En. Rahman Ramli: The Design, Fabrication and Testing of Intergrated Circuits di UKM pada 22 hingga 26/5/89.

En. Wan Mohd. Daud Wan Yusof: Kursus Kaedah Ujian Permukaan Peringkat Asas di Puspati, Bangi pada 15 hingga 29 Mei 1989.

En. Rahim Omar: “International Workshop on Advances in Holography and Speckle Phenomenon and Their Industrial Application” di Madras, India pada 12 hingga 17/16/88.

Puan Poh Lee Kieng: Kursus Transmission Elektron Microscope di UM pada 22 hingga 26/5/89.

Dr. Zainal Abidin Sulaiman: Seminar on Local Activities on Radiation Physics, Biophysics and Medical Physics di UH PJ 15/12/88.

En. Zaidan Abdul Wahab dan En. Zainul Abidin Hassan: “Regional Workshop on Computer Software Development for Physics Instruction di Bandung, Indonesia pada 22 hingga 24 Nov. 1988.

Dr. Kaida Khalid: “First Regional Seminar on Process Control 1988 di Putra World Trade Centre, K.L. pada 28 hingga 29 Nov. 1988.

En. Azmi Zakaria dan En. Abd. Rahman Ramli: Pembinaan Kelengkapan Makmal Murah Tempatan di Jabatan Kimia, UPM pada 3 April 1989.

Dr. Hj. Kaida Khalid: Kolokium DRC measurement by microwave techniques di RRIM – Stesen Peny. Sg. Buluh pada 7/1/1989.

Dr. Hj. Kaida Khalid, Dr. Shaharin Ibrahim, En. Zaidan Abd. Wahab, En. Zainul Abidin Hassan, Dr. Zainal Abidin Sulaiman, Puan Norhafizah Ahmad Nasaruddin: Pameran Hari Tani, Universiti Pertanian Malaysia 18/3/89.

Kursus pendek 'Operation and Maintenance of Wastewater Treatment Plants' 5 – 10 Disember 1988.

Third Training Course on Industrial and Domestic Wastewater Monitoring, 22 – 27 Mei 1989.

## FAKULTI PERIKANAN DAN SAINS SAMUDERA

### DEKAN

Dr. Kapt. Mohd. Ibrahim bin Hj. Mohamed, Cert. Competency at Fishing Master D.O.T. (Canada) Dip. Nautical Science (Fishing Tech.) (Canada), M.M.A. (URI) Ph.D. (UPM).

### JUMLAH KAKITANGAN

Fakulti Perikanan dan Sains Samudera

Jabatan	Kategori			
	A	B	C	D
Pejabat Am Dekan	4		7	9
Jabatan Akuakultur	13	1	12	8
Bahagian Biologi	10		5	5
Jabatan Teknologi Menangkap Ikan	15	3	20	43
<b>JUMLAH</b>	<b>42</b>	<b>4</b>	<b>44</b>	<b>65</b>

### Perlantikan Baru

Seorang pensyarah telah dilantik untuk bertugas di Jabatan Teknologi Menangkap Ikan dan Sains Samudera.

### Perletakan Jawatan

Seorang Tutor dari Jabatan Teknologi Menangkap Ikan dan Sains Samudera telah meletakkan jawatan.

### Cuti Pelajar

Seramai 7 orang pensyarah sedang mengambil cuti belajar. Seramai 5 orang dari Jabatan Teknologi Menangkap Ikan dan Sains Samudera dan 2 orang dari Jabatan Akuakultur.

### PENYELIDIKAN

Dr. Abu Khair Mohd. Mohsin: Stock assessment and population dynamics of selected species of fish. (Dr. Mohd. Azmi Ambak, Dr. A.K.M. Mohsin, Dr. Mohd. Zaki Mohd. Said)

Stomach content of selected fish species. (Dr. K. M. Mohsin and Dr. Mohd. Zaki Mohd. Said)

Composition of trawl catch from the Matahari expedition. (Dr. A.K.M. Mohsin).

Identification and stock estimation of the Malaysian fisheries resources. (Dr. Mohd. Azmi Ambak, Dr. Ak.K.M. Mohsin and Dr. Hj. Zaki Said).

Aizam Zainal Abidin:

- i) Projek ternakan udang laut \$62,272.50 – (MPKSN)
- ii) Projek ternakan ikan keli \$14,932 – (MPKSN)

Dr. Ang Kok Jee: Perkembangan teknologi yang sesuai untuk pengeluaran akuakultur. Ketua Penyelidikan. Projek IRPA-MPKSN 1-07-05-12 Jumlah \$329,000.00 1988 dan \$400,000.00.

Development of an appropriate technology for *Macrorachium rosenbergii* production and post-harvest handling. Ketua projek. Projek EEC No.

T52. 0099. M(H) Jumlah \$412,000.00, 1989 – 91.

Aziz Arshad: Kajian komuniti bentos di perairan Semenanjung Malaysia – Program ASEAN-Australia.

Aziz Arshad, Mustafa Kamal Abd. Satar dan Siti Khalijah Daud: Kajian Perikanan di tempat-tempat rekreasi.

Aziz Arshad: Kajian Zooplankton dalam kolam/tasik rekreasi.

Hj. Abd. Rahim Ibrahim: Development of fish aggregating device. Cost and earning survey of fishing gears operated in the east coast of Peninsular Malaysia. Fish quality and its handling in the East Coast of Peninsular Malaysia.

Cheah, S.H. (1988) Semaian ikan lampam jawa dalam tangki BPC – IV.

Cheah, S.H. dan S.K. Daud (1988) Perkembangan lembaga, larva dan fri ikan lampam jawa.

Cheah, S.H., S.S. Shapor dan K.J. Ang (1988). Pembiakan aruhan ikan keli kayu dengan kelenjar pituitari mentah ikan Lee koh. Pembiakan aruhan ikan keli kayu dengan serbuk kelenjar pituitari ikan lee koh – I, II dan III.

Shapor, S.S., S.H. Cheah, P.T. Arumugam, dan K.J. Ang (1988). Semaian larva ikan keli kayu dengan makanan campuran telur ayam dan hampas ikan – I, II, III.

Cheah, S.H., S.S. Siraj dan K.J. Ang (1989). Semaian larva ikan keli kayu dengan makanan campuran telur ayam dan telur ikan – I.

Cheah, S.H. dan K.J. Ang (1989). Gerakbalas pasca larva, juvenil dan dewasa udang galah terhadap cahaya.

Cheah, S.H., S. Seroo, P.t. Arumugam, A.S. Mustafa Kamal dan M.N. Shamsuddin (1989). Semaian larva ikan Lee koh di dalam tangki BPC – 1.

Dr. Faizah Shahrom: Parasit Ikan Marin Malaysia dan kegunaannya sebagai petanda biologi.

Dr. Fatimah Yusof: Penyelidikan. Water quality in catfish culture ponds. Primary productivity

in lakes.

Khalid Samo: Fishing trial of stick-held dip net.

Dr. Law Ah Theem: Coastal oceanographic studies in Port Dickson. MPPKSN \$34,400.00. Impact study of the marine environment off an EMPI industrial plant in Kerteh, Terengganu (ESSO Funding).

Lokman Shamsudin: Coastal oceanographic studies in Port Dickson, Straits of Malacca. Studies on marine algae (Including other planktonic forms) of Peninsular Malaysia and its role to fishery.

Liew Hock Chark: Coastal oceanographic studies in Port Dickson, Straits of Malacca. The early recruitment of marine fishes in relation to sea conditions of Terengganu.

Dr. Mohd. Ibrahim Hj. Mohamad: 1. Image identification and classification of remotely sensed data of the coastal zone. 2. Development of offshore fishing gears (seine net) 3. Development of fish aggregating device. 4. ASEAN-Australia Cooperative Program on Marine Science (living resources):

- i) Coral reefs survey of Malaysian waters
- ii) Remote sensing study
- iii) Benthic community study

Mustafa Kamal, A.S., Siti Khalijah Daud and Aziz Arshad. Study of Benthic Community in Tasik Titiwangsa, Kuala Lumpur. An MPKSN project.

Mustafa Kamal, A.S., Siti Khalijah Daud and Aziz Arshad. A Creel Survey Study of Tasik Aman, Petaling Jaya. An MPKSN Project.

Mustafa Kamal, A.S., Siti Khalijah Daud and Aziz Arshad. A Creel survey study of Desa Kanching Fish Farm, Selangor. An MPKSN Project.

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#### SEMINAR YANG DIADAKAN DI FAKULTI

“Advances in Fisheries and Marine Sciences, FPSS/JICA Experienced” – Anjuran JICA/FPSS-UPM. 10 Mac, 1989.

“Studies of Mycobacterium sp. infection in Snakehead Fish (*Channa Striatus*)” oleh Temdoug Pangkachoonbon. 2 Jun, 1989.

“Virus Diseases of Fish in Western North America” oleh Prof. T. Yamamoto. 31 Mei, 1989.

“Feeding Ecology and some aspects of Water Quality of Lates Calcarifer Larvae” oleh Umar Salleh. 5 April, 1989.

“Characterization and Virulence of *Anomonas Hydrophila* for *Clarias* spp. and vaccination of the Host” oleh Hambali Supriyadi. 25 Februari, 1989.

“Keperluan Nitrogen dalam Pembajaan Kolam

Ikan oleh Dr. Fatimah Md. Yusof. 22 Februari, 1989.

“Fisheries of Bangladesh General view” oleh Md. Jahangir Alam. 15 Februari 1989.

“Bacteria Associated with Ikan Keli Larvae/fry” oleh Zulkifli bin Awang Besar. 11 Februari 1989.

“Role of the Microflora & Microfauna Community in the Modified Static ‘Green Water’ System for the Production of Udang Galah Juveniles” oleh Ng Chee Kiat. 21 Januari 1989.

“Nutrient leaching from micro-encapsulated Diet” oleh Aziz Arshad. 18 Januari, 1989.

“Biology and Fishery of threadfin (*Nemipteridae*)” oleh Dr. Haji Mohd. Zaki Mohd. Said. 11 Januari, 1989.

“Some aspects of Nutrition and Culture of *Mystus Nemurus*” oleh Mohd. Salim Khan. 21 Disember, 1988.

“The Management and Nutrition of Lampam Jawa, *Puntius gomonus*” oleh S. Pathmasothy. 14 Disember, 1988.

“Occupational Health Practices for University Lab Assistance” oleh Dr. Keith W. Bentley (WHO/PEPAS). 7 Disember, 1988.

“A Study on the proper construction and setting of Local Aggregating Devices (‘UNJAM’)” oleh Sakri bin Ibrahim. 5 November, 1988.

