

## Disease Conditions in Farm and Smallholder Buffaloes of Serdang, Malaysia.

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### ABSTRAK

*Penganalisan rekod menunjukkan bahawa tiada terdapat perbezaan yang bermakna atas bilangan penyakit yang dilihat pada kerbau kepunyaan penternak kecil dengan kerbau kepunyaan ladang Universiti Pertanian Malaysia (UPM); begitu juga di antara anak kerbau dengan kerbau dewasa. Akan tetapi, terdapat perbezaan yang bermakna bagi jenis penyakit yang dilaporkan di antara kerbau kepunyaan penternak kecil dengan kerbau ladang UPM. Perbezaan ini mungkin berkaitan dengan jenis pengurusan atas kerbau-kerbau tersebut.*

### ABSTRACT

*Analysis of records revealed that there were no significant differences in the number of disease conditions between buffaloes of the smallholders and Universiti Pertanian Malaysia (UPM) farm, and between the calves and adult buffaloes of both groups. Significant differences were, however, observed on the type of disease conditions involved. The differences were probably associated with the system of management.*

### INTRODUCTION

Water buffaloes are among the most important domestic ruminants in Asia that provide draft power, milk and meat. They are of two major types: the swamp buffaloes that wallow only in stagnant water or swamps and provide draft power and meat to the countries extending from Assam to China; and the river buffaloes that provide mainly milk to the countries extending from India to the Mediterranean and Egypt (Jainudeen, 1983).

With the world buffalo population of about 150 million (Jainudeen, 1983), studies on the diseases of buffaloes are still not as extensive as of cattle although several workers have made some observations on the cause of mortality in buffalo calves (Sharma *et al.*, 1975; Bali *et al.*, 1979), on the specific disease of buffaloes particularly haemorrhagic septicaemia (De Alwis, 1981; Hira-

mune and De Alwis, 1982) and on buffalo organ condemnations in slaughter houses (Tham and Sheikh-Omar, 1981; Yap *et al.*, 1983). Similarly in Malaysia, diseases of buffaloes attract less attention probably because no serious disease outbreaks occur in this species of ruminants (Jainudeen, 1983). This paper reports on some disease problems encountered in buffaloes of UPM farm and several smallholders in and around Serdang, Selangor, Malaysia.

### MATERIALS AND METHODS

#### *Animal*

The animal involved was the domestic water buffaloes of different types, ages and sexes. They belonged to either the UPM buffalo farm (113 buffaloes) which were mainly the swamp type, or the smallholders (114 buffaloes) of mainly the

river type; and were divided into two major groups according to Bali *et al.* (1979): the calves which were under one-year old and the remaining adults of more than one-year old.

#### Data

Case records of the Ambulatory Clinic from June 1980 to February 1987 and post mortem records from January 1975 to February 1987 belonging to the Faculty of Veterinary Medicine and Animal Science, Universiti Pertanian Malaysia which records the treatments and diagnosis of buffalo problems in and around Serdang, were analysed. A total of 172 cases involving 227 buffaloes were reviewed.

#### UPM Buffalo Farm

The history and management system of this farm have been described elsewhere (Jainudeen, 1983). The farm was established in 1972 on approximately 80 hectares of pasture consisting of Guinea (*Panicum maximum*), Star (*Cynodon plectostachyus*), Setaria spp., Signal (*Brachiaria decumbens*) and Napier (*Pennisetum purpureum*) grasses.

The herd, which reached its maximum capacity in 1980 with mainly swamp type of buffaloes, was maintained in a rotational grazing system with a stocking rate of 2 adults/ha. No supplementary concentrate feed was given but trace mineral blocks were provided. Calves below 6 months were dewormed monthly and weaned at 6 to 7 months old whereas those above 6 months of age were immunized annually against haemorrhagic septicaemia (Jainudeen, 1983).

#### Smallholders

One hundred and fourteen buffaloes belonging to 10 smallholders were involved in this study. Most of the buffaloes were the river type kept for their milk. Milking was carried out by hand.