“Association of Primary Production and Recruitment in a Sub-Arctic Ecosystem” oleh Prof. Dr. Ole Mathisen. 12 Oktober, 1988.

“Use of Stable Isotope Ratio in productivity studies in freshwaters” oleh Prof. Dr. Ole Mathisen.

“Use of the ploroid palette-plus to produce instant slides from the Computer” oleh James Lee. 27 September, 1988.

“Lipid Metabolism in destalked prawn *Penaeus japonicus*” oleh Assoc. Prof. Dr. S. Teshima. 15 September, 1988.

“Peranan dan Kemudahan yang boleh diberikan oleh Malayan Banking Berhad terhadap para pelanggannya” oleh Hamzah bin Mohd. Haris. 14 September, 1988.

“Induced spawning and seed production of Baung – *Mystus nemurus* oleh Thalathiah Saidin. 14 Disember, 1988.

## SEMINAR/KURSUS/KONFERENSI

Dr. Abu Khair Mohd. Mohsin menghadiri Presented paper in seminar on Advances in Fisheries and Marine Sciences organised by FPSS/JICA, on 10 – 11th March 1989.

Menghadiri A hended Seminar on Sumber Perikanan Laut Dalam di Zon Ekonomi Eksklusif (ZEE) Malaysia, organised by Jabatan Perikanan Malaysia, Kuala Lumpur on May 20, 1989.

Aizam Zainal Abidin menghadiri Ensearch 3rd Environmental Impact Assessment EIA Workshop. Organised by Environmental management & Research Association of Malaysia. Holding Inn, Johor Baru, November 19, 1988.

Menghadiri Seminar Advances in Fisheries and Marine Science – the JICA/FPSS (UPM) Experience. Malacca Village Hotel, Malacca, Malaysia. March 10 – 11, 1989.

Menghadiri 12th MSAP Annual Conference – Modernization in Tropical Livestock and Poultry Production organised by the Malaysian Society of Animal Production, Genting Highlands, Pahang, Malaysia. March 29 – 31, 1989.

Dr. Ang Kok Jee membentang Kertaskerja di IFS Workshop on Fish Culture and Management Techniques and Nutrition di Universitas Brawijaya, Indonesia 14 – 18 November, 1988.

Membentang kertaskerja di Seminar in Advances in Fisheries and Marine Sciences – The JICA/FPSS Experiences. 10 – 11 March 1989, Malacca.

Membentang kertas teknikal di Konferensi 12th MSAP Annual Conference 1989 di Genting Highlands, Pahang, Malaysia. March 29 – 31, 1989.

Membentang kertas teknikal (2) di Second Asian Fisheries Forum, Tokyo, Japan pada 17 – 22 April, 1989.

Aziz Arshad menghadiri seminar kebangsaan projek ASEAN-Australia mengenai sumber-sumber hidupan persisiran pantai; diadakan pada 4 – 6 Januari, 1989.

Menghadiri First Regional Symposium. ASEAN-Australia Project II: Living Resources in Coastal Areas diadakan pada 31 Januari – 1 Februari 1989.

Menghadiri seminar Kebangsaan Advances in Fisheries and Marine Science – The JICA/FPSS Experiences, diadakan pada 10 – 11 March, 1989.

Menghadiri kursus pendek pengenalan kepada penggunaan pakej SPSS (Peringkat Universiti) diadakan pada 22 – 24 Ogos, 1988.

Menghadiri kursus pendek pengurusan perikanan (Peringkat universiti) diadakan pada 14 – 19 November, 1988.

Menghadiri kursus induksi pegawai UPM-89 (Peringkat universiti) di adakan pada 23 – 25 Mei, 1989.

Hj. Abdul Rahim Ibrahim telah menghadiri Kursus Penterjemahan Anjuran DBP, K.L. 22 – 27 Mac 1988, UPM, Serdang.

Menghadiri Seminar & Workshop TSS Model 320 Heave Compensator system Anjuran Ass. Ocean. Tech. Sdn. Bhd., TSS England. 20 Okt. 1988, K.L. dan P. Klang.

Menghadiri Expo Industri Laut Dalam anjuran BPM & Persatuan Nelayan Kuala Kedah. 28 Feb. 1989, Alor Star dan Kuala Kedah.

Menghadiri Kursus Pengembangan dan Khidmat Nasihat anjuran FPSS K. Terengganu dan PPPL UPM Serdang. 30 Nov. – 4. Dis. 1988, UPM Kuala Terengganu.

Cheah Sin Hock menghadiri Intensive prawn farming. 18 July 1988. Holiday Inn City Centre, Kuala Lumpur.

Menghadiri Kursus Pengembangan. 30 Nov. –

4 Dis., 1988. Pusat Perikanan dan Sains Samudera, Universiti Pertanian Malaysia, Kuala Terengganu.

Menghadiri Seminar Advances in Fisheries and marine Science – The JICA/FPSS (UPM) experience. 10 – 11 March 1989. Malacca Village Resort, Malacca.

Menghadiri Handling and processing: The selling point in Malaysian Fisheries. 27 – 28 Mac 1989. Park Avenue Hotel, Kuala Lumpur.

Menghadiri Modernization in tropical livestock and poultry production. 29 – 31 March 1989. Genting Highlands Hotel, Genting Highland, Pahang.

Chan Eng Heng menghadiri Research proposals on sea turtles. Paper prepared for Ibu Pejabat Perikanan, Cawangan Pengurusan dan Perlindungan, Kementerian Pertanian Malaysia. Universiti Pertanian Malaysia.

Menghadiri Budget proposals for Turtle Research Laboratory, National Survey of Sea Turtle Nesting Populations in Malaysia, Upgrading of the Turtle Information Centre and Training course on turtle Hatchery Techniques. Working Paper prepared for Ibu Pejabat Perikanan Malaysia, Cawangan Pengurusan dan Perlindungan Kementerian Pertanian Malaysia. Universiti Pertanian Malaysia.

Menghadiri Ceramah Biologi dan pemuliharaan penyu Belimbing. Ceramah diberi kepada pelajar-pelajar Sekolah Menengah Chung Hwa Wei Sin, Kuala Terengganu, 3hb. Mei 1988.

Menghadiri 'The biology, ecology and conservation of Malaysian sea turtles. Talk presented to the Malayan Nature society, Terengganu Branch, 8 February 1988'.

Menghadiri 'Living marine resources in the East Coast of West Malaysia and their possible responses to oil pollution. Paper presented at the Oil Spill Dispersant Workshop, Petronas, Complex, Kerteh, Terengganu, 6 March 1988'.

Menghadiri 'ECOPATH Model of a tropical shallow-water community in Malaysia. Paper presented at the Joint Oceanographic Assembly in Acapulco, Mexico, 23 – 31 August 1988'.

Menghadiri 'Turtle on the East Coast of Peninsular Malaysia: Natural history, nesting distribution population status, environmental concerns and their mitigation and conservation-oriented research. Paper written for ESSO Production Malaysia Inc. for an inhouse environmental impact assessment report. Universiti Pertanian Malaysia.

Menghadiri 'The ultrastructure of the eggshell of the leatherback turtle, *Dermochelys coriacea*. Paper presented at the Seminar on Advances in Fisheries and Marine Science – The JICA/FPSS Experience, at the Malacca Village Resort, 10 – 11 March, 1989.

Dr. Faizah Shaharom menghadiri 25th Annual Scientific Seminar. Malaysian Society of Parasitology and Tropical Medicine. 23 – 25 Februari, 1989.

Menghadiri Simposium Biologi Kebangsaan III. "Keseimbangan Penyelidikan Asas dan Gunaan dalam Biologi" Holiday Villa, Subang Jaya. 22 – 24 November, 1988.

Menghadiri 12th MSAP Annual Conference. Modernization Tropical Livestocks and Poultry Production. March 29 – 31, 1989. Genting Hotel, Pahang.

Menghadiri Third Asian Fish Health Network Meeting, Faculty of Fisheries and Marine Science, Universiti Pertanian Malaysia. 30th June – 4 Feb 1989.

Menghadiri seminar on Advances in Fisheries and Marine Sciences. The JICA/FPSS Experience 10 – 11th March, 1989. The Malacca Village Resort, Air Keroh, Melaka.

Dr. Fatimah Yusoff menghadiri Kursus 'Introduction to the Use of SAS-PC for Statistical Analysis'. (Peringkat Universiti). 13 – 15 Jun 1988. UPM.

Menghadiri Bengkel 'Environmental Impact Assessment'. (Peringkat Kebangsaan) 18 July 1988. Kuala Terengganu.

Menghadiri Bengkel "Teaching Strategies and Curriculum Development for Adult Learners". (peringkat Antarabangsa) 28th. Sept. – 12th Oct. 1988. Iloilo, Philippines.

- Menghadiri Seminar 'Aquarium Fish – A New Frontier'. (Peringkat Kebangsaan). 30th Oct. 1988. Johor Bahru.
- Menghadiri Seminar 'Advances in Fisheries and Marine Sciences – The JICA/FPSS (UPM) experience'. (Peringkat Kebangsaan). 10 – 11th March, Malacca.
- Menghadiri Seminar 'Handling and Processing; The selling point in Malaysian Fisheries'. (Peringkat Kebangsaan). 27 – 28 March 1989. Kuala Lumpur.
- Menghadiri Forum 'Fisheries Science and Communities; Partners in Development'. (Peringkat Antarabangsa). 17 – 22 April 1989. Second Asian Fisheries Forum, Tokyo.
- Menghadiri kursus pendek 'Fisheries Management', 14 – 19 November 1988. (Peringkat Kebangsaan), UPM.
- Dr. Law Ah Theem menghadiri seminar on The Advances in Fisheries and Marine Sciences. The JICA/FPSS (UPM) Experiences. 10th – 11th March, 1989. The Malacca Village Resort, Malacca.
- Menghadiri The Seond Asian Fisheries Forum, April 17 – 22, 1989, Tokyo, Japan.
- Liew Hock Chark Menghadiri 'ECOPATH Model of a Tropical Shallow-water Community in Malaysia. Paper presented at the Joint Oceanographic Assembly in Acapulco, Mexico, 23 to 31 August, 1988.
- Menghadiri 'Living Marine Resources in the East Coast of West Malaysia and Their Possible Responses to Oil Pollution. Paper presented at the Oil Spill Dispersant Workshop, Petronas Complex, Kerteh, Terengganu, 6 March 1988.
- Menghadiri 'A review on the effects of oil pollution on Sea Turtles. In 11th MSMS Annual Seminar on 26 March, 1988, Univ. Malay. Kuala Lumpur, Malaysia.
- Menghadiri 'Coastal Oceanographic Studies off Port Dickson. In 11th MSMS Annual Seminar on 26 March 1988, Univ. Malaya, Kuala Lumpur, Malaysia.
- Mustafa Kamal Abd. Satar menghadiri Kursus pendek mengenai Pengenalan kepada Komputer bagi Pegawai Kumpulan A dan B anuran UPM. UPM, Serdang. 23 – 26hb. Mei, 1989.
- Menghadiri Kursus Pendek mengenai penterjemahan anjuran DBP, UPM, Serdang. 22 – 27hb. Mac, 1989.
- Menghadiri dan membentang kertas kerja bengkel Third Asian Fish Health Network Meeting di UPM, Serdang 30hb. Januari hingga 5hb. Februari, 1989.
- Menghadiri seminar pengendalian dan pemrosesan. Aspek utama pemasaran perikanan di Malaysia di Park Avenue Hotel, Kuala Lumpur, 17 – 28hb. Mac, 1989.
- Mohd. Salleh Kamarudin menghadiri Seminar Advances in Fisheries and Marine Science – The JICA/FPSS Experience. March 10 – 11, 1989, Melaka.
- Menghadiri 12th MSAP Annual Conference. March 29 – 31, 1989. Genting Highlands.
- Menghadiri Stafac seminar. Februari 23, 1989. Subang Jaya.
- Dr. Mohd. Shariff Mohd. Din. Menghadiri dan membentangkan kertaskerja bertajuk "Some basic concepts on fish disease for Nutritionists" di Third Asian Fish Nutrition Network Meeting – Bangkok 6 – 10 June, 1988.
- Menghadiri dan membentangkan kertaskerja bertajuk "Comparative morphology of adult *Lernaea polymorpha* and *L. cyprinacea*" di The Second Asian Fisheries Forum, Tokyo 17 – 22 April, 1989.
- Menghadiri dan membentangkan kertaskerja bertajuk "Diseases of aquarium fishes and their treatment" di Seminar "Aquarium Fish – A New Frontier" – Johor Bahru 30 Oktober, 1988.
- Dr. Mohd. Nasir Saadon menghadiri 'Artificial coral reefs as fish aggregating devices and to enhance aquatic productivity in the water of South China Sea. Paper presented in the 2nd. Asean Science & Technology Week (30 Jan. – 4 Feb. 1989) Manila, Philippines. pp 15.

Menghadiri 'Water Circulation Pattern in the coastal water off Port Dickson. Paper presented in Seminar on Advances in Fisheries & Marine Sciences – The JICA/FPSS (UPM) Experience, 10th – 11th March, 1989, Malacca, Malaysia. pp 22.

Menghadiri 'A study on the Surface after Movements Due to Tides Off the Kuala Terengganu Coast. Paper presented in the National Workshop on Tides and Tidal Phenomena. 12-13 June, 1989. Hotel Pantai Primula, K. Terengganu, Malaysia. pp 20.

Dr. Phillip Arumugam menghadiri Australian Marine Science & Technology Mission – Seminar. Kuala Lumpur, 19 Jan. 1989.

Menghadiri 'Delayed initial feeding of *Clarias macrocephalus* (Gunther) larvae and their and their susceptibility to disease. Third Asian Fish Health Network Meeting. 29th Jan – 4 Feb. 1989. Serdang, Malaysia.

Menghadiri Stomach contents of *Puntius gonionotus* dry reared in the "Bio-physico-chemical hatchery tank system" in Malaysia. In: Advances in Fisheries and Marine Sciences – The JICA/FPSS (UPM) Experience. 10 – 11 March, 1989, Malacca, Malaysia. 13 p.

Menghadiri A preliminary study on the use of the Biophysicochemical hatchery tank system for larval rearing of lampam jawa (*Puntius gonionotus*). In: Advances in Fisheries and Marine Sciences – the JICA/FPSS (UPM) Experience. 10 – 11 March, 1989, Malacca, Malaysia. 10 p.

Menghadiri seminar Some common phytoplankters in the "Bio-physico-chemical hatchery tank system", Malaysia. In: Advances in Fisheries and Marine Sciences – the JICA/FPSS (UPM) Experience. 10 – 11 March, 1989, Malacca, Malaysia. 7 p.

Menghadiri Handling and processing: the selling point in Malaysian Fisheries, 27 – 28 Mac, 1989. Park Avenue Hotel, Kuala Lumpur.

Menghadiri 18th Regional Training program on development Strategies and Planning for farmers' communities. August 1 – 12th. PPPL. UPM, Serdang, Selangor.

Siti Khalijah Daud menghadiri kursus pengenalan kepada penggunaan SAS-PC untuk analisis statistik di Pusat Komputer, UPM, 13 – 15 Jun, 1988 (Peserta).

Menghadiri Workshop on the Appropriate Applied Mariculture and Rural Fisheries, at Silliman University, Dumaguete City, Philippines, 15 – 22 Oct. 1988 (Peserta).

Menghadiri kursus pendek Pengurusan Perikanan di FPSS, UPM, 14 – 19 Nov. 1988 (Peserta).

Menghadiri Seminar Penulis Kebangsaan Pengajian tinggi, anjuran Bahagian Buku Pelajaran, Dewan Bahasa dan Pustaka, di Pusat Dagangan Dunia Putra, Kuala Lumpur, 26 Januari, 1989. (Peserta).

Menghadiri 'Seminar on Advances in Fisheries and Marine Science – JICA/FPSS (UPM) experience, 10 – 11 Mac, 1989 di Malacca Village Resort, Air Keroh, Melaka (Pembentang).

Menghadiri Forum Dasar Ekonomi Baru: Penyelesaian selepas 1990 di PPPL, UPM, Sedang, 21 Mac, 1989 (Peserta).

Menghadiri MSAP Annual Conference on "Modernization in Tropical Livestock and Poultry Production and Aquafarming", 29 – 31 Mac, 1989, di Genting Highland, Pahang (Pembentang).

Sakri Ibrahim Menghadiri Kursus Pengembangan dan Khidmat Nasihat. 30 Nov. – 4 Dis., 1988.

Menghadiri Konferensi 'Southeast Asian Tuna Conference 22 – 25 August, 1988, Primula Hotel.

Menghadiri Kursus Kepimpinan Dalam Keluarga. 2 – 6 Julai, 1988, Kemaman, Terengganu.

Menghadiri Kursus Pengurusan Perikanan. 14 – 19 Nov. 1988, UPM Serdang.

Menghadiri Seminar Pembangunan Nelayan. 15 – 17 Nov. 1988, Malacca Village Resort.

Menghadiri Seminar on Advances in fisheries and Marine Sciences. 10 – 12 March, 1989, Air Keroh, Melaka.

Menghadiri seminar Some common zooplankters in the "Bio-physico-chemical hatchery tank system", Malaysia. In: Advances in Fisheries and Marine Science – the JICA/FPSS (UPM) Experience. 10 – 11 March, 1989, Malacca, Malaysia. 9 p.

Menghadiri seminar Preliminary observations on the growth and survival of walking catfish, *Clarias batrachus* (Linnaeus) fry feed on prepared diets. In: Advances in Fisheries and Marine Sciences – the JICA/FPSS (UPM) Experience. 10 – 11 March, 1989, Malacca, Malaysia. 7 p.

Peserta, Pengendalian & Pemesrosesan: Aspek utama Pemasaran perikanan di Malaysia. Kuala Lumpur. 27 – 28hb. Mac, 1989.

Peserta, Fish Pathology Course. Third Asian Fish Health Network Meeting. 29 Jan – 4 Feb. 1989 Serdang, Malaysia.

Dr. Patimah Ismail menghadiri Seminar on Advances in Fisheries and Marine Sciences – The JICA/FPSS (UPM) Experience. 10 – 11th. March 1989, Air Keroh Melaka.

Menghadiri seminar on Transmission Electron Microscopy. Institute Pengajian Tinggi, Universiti Malaya Kuala Lumpur. 26th. May 1989.

Menghadiri The 2nd Asian Fisheries Forum – Partners In Development. Tokyo, Japan. 17 – 22th. April, 1989.

Rosnan Yaacob menghadiri Kursus Kepimpinan Keluarga. 2 – 6 Julai, 1988, Pupuk Semangat, Kemaman, Terengganu.

Menghadiri Seminar on Advances in Fisheries and Marine Science. The JICA/FPSS Experience. 10 – 11th March 1989, Air Keroh, Malacca, Malaysia.

Menghadiri Kursus Induksi Pegawai 1989. 23 – 25 Mei 1989, Serdang, Selangor.

Siti Shapor H. Siraj menghadiri Seminar Advance in Fisheries and Marine Science – The JICA/FPSS Experience. March 10 – 11, 1989, Melaka.

## FAKULTI SAINS MAKANAN DAN BITEKNOLOGI

### DEKAN

Prof. Dr. Mohamed Mahyuddin Mohd. Dahan D.V.M. (Mymensingh), M.Sc (Mississippi State), Ph. D (Kentucky).

### KAKITANGAN

#### Jumlah kakitangan

Jabatan	Kategori			
	A	B	C	D
Pejabat Dekan	3	—	4	7
Jabatan Sains Makanan	13	—	10	5
Jabatan Teknologi Makanan	13	—	9	5
Jabatan Bioteknologi	12	—	5	4
Jumlah	41	—	28	21
Jumlah Besar	90			

### Perlantikan Baru dan Kenaikan Pangkat

Prof. Madya Dr. Zaliha Christine Alang dilantik sebagai Ketua Jabatan Bioteknologi mulai 1 Mei 1989.

### Cuti Belajar

Seramai 2 orang pensyarah dan 4 orang tutor sedang mengikuti kursus Ph.D dan 14 orang pensyarah dan tutor sedang mengikuti program master.

### Tamat Cuti Belajar

5 orang tutor, telah menamatkan kursus Ph. D-nya dalam bidang teknologi Susu.

### Jumlah Pelajar

Program	Bilangan Pelajar
Ph. D.	4
Master	16

Bachelor Sains & Teknologi Makanan	113
Bachelor Sains Bioteknologi	72
Jumlah	215

### Pemeriksa Luar

Prof. Dr. Mary Earle daripada University of Massey New Zealand, telah dilantik sebagai pemeriksa dan penilai luar bagi pelajar-pelajar ijazah program BSTM sesi 1989/90 di fakulti ini.

### PENYELIDIKAN

Dr. Abdullah Abu Bakar. Pengeluaran dan pembungkusan ikan salai, Fish Protamine as food preservative, Survivability of giant freshwater prawn in a 'waterless' system.

Dr. Yu Sween Yean. Production and utilization of fish protein hydrolysate from freshwater fish. Studies on minced fish flesh. Improvement

of the production of fish crackers ('keropok'). Fish Noodles. Fish Biscuits.

Puan Jamilah Bakar. Role of cathepsins in fish spoilage.