The animals were maintained in a semi-intensive system where all animals were left out grazing on native grasses by the roadside during the day time and were kept in simple sheds during the night. Several farmers provided additional concentrate feed to the pregnant and milking female buffaloes.

#### Statistical Analysis

The number and type of disease conditions in the

UPM buffaloes were compared with the smallholder buffaloes and the significant differences were assessed by the t-test.

## RESULTS

A total of 227 buffaloes were involved in this study; 115 of the buffaloes were calves of less than one-year old and the remaining 112 were adults of more than one year old. Since some of the buffaloes had more than one problem, a total of 295 disease conditions were recorded.

#### Disease Conditions in UPM Farm

During the period from 1975 to 1987, a total of 153 disease conditions were observed in the 115 UPM buffaloes. Sixty-four (41.8%) of the conditions were observed in the 58 buffalo calves whereas the remaining 89 (58.2%) conditions involved the 55 adult buffaloes. The calves in UPM farm showed a significantly less number of problems than those of the adults ( $p < 0.05$ ).

The disease conditions observed in UPM calves are summarised in Table 1. The major conditions were pneumonia (19%), diarrhoea (12.5%), emaciation (11%), aborted calves (7.8%), peritonitis (7.8%), wounds (6.3%) and dehydration (6.3%). Most of the pneumonia cases involved the presence of foreign materials in the respiratory tract and were diagnosed either as aspiration pneumonia (33.3%) or asphyxiation (17%). Four of the 8 diarrhoea cases were due to either salmonellosis (2 cases) or coccidiosis (2 cases).

Table 1 also summarises the disease conditions observed in the UPM adult buffaloes. The most common disease conditions were diarrhoea (12.4%), emaciation (11.2%), wounds (8%), haemorrhagic septicaemia (8%) and peritonitis (5.6%). Thirty per cent of the diarrhoea cases were due to endoparasitism and 50% of the wounds were maggot wounds.

#### Disease Conditions in Smallholder Buffaloes

A total of 114 smallholder buffaloes were examined during the period from 1975 to 1987 giving a total of 142 disease conditions. Fifty-seven of the buffaloes were calves whereas the other 57 were adults with 65 and 77 disease conditions recorded for the two respective groups. The difference in the number of disease conditions between calves and adult buffaloes belonging to

TABLE 1  
Disease conditions in the Universiti Pertanian Malaysia buffaloes

Condition	Calves		Adults	
	Number	Per cent	Number	Per cent
Recumbency and General Weakness	2	3.1	3	3.3
Emaciation	7	10.9	10	11.2
Wounds	4	6.3	7	7.9
Diarrhoea	8	12.5	11	12.4
Lameness	1	1.6	2	2.2
Pneumonia	12	18.8	4	4.5
Pulmonary Congestion and Oedema	3	4.7	9	10.1
Dehydration	4	6.3	0	0.0
Peritonitis	5	7.7	5	5.6
Haemorrhagic Septicaemia	0	0.0	7	7.9
Trypanosomiasis	0	0.0	4	4.5
Pyrexia and Anorexia	0	0.0	5	5.6
Miscellaneous	18*	28.1	22 #	24.8
TOTAL	64	100.0	89	100.0

\*includes broken jaw (1), autolysis (1), aborted foetus (5), phalangitis (1), tonsillitis (1), lymphadenitis (1), septicaemia (3), hernia (1), hepatitis (1), ventricular defect (1), dermatitis (1) and brain haemorrhage (1).

# includes conjunctivitis (2), horns penetrating the cheek (2), nephritis (1), lice infestation (1), autolysis (4), pericarditis and endocarditis (3) lingual ulcers (1), no diagnosis (6), *Eleophora poeli* infestation (1) and vaginitis (1).

the smallholders was not significant ( $p > 0.05$ ).