Puan Asiah M. Zain. Development of infant food. Effect of local spices on survivality of insects in milled rice grains. Studies on non-dairy creamer. Water activity and dehydration of food.

Puan Salmah Yusof. Enzymic clarification of fruit juices. Cell wall metabolism in ripening fruits.

Dr. Asbi Ali. Processing of guava juice – kinetics of pectinesterase; processing parameters. Heat and Mass Transfer in Food Processing. Computer Modeling of Food Processing Operations.

Dr. Yaakob Che Man. Flavour improvement in soy-based food products.

Dr. Yusop Abu. Development of yoghurt based products.

Dzulkifly Mat Hashim. Pengeluaran hasil ikan kering dan salai. Kajian lepas tuai buah-buahan tropika. Rekabentuk pempasteur madu lebah.

Badlishah Sham Baharin. Kinetic study of cocoa bean fermentation. Treatment of POME by a packed bed hybrid reactor.

Dr. Suhaila Mohamed. Buah-buahan kering. Pengekstrakan pektin dari kulit pisang. Protein terhidrolisis dari kekacang. Melanjutkan hayat simpanan buah durian. Kajian ke atas sebatian-sebatian aktif dalam petai. Penghasilan dan penjernihan jus jambu batu menggunakan enzim.

Encik Mohamad Nordin bin Abdul Karim. Tinjauan pengambilan makanan golongan nelayan di Pantai Timur Semenanjung. Kajian lepastuai buah ciku. Kesan lemak ke atas komposisi tubuh.

Dr. Mohd. Nasir Azudin. Chemical and bioconversion of local underutilised starches. Quality characteristic of chinese wet noodles. Daftar Komposisi Makanan Malaysia.

Dr. Gulam Rusul Rahmat Ali. Mikrobiologi penapaian koko. Ciri-ciri mikroorganisma yang menghasilkan histamina dalam makanan laut. Teknologi lepas tuai buah-buahan. Ciri-ciri *Aeromons hydrophilla*.

Puan Fatimah Abu Bakar. Nitrate dan nitrite dalam ulaman. Mikroflora ikan dan hasil laut, rempah dan buah-buahan.

Dr. Jinap Selamat. Kajian pengeluaran perisa melalui proses bioteknologi. Cocoa bean fermentation. Solid substrate fermentation.

Dr. Mohamed Ismail Abdul Karim. Production of citric acid from sago starch and pineapple waste juice. Penapaian biji koko untuk meningkatkan mutu kualitinya. Optimising and improving the quality of traditional fish sauce fermentation. Teknologi penapaian.

Puan Zaiton Hassan. Food fermentation.

Puan Azizah Haji Abdul Hamid. Kesan pengambilan berlebihan asid askorbik. Kesan rawatan lemak yang berbeza. Nitrate dan nitrite dalam ulaman.

Puan Azizah Osman. Postharvest physiology and handling of fruits.

Abdullah Sipat: Xylanase and its role in the breakdown of hemicellulose products. The of RFLP studies in plant science. Enzymes and protein in *Hevea* latex.

Arbakariya Ariff: Penghasilan asid sitrik secara penapaian. Penghasilan sirap fructosa tinggi dari kanji sago. Penapaian biji koko.

Alang, Zaliha Christine: *In vitro* studies on the sago palm. *In vitro* regeneration of selected underexploited tropical species.

Alang, Zaliha Christine and Gan Yik Yuen: Isonzyme and RFLP studies on sago palm.

Badlishah Sham Baharin: Kinetics of cocoa bean fermentation. Treatment of POME by anaerobic biofilter reactor.

Baharuddin Abdul Ghani: Pemencilan bakteria termofilik yang berpotensi menghasilkan enzim hidrolitik. Amilase dari bakteria bagi penukar-

an kanji. Rumen microbiology. Starch bioconversion.

Gan Yik Yuen: Mitochondrial DNA RFLPs in buffalo. mtDNA RFLPs in Malaysian and Malaysian aborigines. Genetic polymorphisms and phylogenetic studies on honey bees.

Lee Kong Hung: Studies on stability and function of enzymes in an immobilized state. Role of enzymes during cocoa fermentation.

## PENERBITAN

Salmah Yusof, Suhaila Mohamed and Abdullah Abu Bakar. 1988. Use of response surface methodology in the development of guava concentrate, *J. Sci. Food Agric.* 43(2).

Salmah Yusof, Suhaila Mohamed and Abdullah Abu Bakar. 1988. Effect of fruit maturity on the quality and acceptability of guava puree. *J. Food Chem.* 30 : 45 – 58.

Jamilah B., Mohd. Ali H. and Azhar A. 1988. The storage stability of coconut milk powder. *J. Sci. Food Agri.* 43(1) : 95 – 100.

Abdullah Abu Bakar, J.O. Reagan, Vanguters, D.R. Campion and M.F. Miller. 1988. Effects of chilling method on the sensory, chemical and cooking characteristics of ground beef patties. *J. Food Sci.* 53 (6) : 16 – 18.

Asbi Ali, L.S. Wei and M.P. Steinberg. 1988. Kinetics of inactivation of soybean lipoxygenase by acid. Proceedings of the ASEAN Food Conference '88. Bangkok, Thailand, October 24 – 26, 1988.

Yaakob Che Man, L.S. Wei and Nelson, A.I. 1988. Inactivation of lipoxygenase on whole soybeans by pH adjustment. Proceedings of the ASEAN Food Conference '88. Bangkok, Thailand, October 24 – 26, 1988.

Asiah, M. Z. and Norliah, A. 1988. Biochemical characteristics of limes and limes products. Proceeding of the ASEAN Food Conference '88, Bangkok, Thailand. Oktober 24 – 26, 1988.

Asiah, M.Z. 1988. Pengeluaran pelbagai hasilan dari nenas. Proceedings of the National Seminar

on Pineapple Industry, Desaru, Hohor, Malaysia, 14 – 15 Nov. 1988.

Asiah, M.Z. and Ainual, A. 1989. Proximate composition and firmness of grey oyster mushroom (*Pleurotus saju-gajo*) during storage. Proceedings of the 4th Scientific Conference, Nutrition Society of Malaysia. Kuala Lumpur, March 18, 1989.

Asiah, M.Z., M. Fauzi and Puziah, A. 1988. Quality of raw and processed ginger. Proceedings of the ASEAN Food Conference '88. Bangkok, Thailand, Oct., 24 – 26, 1988.

Yu, S.Y. and Tan, L.K. 1988. Application of protein hydrolysate in fish crackers (keropok). Proceedings of the ASEAN Food Conference '88. Bangkok, Thailand, October 24 – 26, 1988.

Yu, S.Y. and Tan, L.K. 1988. Fish Noodles. *Infofish International* 1/88, 40.

Yu, S.Y. 1988. Application of technology to the processing of fishery products in Malaysia. Proceedings of the Conference on the Role of Women in the Development of Science and Technology in the 3rd World, Trieste, Italy, 3 – 7 Oct., 1988.

Yu, S.Y. 1988. Improvement of dried fish chips ('keropok') from freshwater fish in Malaysia. *Agricultural and Biological Research Priorities in Asia*. Ed. M.M. Singh. p. 221 – 226.

Yu, S.Y. 1988. Technology for 'keropok' (Fish Cracker) production technology for rural development. Eds : Radhakrishna, S., Singh, M.M. and John, C.K. 167 – 177.

Yu, S.Y. and Tan, L.K. 1988. Fish Noodles. Proceedings of the ASEAN Food Conference '88. Bangkok, 24 – 26 Oct., 1988.

Yu, S.Y. 1989. Product development from freshwater fish. Proceedings of the Seminar Handling and Processing: The Selling Point in Malaysia Fisheries. 27 – 28 March 1989, K.L., LKIM/Malaysian Fisheries Society.

Yu., Y. 1989. Acceptability of Fish Cake prepared from *A. nobilis* and *Nemipterus sp.* Pro-

ceedings of the Second Asian Fisheries Forum, Tokyo, 17 – 22 April, 1989.

Yu, S.Y. and Lee, S.Y. 1989. Incorporation of wer fish mince into noodles. Proceedings the Second Asian Fisheries Forum, Tokyo, 17 – 22 April, 1989.

Abdullah Abu Bakar, Reagan, J.O. and Carpenter, J.A. 1988. Effect of added water, sodium erythorbate and storage time on the functional properties of prerigor beef preblend. Proceedings of the ASEAN Food Conference '88. Bangkok, Thailand, October 24 – 26, 1988.

Badlishah Sham Baharin. 1988. Primary treatment of POME by anaerobic biofilter reactor. Proceedings of 4th Symposium of chemical engineers. Kuala Lumpur, 14 – 15 June, 1988.

Dzulkifly Mat Hashim, Russly A. Rahman, Asiah M. Zain. 1988. Production and acceptability of food flavour powders. Proceedings of the ASEAN Food Conference '88. Bangkok, Thailand, October 24 – 26, 1988.

Abdullah A. Bakar, Dzulkifly Mat Hashim and M. Hotta. 1989. Some considerations in the production of smoked fish. Proceedings of the Seminar on 'Handling and processing' : the selling point in Malaysian fisheries. Kuala Lumpur, March 27 – 28 1989.

Suhaila Mohamed & Eshah Othman (1988). Effect of packaging and modified atmosphere on the shelf life of fresh rambutans. **PERTANIK**A (in press).

M.A. Augustin, Azizah Osman, Mohd. Nasir Azudin & Suhaila Mohamed (1988). Physico-chemical changes in musk melons (*Cucumis melon*, L.) during storage. **PERTANIK**A (in press).

Suhaila Mohamed and Norlia Abdullah (1988). Formation of protein film from chickpea dhal. **PERTANIK**A. (in press).

Salmah Yusof, Suhaila Moahamed and Abdullah Abu Bakar (1988). Effect of fruit maturity on the quality and acceptability of guava puree. **Food Chemistry and International Journal**, (in press).

Suhaila Mohamed, Zainab Johan and Jamilah Bakar (1988). Chickpea, mungbean, cowpea and groundnuts as a source of beancurds. **International Journal of Food Science and Technology**. (in press).

Suhaila Mohamed, Norakiah Abdullah and Mangayar Karasi Muthu (1988). The physical properties of keropok (Fried crisps) in relation to the amylopectin content of the starch flours. **Journal of the Sci. of Food and Agriculture**. (in press).

Suhaila Mohamed, Norakiah Abdullah and Mangawar Karasi Muthu (1988). Physical properties of keropok made from various starch flours. Presented at the Seminar on Advances in Food Research in Malaysia – II, UPM.

Rusul, G. and E. H. Marth, 1988. Food Additives and plant components control growth and aflatoxin production by toxigenic aspergilli: A review. *Mycopathologia* 101 : 13 – 23.

Rusul, G. & E.H. Marth. 1988. Growth and Aflatoxin Production by *Aspergillus parasiticus* in a medium at different pH values and with or without pimaricin. *Zeitschrift fur Lebensmittel-Untersuchung und-Forschung* (diterima).

Rusul, G. 1988. Effect of Organic Acids on Aflatoxin Production by *Aspergillus parasiticus* at different pH values. Presented at Seminar on Advances in Food Research in Malaysia II, Fakulti Sains Makanan & Bioteknologi, UPM, 3 – 4 Februari 1988.

Kader, J., Omar, O. dan Abu Bakar, F. (1988) : Pemencilan kulat selulolisis dari tanah. Dalam biologi untuk Industri (Tamin N.M. et al., (ed) ). Proceeding Simposium Biologi Kebangsaan ke 2, 12 – 14 Nov. 1985. Penerbit UKM, Bangi.

#### **SEMINAR YANG DIHADIRI OLEH PEGAWAI FAKULTI**

Zaliha Christine Alang telah menganjurkan "Kursus Latihan Asas Teknik Amali Budaya Tisu Tumbuhan" yang dihadiri oleh lapan peserta (pembantu makmal, U.P.M.), 20hb Jun – 1hb Julai 1988, di UPM.

Zaliha Christine Alang telah menghadiri "Inter-

national Congress on Genetic Manipulation in Plant Breeding" anjuran EUCARPIA, di Elsinor, Denmark, 11hb. – 16hb. September 1988, sebagai peserta.

Zaliha Christine Alang telah menghadiri 2nd ASEAN Science and Technology Week, Manila, Philippines, 31st Jan – 5th Feb. Pembentang kertas kerja.

Zaliha Christine Alang telah menghadiri Symposium on Sago Starch Utilization, anjuran Ministry of Industrial Development, Sarawak, 28th March – 5th April 1989. Pembentang bersama dua kertas kerja.

Zaliha Christine Alang telah menghadiri Symposium Kebangsaan Biologi Molekular di U.M. 27 – 29hb. Mei 1988, sebagai peserta.

Zaliha Christine Alang, Gan Yik Yuan telah menghadiri Bengkel Protein di RRIM, Sg. Buloh, anjuran the British Council, Ministry of Science, Technology and Environment Malaysia and RRIM, 10 – 16hb Mei 1989, sebagai peserta.

Gan Yk Yuen telah menghadiri GIAM VIII and INCABB Conference on Global Impacts of Applied Microbiology, Biology and Biotechnology di Hong Kong, Ogos 1 – 5hb 1988, sebagai peserta.

Gan Yik Yuen telah menghadiri Conference on the Role of Women in the Scientific and Technological Development of the Third World, di Trieste, Italy 3 – 7hb Oktober 1988, sebagai peserta.

Gan Yik Yuen telah menghadiri 4th Asia-Pacific Conference and Workshop on Electron Microscopy di Bangkok, Thailand, 26 – 30hb Julai 1988, sebagai peserta.

Gan Yik Yuen telah menghadiri Simposium Kebangsaan Biologi Molekular di U.M. 27 – 29hb Mei 1988, sebagai pembentang kertas kerja.

Gan Yik Yuen telah menghadiri International Symposium on Buffalo Genotypes for Small Farms in Asia, di K.L., 15 – 18hb Mei, 1989, sebagai peserta.

Arbakariya Ariff telah menghadiri UNESCO Regional Workshop on Biotechnology, Seoul, Korea, 25 – 30hb Julai 1988, sebagai peserta.

Arbakariya Ariff telah menghadiri short course on Solid Liquid Separation, di UTM, 5 – 6hb September, 1988, sebagai peserta.

Badlishah Sham Baharin telah menghadiri short course on Solid Liquid Separation, di UTM, 5 – 6hb September 1988, sebagai peserta.

Abdullah Sipat telah menghadiri 7th Symposium of the Federation of Asian and Oceanic Biochemists, di K.L. 28 – 30hb November 1988, sebagai ahli J/K penganjur dan pembentang kertas kerja.

Abdullah Sipat telah menghadiri 2nd JSPC-VCC Seminar, December 6 – 7th di Kyoto, Japan, sebagai pembentang kertas kerja.

Baharuddin Abdul Ghani. Ahli Jawatankuasa Advances in Food Research II. UPM. Feb. 1988.

Pembentang kertaskerja Malaysian Microbiology Symposium, di Kuala Lumpur pada Ogos 1988.

Pembentang kertas kerja Federation of Asian and Oceanic Biochemists Symposium, di Kuala Lumpur pada 7hb. Nov. 1988.

Menghadiri Kursus Recombinant Technology, University of Tsukuba, Gene Experiment Center, Nov. 1988.

Peserta Second Asean Science and Technology Week Manila Participant, yang dianjurkan oleh ASEAN FTRD pada Feb. 1989.

Dr. Gulam Rusul Rahmat Ali, Dr. Jinap Selamat, Dr. Suhaila Mohamed, Pn. Fatimah Abu Bakar, Dr. Mohd. Nasir Azudin, Pn. Zaiton Hassan, En. Mohd. Nordin Abd. Karim, menghadiri Seminar on Advances in Food Research in Malaysia – II, UPM, 3 – 4 Februari 1988.

Dr. Ghulam n Rusul Rahmat Ali menghadiri, Dr. Ghulam Rusul Rahmat Ali menghadiri, Regional Workshop on Biotechnology – Microbial Technology with Application to the

Food Industry, Sydney, Australia, 5 – 16 February 1989.

Dr. Ghulam Rusul Rahmat Ali, Dr. Jinap Selamat, Dr. Mohd. Ismail Abd. Karim, menghadiri First National Biotechnology Seminar, Penang, 1 – 3 Jun 1989.

Dr. Ghulam Rasul Rahmat Ali, menghadiri Asia-Pacific Workshop on Rapid Methods and Automation in Microbiology, Singapore, 3 – 9 Jun 1989.

Dr. Ghulam Rasul Rahmat Ali menghadiri Seminar perikanan, UPM dan Seminar Kebersihan Makanan, UPM.

Dr. Jinap Selamat, menghadiri 1st Malaysian International Conference on Essential Oil, UKM/MARDI, 5 – 7 December, 1988.

Dr. Jinap Selamat menghadiri Masalah Halal/Haram Dalam Makanan Anjuran Jabatan Agama Islam Negeri Selangor, Kuala Lumpur 20 December, 1988.

Dr. Jinap Selamat menghadiri Bengkel Pemrosesan dan Penggredan Koko di MARDI, 19 – 20 Julai 1988.

Dr. Jinap Selamat menghadiri Konvensyen Australian Institute of Food Science and Technology, Perth, Australia, 30 April – 5 May 1989.

Dr. Suhaila Mohamed menghadiri Seminar wanita dan Kesihatan, Ipoh, Perak, 27 Mac 1988.

Dr. Suhaila Mohamed menghadiri Simposium Keenam Berkenaan Tumbuh-tumbuhan Berubuh dan Rempah-rempah, Bandung, Indonesia, 23 – 28 Januari 1989.

Dr. Shaila Mohamed menghadiri Bengkel Asas Bagi Teknik-teknik Biologi Molekul I : Bengkel Protein, Kuala Lumpur, 5 – 12 April 1989.

Abdul Karim menghadiri Indo-Pacific Fishery Commission working Party on Fish Technology and Marketing, Bangkok, 19 – 22 April 1988.

Dr. Mohd Nasir Azudin, En. Mohd. Nordin Abdul Karim menghadiri Seminar Daftar Kom-

posisi Makanan Malaysia, Kuala Lumpur, 10 – 11 Oktober 1988.

Dr. Mohd. Nasir Azudin, En. Mohd. Nordin Abdul Karim menghadiri International Symposium on 'Food for the 90's', University of Reading, 3 – 4 April 1989.

Puan Hajah Zaiton Hassan menghadiri Eight International Conference on Global Impact of Applied Microbiology & INCABB – Int. conf. on Applied Biology & Biotechnology, Hong Kong, 1 – 5 August 1988.

Encik Mohamad Nordin Abdul Karim menghadiri Seminar Perlindungan Pengguna : Aspek Kesihatan dan Makanan, UPM, 26 Mac 1988.

Encik Mohamad Nordin Abdul Karim menghadiri 3rd Scientific Conference of the Nutrition Society of Malaysia, Kuala Lumpur, 19 Mac 1988.

Encik Mohamad Nordin Abdul Kari menghadiri Training Workshop on the Uses of Irradiation to Reduce Postharvest Food Losses, Bhabha Atomic Research Centre, Bombay, 13 – 14 February 1989.

Puan Fatimah Abu Bakar, Dr. Suhaila Mohamed, En Mohd. Nordin Abd. Karim menghadiri Asean Food Conference '88, Bangkok, 24 – 26 Oktober 1988.

Dr. Mohamed Ismail Abdul Karim menghadiri UNESCO Regional Workshop on 'Biotechnology in the Utilization of Solid Wastes' The Chinese University of Hong Kong, Shatin, N.T. Hong Kong. 26 July – 5 Aug. 1988.

Dr. Mohamed Ismail Abdul Karim menghadiri The Federation of Asian and Oceanic Biochemists (FAOB) Symposium. 28 – 30 Nov. 1988, Kuala Lumpur.

Dr. Mohamed Ismail Abdul Karim menghadiri Second ASEAN Science and Technology Week Congress. Westin Philippine Plaza, Manila, Philippine. 30 Jan. – 4 Feb. 1989.

## PUSAT PENGEMBANGAN DAN PENDIDIKAN LANJUTAN

### PENGARAH

Prof. Madya Dr. Rahim Md. Sail, Dip. Agric (Malaya), B.S. (California - Davis) M.S., Ph.D. (Wisconsin - Madison).

### KAKITANGAN

Jabatan	Kategori			
	A	B	C	D
Pejabat Pengarah	2	—	4	10
Jabatan Pendidikan Pengembangan	23	—	—	1
Jabatan Komunikasi Pembangunan	17	—	9	9
Unit Perkhidmatan Pengembangan	1	13	—	1
Unit Pendidikan Lanjutan	—	1	3	22
Jumlah	42	15	16	43
<b>JUMLAH BESAR</b>	116			

### Perlantikan Baru

Seorang pensyarah dan seorang pegawai Seni-reka telah dilantik.

### Cuti Belajar

Seramai sebelas orang pegawai akademik mengikuti kursus di dalam dan luar negeri (Ph.d — 8, Master — 3).

### PERKARA AKADEMIK

#### Ijazah Lanjutan

Seramai 73 orang pelajar mengikuti ijazah Lanjutan di Pusat ini (Ph.D — 17 orang, Master — 16 orang).