Table 2 shows the disease conditions in the buffalo calves belonging to the smallholders. Diarrhoea (54%) was the major problem. It was significantly higher ( $p < 0.05$ ) than those recorded for the UPM buffalo calves, and the adult buffaloes of both the UPM farm and smallholders. Seventeen per cent of the diarrhoea cases were due to coccidiosis. Recumbency and general weakness made up of about 14% of the disease conditions in smallholder calves. Wounds, 50% of which were moggot wounds; and dermatitis, 33% of which were due to external parasite, each contributed about 9.2% of the total disease conditions.

In adult smallholder buffaloes, anorexia (23.4%), wounds (20%), lameness (10.4%), diarrhoea (10.4%) and emaciation (10.4%) were the

major problems (Table 2). Forty per cent of the wounds were slash wounds. Abscess in the sole was frequently (38%) observed in cases of lameness of smallholder buffaloes. Twenty-five per cent of diarrhoea cases were diagnosed as shooting diarrhoea compared with only 9% in UPM buffaloes. Liver flukes were observed in two (2.6%) buffaloes but were completely absent in the UPM farm.

#### DISCUSSION

The data described here reveal the insignificance ( $p > 0.05$ ) of farm and smallholder system of management on the frequency of disease problems in buffaloes, but show significant difference ( $p < 0.05$ ) on the type of disease problems between the two systems. Diarrhoea was one of the major

TABLE 2  
Disease conditions in smallholder buffaloes

Condition	Calves		Adults	
	Number	Per cent	Number	Per cent
Diarrhoea	35	53.9	8	10.4
Lameness	2	3.1	8	10.4
Emaciation	3	4.6	8	10.4
Dermatitis	6	9.2	3	3.9
Wounds	6	9.2	15	19.5
Recumbency and General Weakness	9	13.9	0	0.0
Anorexia	0	0.0	18	23.4
Miscellaneous	4*	6.1	17 #	22.0
TOTAL	65	100.0	77	100.0

\*includes peritonitis (1), septicaemia (1), pneumonia (1) and dehydration (1).

# includes meningitis (2), septicaemia (1), bovine malignant catarrhal (1), no diagnosis (1), ketosis (1), blindness (1), nasal discharge (2), blocked teat (2), dystocia (2), uterine prolapse (2), liver flukes (2).

disease problems in buffaloes of all ages. However, diarrhoea cases were significantly ( $p < 0.05$ ) seen more frequently in smallholder calves, mainly due to coccidiosis (Little, 1979). Apart from coccidiosis, salmonellosis was also one of the important aetiological agents in cases of diarrhoea in UPM calves as observed elsewhere by Priestley and Artioli (1946) and Bali *et al.* (1979). Colibacillosis and salmonellosis were suspected in many clinical diarrhoea cases of smallholders buffalo calves. The affected calves, however, responded well to parenteral antibiotic treatments.

Pneumonia, particularly aspiration pneumonia was frequently seen in UPM buffalo calves but rarely occurred in smallholder animals ( $p < 0.05$ ). This is probably due to the complications of the regular deworming scheme practised in UPM farm. A small outbreak of haemorrhagic septicaemia involving seven adult UPM buffaloes was observed in 1979 (Jainudeen, 1983). Anorexia, general weakness and recumbency, wounds and lameness were the major disease problems in smallholder buffaloes that were less frequently seen in UPM animals. These disease conditions are probably associated with the smallholders system of management. Anorexia and general weakness

and recumbency are probably associated with the nutrition where most animals grazed on low quality native grasses although in many cases fever was observed accompanying anorexia.

Forty per cent of the wounds in smallholder buffaloes were slash wounds, which were absent in UPM buffaloes. This is probably due to the reaction of angry neighbours on the animals grazing on their property. In most instances, slash wounds were located at the base of the tail. Traumatic wounds due to automobile accidents were also seen in smallholder buffaloes grazing by the roadsides.

Lameness was another major disease condition in smallholder adult buffaloes; 7% (4 adult buffaloes) of the smallholder buffaloes showed abscessation of the sole compared to only 2% (1 adult buffalo) showed foot-rot in the UPM farm. The rough surfaced roadsides and the wet unfavourable flooring condition of the sheds provided to these animals is probably the cause of this problems.

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