#### Pemeriksa Luar

Seramai lima orang pemeriksa luar telah berkhidmat untuk Pusat ini iaitu:-

Prof. Madya Dr. Syed Arabi Idid, Jabatan Ko-

munikasi, Universiti Kebangsaan Malaysia, Bangi.

Dr. Ramli b. Mohamed, Pusat Pengajian Kemanusiaan, Universiti Sains Malaysia, Pulau Pinang.

Prof. Nora Cruz Quebral, Institute of Development Communication College of Agriculture, Universiti of The Philippines at Los Banos, Philippines.

Prof. Irene Beavers, Department of Family and Consumer Sciences Education. College of Family and Consumer Sciences, Iowa State University, USA.

Prof. Obdulia F. Sison, Department of Agricultural Education, College of Agriculture, Universiti of the Philippines at Los Banos.

### PENYELIDIKAN

Prof. Madya Dr. Rahim Md. Sail, Prof. Dr. Sulaiman Mohd. Yassin, Dr. Ibrahim Mamat,

Puan Maimunah Ismail, Turiman Suandi, Prof. Madya Khalip Abdul Raffar, Dr. Ungku Chulan Ungku Mohsin, Encik Nordin Kardi, Encik Kusairi Mohd. Noh, Encik Musa Abu Hassan, Encik Khairuddin Idris, Puan Jamilah Othman: Kajian Pengesanan Graduan UPM.

Prod. Dr. Sulaiman Mohd Yassin, Prof. Madya Dr. Rahim Md. Sail, Dr. Napsiah Mahfoz: Pengukuran Kecemerlangan Akademik UPM.

Dr. Abu Daud Silong, Encik Ezhar Tamam dan Puan Jamilah Othman: Status dan Keberkesanan Program Siswazah Menganggur.

Dr. Napsiah Mahfoz, Dr. Azizah Abd. Rahman, Dr. Kamariah Abu Bakar: Kepimpinan Wanita di Malaysia.

Dr. Haji Mohd Fadzillah Kamsah, Prof. Dr. Sulaiman Mohd Yassin, Dr. Napsiah Mahfoz dan Bahaman Abu Samah: Mekanisma koordinasi Aktiviti-aktiviti Pengembangan Agensi-agensi Pembangunan di Malaysia.

Encik Ahmad Fuad Muhammad, Dr. Haji Saidin Teh: Khidmat Pengembangan UPM.

Prof. Madya Dr. Mohd Nasir Ismail, Encik Musa Abu Hassan dan Encik Abdul Rashid Md. Ali: Proses Pemindahan Teknologi: Satu Kajian Kes di UPM.

Prof. Madya Dr. Haji Azimi Haji Hamzah, Encik Turiman Suandi dan Encik Shamsuddin Ahmad: Prinsip dan Amalan Agensi-agensi Pembangunan dalam Pembangunan Belia Tani.

## **PENERBITAN**

Dr. Ibrahim Mamat, Prof. Madya Dr. Haji Mohd Fadzillah Kamsah, Dr. Napsiah Mahfoz dan Encik Turiman Suandi (1988) "Impact at KADA Development Programme on the Behaviors and Local Community Prosperity." Diterbitkan oleh Pusat Pengembangan dan Pendidikan Lanjutan.

Prof. Dr. Sulaiman Haji Mohd Yassin dan Encik Ahmad Fuad Muhammad (1988) "Action Research on Basis Needs and Environment." (tidak diterbitkan).

Prof. Dr. Sulaiman Haji Mohd Yassin dan Prof. Madya Dr. Rahim Md. Sail (August 1988) "The

Impact of IDRC – Supported Projects on UPM" (published).

Prof. Madya Dr. Mohd Nasir Ismail, Prof. Madya Dr. Alang Perang Abdul Rahman Zainuddin, Encik Bahaman Abu Samah dan Encik Abdul Rashid Mohd Ali (August 1988). "A Study on the Effectiveness of Pemaju Masyarakat Pekebun Kecil RISDA" (tidak diterbitkan).

Dr. Cecilia Ng Choon Sim (1988) "Impact of Technology on the Status of Rural Women in Tanjung Karang" Article to appear in Haleh Afsan (ed.), Women and Development Myths, Longman Press, London, entitled "Women and Rice Production in West Malaysia."

**UNIVERSITI PERTANIAN MALAYSIA  
KAMPUS BINTULU**

**PENGARAH KAMPUS**

Prof. Madya Dr. Ibrahim bin Mohd. Yusof P.B.S., K.M.N., Dip. Agric. (Malaya) M.S. (Florida), Ph.D (Louisiana State).

**KAKITANGAN**

Bahagian	Kategori			
	A	B	C	D
Pentadbiran	5	2	12	47
Kewangan	2	2	8	3
Jumlah	7	4	20	50
Jumlah Besar				81

**Perlantikan Baru**

Seorang Penolong Pendaftar dan seorang Juru analisa Sistem telah dilantik.

**PUSAT PENGAJIAN SAINS GUNAAN**

**DEKAN**

Dr. Jamal bin Talib Dip. Agric. (Malaya), M.Sc. (Florida), Ph.D (Louisiana State)

**KAKITANGAN**

Jabatan/Bahagian	Kategori			
	A	B	C	D
Pejabat Dekan	1	—	1	2
Jabatan Pertanian				
Agronomi dan Kulturakebunan	8	—	1	1
Pengajian Pembangunan Manusia	1	—	1	—
Perlindungan Tumbuhan	3	—	2	1
Sains Tanah	2	—	1	1
Sains Perternakan	1	—	—	—

Sains Perikanan	1	—	—	—
Kejuruteraan	2	—	2	2
Jabatan Perhutanan	12	1	5	8
Jumlah	30	1	13	15
Jumlah Besar	59			

### Perlantikan Baru

Seramai dua orang Pensyarah, empat orang Tutor, seorang Pemelihara Hutan, seorang Kerani (Sambilan) dan dua orang Pekerja Am (Sambilan) telah dilantik.

### Perletakan Jawatan

Seorang Penolong Pemelihara Hutan, seorang Kerani dan dua orang Penjaga Stor telah meletak jawatan.

### Cuti Belajar

Seramai 6 orang Pensyarah dan seorang Tutor sedang melanjutkan pelajaran di dalam dan luar Negeri.

### Perkara-Perkara Akademik

Program	Tengah	Akhir	Tahun 3 *
Diploma Pertanian	185	124	64
Diploma Perhutanan	75	50	44
Jumlah	260	174	108
Jumlah Besar	542		

\* Pelajar-pelajar yang mengikuti Kurikulum Lama.

### PENYELIDIKAN

#### Projek Jangkapendek

Abas bin Said: "Kajian Permintaan Rekreasi di Taman Negara Bako".

Tonga Gabriel Noweg: "Sumbangan Ekonomi Perhutanan Kepada Masyarakat Desa di Sarawak".

Jugah Kadir: "Kajian Tentang Status Penyakit Mati Rosot Acacia Magium Wild di Sarawak".

#### Projek Jangkapanjang

Khamurudin Mohd. Noor: "Kajian Lokasi Industri berasaskan Kayu di Sarawak".

Ismail bin Hashim: "Optimising Operating Efficiency and Productivity In The Sawmilling Industry".

Hamsawi bin Sani: "Teknik Pengeluaran Stok Tanaman".

Abdul Rahman bin Md. Derus: "Productivity of Free Harvesting Practice In The Hill Forest of Peninsular Malaysia".

### PENERBITAN

Mohd. Zaki Hamzah (1989): "Analisa ekonomi ke atas penggunaan baja untuk *Acacia mangium* di ladang hutan SAFODA.

Kertas Seminar Perhutanan, Jabatan Perhutanan Universiti Pertanian Malaysia Kampus Bintulu, Januari 1989.

Khamurudin Mohd. Noor dan Awang Noor Abd. Ghani (1988). "Location Factors from Wood Manufacturers Point of View: A case study in Kuching, Sarawak.

Kertas Seminar Perhutanan No. 4 Jabatan Perhutanan Universiti Pertanian Malaysia Kampus Bintulu, Januari 1989.

### SEMINAR/BENKEL/KURSUS YANG DI-ANJURKAN

Kursus Menanam Cendawan untuk peserta-peserta luar telah diadakan pada 23 Ogos, 1988.

Kursus Pendek Fero – Cement untuk pelajar-pelajar Diploma Perhutanan telah diadakan pada 1 September, 1988.

Kursus Cendawan untuk peserta-peserta dari Kampung Pengembangan pada 10 November, 1988.

Seminar bertajuk "Metodologi Latihan" oleh Encik Abas bin Said untuk pegawai dan kakitangan Universiti Pertanian Malaysia Kampus

Bintulu diadakan pada 13 Ogos, 1988.

Seminar Perhutanan bertajuk "Potential of Suppressive Soil as Biological Control of Soil Borne Disease" oleh Encik Jugah bin Kadir untuk pegawai Universiti Pertanian Malaysia Kampus Bintulu, dan agensi luar diadakan pada 24 Ogos, 1988.

Seminar Perhutanan bertajuk "Management of Mangrove Forest: Problems and Possible Solutions" oleh Encik Mohd. Zaki bin Hamzah untuk pegawai Universiti Pertanian Malaysia Kampus Bintulu, dan agensi luar diadakan pada 11 November, 1988.

Seminar Perhutanan bertajuk "Small Scale Timber Extraction From State Land Forest" oleh Encik Tonga Noweg untuk pegawai Universiti Pertanian Malaysia Kampus Bintulu dan agensi luar diadakan pada 15 Februari, 1989.

Seminar Perhutanan bertajuk "Production Study of Tractor Skidding in Jengka Pahang" untuk pegawai Universiti Pertanian Malaysia Kampus Bintulu dan agensi luar diadakan pada 26 Mei, 1989.

### PUSAT PENGAJIAN SAINS ASASI

#### DEKAN

Senin bin Hassan B.Sc. (Malaya), M.Tech. (Brun.) Fizik Semikonduktor & Tek

#### KAKITANGAN

Bahagian	Kategori			
	A	B	C	D
Pejabat Dekan	1	—	1	3
Matematik	4	—	1	—
Fizik	4	—	—	3
Kimia	4	—	2	1
Biologi	4	—	2	2
Jumlah	17	0	6	9
Jumlah Besar	32			

## Perlantikan Baru

Seramai seorang Pensyarah, seorang Tutor, empat orang Pelayan Makmal (Sambilan) dan seorang Jurutaip (Sambilan) telah dilantik.

## Perletakan Jawatan

Seorang Pelayan Makmal telah meletak jawatan.

## Cuti Belajar

Seramai lima orang Pensyarah sedang mengikuti kursus Ph.D di luar negeri.

## PERKARA AKADEMIK

### Program Pendahuluan

Seramai 70 orang pelajar mengikuti Program Pendahuluan untuk sesi 1988/89.

## PENYELIDIKAN

### Kopli bin Bujang, Dr

Kopli bin Bujang, Dr. Lau Seng, Haji Omar bin Haji Pozan: Studies on Nutritional Values of Common Local Preserved Sea Foods in Sarawak.

Awangku Abdul Rahman bin Pengiran Yusuf, Senin bin Hassan: Penggunaan Laser untuk mengesan kecacatan di dalam sesuatu sampel.

Gwendoline Ee Cheng Lian, Dr. Ibrahim bin Mohd. Yusof, Dr. Lau Seng: Crystallization of

the Sugar from the Nipah Fruiticans (Nipah Palm).

Tuan Haji Omar bin Haji Pozan: Taburan mikroorganisma pada masa Pemprosesan Lada Putih dan Lada Hitam.

Mohd. Razali bin Abdul Kadir, Senin bin Hamdan, Abang Abdul Rahim bin Abang Ali: Kajian atas bahan-bahan dan prinsip simenfero.

Mohd. Rizam bin Abu Bakar: Stability of Runge-Kutta method. Solving 2nd Order ODE Directly.

## PENERBITAN

Gwendoline Ee Cheng Lian, Dr. Ibrahim bin Mohd. Yusof, Dr. Lau Seng, Dr. Asmah binti Haji Yahya (1988). "Preliminary Studies of The Sugars From The Nipah Palm", Research Report No. 1, Institut Sains Asasi, Universiti Pertanian Malaysia Kampus Bintulu, Oktober 1988.

Kopli bin Bujang (1988). "The Cellulase system of *Clostridium thermocellum* with special reference to an endoglucanase component. Proceeding to the 11th Malaysian Microbiology Symposium, Kuala Lumpur 22 – 23 August, 1988.

Sinin bin Hamdan (1989). "Ferrocement Technology for Domestic Water Tank". Proceeding: Seminar on Concrete Engineering and Technology at Subang Merlin 12 – 14 Jun, 1989.

## PUSAT PENGAJIAN SAINS SOSIAL DAN PENGURUSAN

## DEKAN

Encik Dimbab Ngidang, Dip. Agric. (UPM), B.Sc. Agric (UPM), M.Sc (Iowa State).

## KAKITANGAN

Jabatan	Kategori			
	A	B	C	D
Pejabat Dekan	1	—	—	1
Pengurusan Perniagaan	2	—	—	—

Pengembangan, Komunikasi dan Sains Sosial	8	2	1	6
Jumlah	10	2	1	7
Jumlah Besar	20			

#### Perlantikan Baru

Seorang Tutor telah dilantik.

#### Cuti Belajar

Seramai dua orang Pensyarah, seorang Tutor dan seorang Gurubahasa mengikuti kursus di dalam dan luar negeri, (Ph.D 2, Master 2).

#### PERKARA AKADEMIK

Jumlah pelajar mengikuti program; 76 orang.

#### PENYELIDIKAN

Dimbab Ngidang, Peter Songan, Spencer Empading Sanggin, Jegak Uli dan Tonga Noweg: Kajian Sosio-Ekonomi Pekebun-Pekebun Lada di Daerah Serian.

Peter Songan: Kajian Mengenai Penggunaan Racun Perosak di Bahagian Pertama Sarawak.

#### SEMINAR YANG DIADAKAN DI INSTITUT

Semua seminar di bawah diadakan untuk peringkat Kampus Bintulu. Peserta-peserta adalah terdiri daripada kakitangan Institut dan lain-lain kakitangan Universiti di Kampus Bintulu.

**Pengurusan Dari Sudut Asas** disampaikan oleh Encik Rahim bin Abdullah pada 1 Oktober, 1988.

**Planning For Effective Management** disampaikan oleh Encik Douglas Alau Tayan pada 15 Oktober, 1988.

**Mengelola Untuk Prestasi Kerja Yang Lebih Berkesan** disampaikan oleh Encik Jegak Uli pada 5 November, 1988.

**Arahan Sebagai Fungsi Kuasa dan Kepimpinan** disampaikan oleh Cik Aishah Edris pada 12 November, 1988.

**Kawalan Sebuah Organisasi** disampaikan oleh Encik Rahim Abdullah pada 12 November, 1988.

**Penyelarasan di Dalam Pengurusan** disampaikan oleh Encik Peter Songan pada 25 November, 1988.

**Motivation** disampaikan oleh Encik Spencer Empading Sanggin pada 5 Disember, 1988.

### PERPUSTAKAAN KAMPUS BINTULU

#### PENDAHULUAN

Dalam Sesi 1988/1989, Perpustakaan telah menumpukan kepada aspek-aspek mempertingkatkan perolehan bahan-bahan Perpustakaan bagi mengukuhkan lagi koleksi Perpustakaan disamping mempertingkatkan penggunaan bahan-bahan Perpustakaan oleh pengguna-pengguna.

Kursus Pengenalan Menggunakan Perpustakaan untuk Penuntut Baru UPM Kampus Bintulu telah diadakan pada 20 – 27 Julai 1988.

#### KAKITANGAN

KATEGORI				
A	B	C	D	Jumlah
2	–	2	15	19

#### Perlantikan Baru

Seramai dua (2) orang Pelayan Perpustakaan (Sambilan) telah dilantik.

#### Perletakan Jawatan

Seorang Pelayan Perpustakaan (Sambilan) telah meletak jawatan.

## KEMAJUAN KOLEKSI PERPUSTAKAAN

Di akhir bulan Mei 1989, Koleksi Perpustakaan telah meningkat menjadi 43,569 naskhah. Ini merupakan pertambahan sebanyak 3,671 naskhah dari jumlah tahun 1987/1988. Jumlah judul terbitan bersiri pula meningkat dari 520 di

akhir tahun 1987/1988 kepada 619 di akhir tahun 1988/1989. Koleksi Bahan Pandang Dengar telah meningkat dari 681 di akhir tahun 1987/1988 kepada 896 di akhir tahun 1988/1989. Perbandingan kedudukan koleksi antara tahun 1987/1988 dan 1988/1989 adalah seperti berikut:-

Koleksi	Pada Akhir 1987/88	Pada Akhir 1988/89	Tambahan Bahan Dalam 1988/89
Buku (Naskhah)	38,302	41,973	3,671
Jurnal Berjilid	1,308	1,308	—
Abstrak & Indeks Berjilid	288	288	—
<b>JUMLAH</b>	<b>39,898</b>	<b>43,569</b>	<b>3,671</b>
Terbitan Bersiri (Judul)			
Langganan	350	327	22
Hadiah	215	292	77
<b>JUMLAH</b>	<b>520</b>	<b>619</b>	<b>99</b>
Bahan Pandang Dengar (Unit)			
Filem	51	51	—
Filem Gelung	7	7	—
Filem Relung	13	13	—
Filem Slaid	38	95	57
Mikrofis	83	100	17
Mikrofilem	51	51	—
Carta	31	18	5
Peta Topografi	211	221	10
Kit	30	30	—
Kaset	130	133	3
Pita Audio	27	78	51
Pita Video	27	99	72
<b>JUMLAH</b>	<b>681</b>	<b>896</b>	<b>215</b>

## PENGUNAAN PERKHIDMATAN PERPUSTAKAAN

### Keahlian

Di akhir tahun akademik 1988/89 ahli berdaftar adalah seperti berikut:-

Kumpulan	Bilangan 1987/88	Bilangan 1988/89
Pegawai Akademik UPMKB	59	91
Pegawai AM UPMKB	121	123

Ahli Luar	15	12
Penuntut	574	699
<b>JUMLAH</b>	<b>769</b>	<b>925</b>

## PERKEMBANGAN PENGGUNAAN KOLEKSI PERPUSTAKAAN

### Pinjaman dan Pemulangan

Di bawah diperturunkan butir-butir lanjut mengenai pinjaman dan pemulangan bahan-bahan Perpustakaan.

	1987/88	1988/89
Pinjaman Buku dan Jurnal Berjilid	12,179	14,587
Pinjaman Buku Berbintik Merah	1,491	4,648
Pinjaman Risalah	269	799
Pinjaman Ahli Luar	51	102
Pinjaman Bahan Pandang Dengar	46	83
Pemulangan Buku dan Jurnal Berjilid	10,260	13,792
Bilangan Buku-Buku Dipanggil Semula	95	84
Bilangan Tempatan	254	277

### Pinjaman Antara Perpustakaan

Kedudukan Pinjaman Antara Perpustakaan secara perbandingan adalah seperti berikut:-

	1987/88	1988/89
Permohonan Dari Dalam	96	222
Dipenuhi	46	114
Kadar Kejayaan	49.9%	51.4%
Permohonan Dari Luar	3	20
Dipenuhi	3	19
Kadar Kejayaan	100%	95%

## BAHAGIAN LADANG KAMPUS BINTULU

### PENYELARAS

Encik Ahmad bin Katang

### PENDAHULUAN

Bahagian Ladang, Universiti Pertanian Malaysia, Kampus Bintulu memainkan peranan yang aktif bagi Sesi 1988/1989 berkaitan dengan pelaksanaan pembangunan Ladang dan pelaksanaan pembangunan Ladang dan pelaksanaan aktiviti-aktiviti akademik.

Secara amnya, unit-unit tanaman dan ternakan berikut telah dan sedang dibangunkan.

Kawasan/Unit	Luas Kawasan (Hek.)
Akuakultur	1
Buah-buahan	104
Cendawan	—
Getah	48
Hortikultur & Landskap	130
Kelapa	2
Kelapa Sawit	106
Ladangkongsi	10
Sayur-sayuran	2
Tanaman Minuman	8
Tanaman Musiman	15
Tanaman Rempahan	15
Ternakan Bukan Ruminan	2
Ternakan Ruminan & Pastura	100
Ulat Sutera & Lebah Madu	6
Infrastruktur Ladang & Lain-lain Kawasan	650

#### KAKITANGAN

	Kategori				Jumlah
	A	B	C	D	
	3	6	12	55	76

#### Perlantikan Baru

Seramai seorang Sambilan dan 2 Pekerja Am telah dilantik.

#### Perletakan Jawatan

2 orang Pekerja Am telah meletak jawatan, sementara 1 Pekerjaan Am telah diberhentikan.

#### Cuti Tanpa Gaji

Seorang Penolong Pegawai Veterinar sedang bercuti tanpa gaji.

## BAHAGIAN LADANG

### Pengarah

Prof. Madya Sheikh Awadz Sheikh Abdullah A.I.S.P., Dip. Agric. (Malaya), B.S. (Louisiana State), M.S., Ph.D (Arkansas)

### Kakitangan

Cawangan	Kategori			
	A	B	C	D
Pejabat Pengarah Ladang	8	2	17	27
Tanaman Hortikultur	6	3	15	99
Tanaman Perladangan	4	3	15	24
Pengurusan Perosak	1	1	1	1
Ternakan	2	5	16	89
Kejuruteraan Ladang	5	2	11	175
Jumlah	26	16	75	415
Jumlah Besar	532			

### Perlantikan Baru

Dua orang Pemandu Jentera dan seorang Mandor telah dilantik.

### Perletakan Jawatan

Seorang Pembantu Teknik telah meletakkan jawatan dan seorang Pembantu Makmal Penyelidikan Luar telah bersara.

### Cuti Belajar

Seramai 3 orang Pensyarah sedang mengikuti kursus Ph. D di dalam dan di luar negeri. Seorang Pegawai Pertanian sedang mengikuti program Sarjana secara sambilan di UPM.

### Perkara Akademik

Bahagian Ladang hanya menawarkan kursus-kursus amali kepada program-program tertentu. Pada Sesi Disember 1988/89 telah ditawarkan kursus baru, Ladang kongsi Perikanan (LLK 203) kepada Program Diploma Perikanan tahun dua.

### PENYELIDIKAN

#### Penyelidikan bersama:

Dr. Sheikh Awadz, Nor Ain H.M.R. & LLN: Kajian Tanaman Anggur – Percubaan Tanaman Anggur di Ladang (field planting) di Bukit Temiang, Perlis.

Dr. Nikmat M, Dr. Idris Abdol dan Dr. Azizah: Feasibility of using fast Growing Timber species for reclamation of exmining areas (1987 – 1992).

Nor Ain H.M.R., Dr. Nordin, Norezan, Mustapa dan lain-lain: Tanaman Hiasan dan Landskap – Visual Analysis and perception.

### Penyelidikan Sendiri

Kamarudzaman Aribi;

- i) Perolehan Data Asas Sifat Fizikal dan Mekanikal Buah Koko MPKSN.
- ii) Reka Bentuk Alat Penyembur Pokok Koko MPKSN.
- iii) Keperluan Air Bagi Tanaman Durian MPKSN.

Nor Ain Hj. M. Rejab: Tanaman Ubatan, Rempahan dan Tanaman Berkhasiat di Taman Rekreasi Petaling Jaya dan Kuala Lumpur (Taman Aman Jaya, Titiwangsa dan Tun Abdul Razak).

Yaacub Salleh: Teras Penyelidikan Fakulti: Automation in Manufacturing Industries.

### PENERBITAN

Nor Ain Hj. M. Rejab (Mac 1988 – Sept. 1989) – Ruangan Taman ke Taman – Perlandskap kawasan rumah, Majalah Wanita (keluaran bulanan).

S. Omar, Y.M. Khanif, A. Idris and W.A. Razak 1989; The Use of DRIS and ot

S. Omar, Y.M. Khanif, A. Idris and W.A. Razak 1989; The Use of DRIS and other diagnosis systems in interpretation of foliar analysis for sweetcorn. National Seminar in Soil Management for food and fruit Crop Production, Kuala Lumpur.

Kamarudzaman Aribi dan Yaacub Salleh: 'Cost of Using Power Reaper: Malaysian Experience; Agricultural Mechanism in Asia, Africa and Latin America, Bil. 19 No. 3, Summer 1988 (pg. 53 & 54).

Kamarudzaman Aribi: 'Alat Penyembur Racun Serangga bagi Tanaman Koko di Malaysia' Kertas Kerja di Seminar Pendidikan Kejuruteraan Pertanian 16 – 17 November 1988 UPM.

Kamarudzaman Aribi, Mohd. Nizan Jaafar, Noorul Huda Abd. Hamid dan Muhamad Salleh: Manual Kerja Ladang (LKL 251); Manual Mekanisasi Perladangan (1988).

Osman Mohd. Tahir (1988): Tanaman Hiasan dan Landskap (LKL 213) – Manual Kerja Ladang Landskap (1988).

### SEMINAR/BENGGKEL/KURSUS

Menganjurkan Seminar Bulanan Bahagian Ladang sebanyak 4 kali (Jun 1988 – Jun 1989); Tajuk:

- i) 'Etika Kerja Menurut Perspektif Islam' oleh Dr. Hassan Hj. Mohd. Ali dari Biro Tata Negara JPM (17 Sept. 1988).
- ii) 'Perindustrian Koko di Malaysia Kini' oleh Encik Jamadun Bahari dari Bahagian Koko/Kelapa MARDI Telok Intan (22 Oktober 1988).
- iii) 'Konsep Muhasabah dan Mujahadah Menurut Islam' oleh Dr. Abd. Hamid Hj. Ahmad dari Pusat Islam (17 Disember 1988).
- iv) 'Kegunaan Tumbuhan Ubatan Dalam Perubatan Tradisional' oleh Dr. Abd. Latif Mohammad, Jabatan Botani UKM (25 Mac 1989).

Pada 13 – 18 Jun 1988 telah diadakan Bengkel Asas Hortikultur Landskap Ke IV yang dihadiri oleh 20 orang peserta.

Kursus Pertanian untuk 18 orang bakal-bakal Guru Besar dari Pulau Maldives telah dikendalikan oleh Bahagian Ladang pada 26 Oktober – 9 November 1988.

Kursus Dalam Perkhidmatan 'Kaedah Mengajar' untuk Pegawai Ladang dari Kategori C dan D telah diadakan pada 1 dan 2 Februari 1989 di Pejabat Ladang.

## PERPUSTAKAAN

### Ketua Pustakawan

Syed Salim Aghá, B.Sc., (Mdr.) A.C.A. (Lond.)

### KAKITANGAN

Jumlah Kakitangan:

Bahagian	Kategori			
	A	B	C	D
Pentadbiran	4	—	6	13
Perolehan	3	—	12	4
Katalog	9	—	5	3
Perkhidmatan Pembaca	4	—	4	34
Penerangan & Perkhidmatan Lanjutan	9	—	3	4
Sokongan	3	—	2	16
Sistem & Penyelidikan	2	—	1	1
Jumlah	34	—	33	75
Jumlah Besar	141			

### Perlantikan Baru

Seramai 2 orang pustakawan dan seorang pembantu perpustakaan telah dilantik sebagai pekerja sambilan.

### Tamat Perkhidmatan

Seorang pelayan perpustakaan dan seorang pencuci (sementara) telah ditamatkan perkhidmatan.

### Cuti Belajar

Seorang penyunting sedang mengikuti kursus M. Phil. dalam bidang "Publishing Studies" di luar negeri.

### PENERBITAN

Ibrahim Kassim (1988). "Peranan Belia Dalam Konteks Mewujudkan Budaya Membaca Di Kalangan Pelajar", kertas kerja di Hari Guru, 8hb. Julai 1988, Kuala Lumpur.

Syed Salim Agha (1988). "Accessing Resource Sharing Activities In Malaysia", kertas kerja di PPM/LAS Joint Congress 1988 – Reassessing Resource Sharing: Meeting the Challenges of the Economic Recession, 16 – 18hb. Ogos, 1988, Kuala Lumpur.

Hafizah Hassan (1989). "Pusat Maklumat Serantau Mengenai Pengurusan dan Penggunaan Sisa" Unipertama Jilid II Bil. 2, Februari 1989, m.s. 8.

Ibrahim Kassim (1989). "Pengkomputeran Dan Kesannya Terhadap Persekitaran", kertas kerja di **Seminar Penyediaan Ke Arah Pengkomputeran Perpustakaan**, 17hb. Mac 1989, Kuala Lumpur.

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#### **SEMINAR/BENGGEL/KURSUS**

Pérsidangan Serantau IAALD (International Association of Agricultural Librarians and Documentalists) diadakan pada 21hb. hingga 24hb. November 1988.

## PUSAT KOMPUTER

### PENGARAH

En. Mohd. Isa Mansor, Dip. Eng. (Brighton),  
B.Sc. (Hons) (New Castle Upon Tyne), M.Sc.  
(Hull).

### Perlantikan Baru

Seramai 4 orang Juruanalisa Sistem, 1 orang  
Operator Komputer dan 1 orang Operator  
Mesin Prosesan Data telah dilantik.

### KAKITANGAN

Jumlah Kakitangan

Kategori	Bilangan
Kategori A	14
Kategori B	19
Kategori C	16
Kategori D	23
Jumlah	72

### SEMINAR/BENGGKEL/KURSUS

Kursus Lanjutan Pengenalan Komputer Pegawai  
Kategori A dan B pada 6 dan 9hb. Jun 1988.

Kursus SAS-PC diadakan pada 13 dan 15hb.  
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Kursus Pengenalan Komputer WYSE untuk  
kolej-kolej diadakan pada 30/1/89 dan 1/2/89.

Kursus MAC II diadakan pada 20 – 22/2/89.

## AKTIVITI MENGIKUT OBJEK SEBAGAI

### Penyata Perbelanjaan Pusat Komputer Berakhir 31hb. Disember 1988

OBJEK SEBAGAI	Peruntukan Tahun 1988	Perbelanjaan Sebenar 1988
<b>EMOLUMEN</b>		
11000 Gaji dan Upahan	589,000	569,000
12000 Elaun Tetap	58,000	58,000
13000 Sumbangan Berkaun Untuk Kakitangan	71,000	71,000
14000 Elaun lebih masa	3,000	3,000
Jumlah 1000	721,000	721,000
<b>Perkhidmatan &amp; Bekalan</b>		
21000 Perbelanjaan Perjalanan dan Sara hidup	17,000	9,966.16
22000 Pengangkutan Barang-Barang	3,000	1,900.40
23000 Perhubungan & Utiliti	12,000	5,861.46
24000 Sewaan	161,000	148,557.00
25000 Bahan-Bahan Makanan & Minuman	5,000	27.60
26000 Bekalan Bahan Mentah dan Bahan-Bahan Untuk Penyelenggaraan dan Pembaikan	18,000	7,520.75
27000 Bekalan dan Bahan-Bahan lain	124,500	133,799.20

28000	Penyelenggaraan dan Pembaikan Kecil yang dibeli	500,000	412,050.55
29000	Perkhidmatan Iktis dan Perkhidmatan lain yang dibeli dan hospitaliti	60,000	42,676.85
Jumlah Kecil 2000		900,500	762 359.97
<b>OBJEK SEBAGAI</b>		<b>Peruntukan Tahun 1988</b>	<b>Perbelanjaan Sebenar 1988</b>
Aset			
35000	Harta Modal Harta Model yang lain	300,000	1,532,952.06
Jumlah Kecil 3000		300,000	1,532,952.06
<b>JUMLAH BESAR</b>		<b>1,921.500</b>	<b>3,016,312.03</b>

