



UNIVERSITI PUTRA MALAYSIA

**THE EFFECT OF DEHYDRATED FOOD WASTE (DFW) AND
LEUCAENA LEUCOCEPHALA FOR PREGNANT RABBIT DOES AND
PREWEANERS PERFORMANCE**

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AND PREWEANERS PERMORMANCE**

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CERTIFICATION

This project entitled “ The effect of Dehydrated Food Waste (DFW) and *Leucaena Leucocephala* for Pregnant Rabbit Does and Prewearners Performance” is prepared by Arif Zakwan bin Hamdan and submitted to the Faculty of Agriculture in fulfilment of the requirements of the course SHW 4999 (Final Year Project) for the award of degree in Bachelor of Agriculture (Animal Science).

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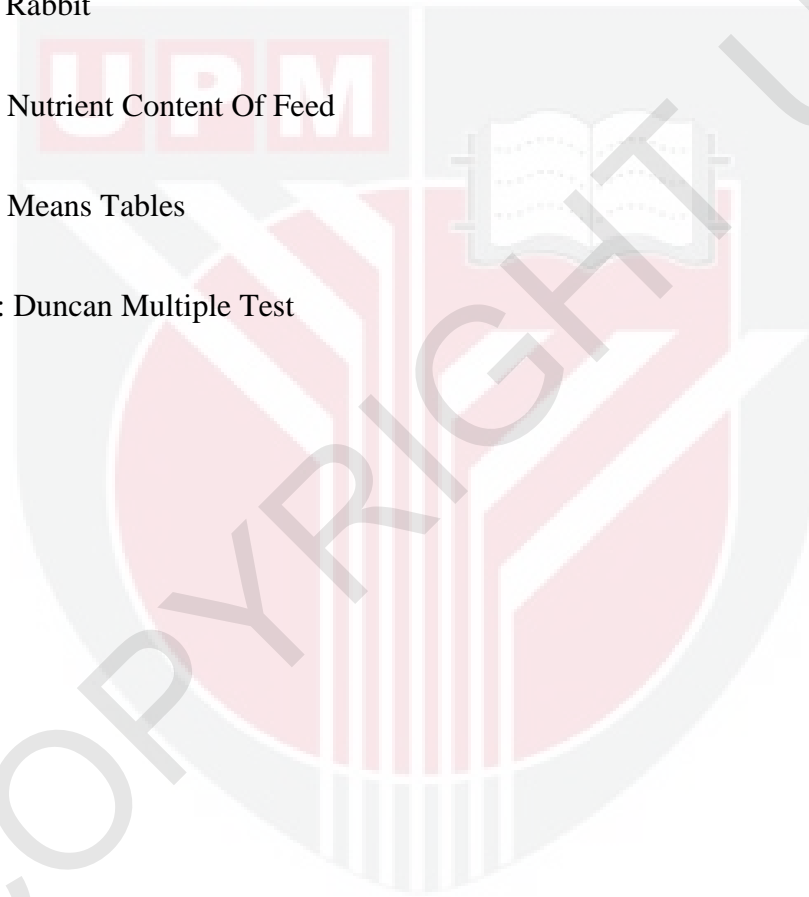
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ABSTRACT

Daily, human generates large quantities of food waste in restaurants, hotels, grocery stores, universities and even prisons. Large amount of food waste will creates pollution and need lots of works to dispose them. There will be air pollution and pollution to people around. Eventually, if there are no actions taken by human, diseases can spread and can harm human being. Dehydrated Food Waste (DFW) is one kind of solution for people to generate extra income and reduce the cost to dispose the food waste. *Leucaena* is one of fibre source for rabbit feed. Fresh or dried *Leucaena leucocephala* or leaf meal improves feed intake, feed efficiency and animal performance in rabbits. The combination of DFW with *Leucaena* in form of pellet will produce a high quality of rabbit feed and be fed to them. The objectives for this study are to identify the most suitable combination of fibre and DFW for mothering ability in rabbit doe. Next, to determine the quality of dehydrated food waste as source of energy in rabbit doe. Additionally, it is to evaluate the performance of pre-weaning rabbits nurse by rabbit doe. The study was conducted in a rabbit farm in Dengkil, and total of nine doe rabbits were used during this study. Age of rabbits was around 17-19 months old and average weight was 3.15kg. All of the rabbits are from New Zealand White breed. All of the rabbits were 2-3 weeks pregnant in initial state of experiment. There are three parameters used in this experiment which are T1- using commercial feed, T2- DFW(50%) + *Leucaena*(50%), and T3- DFW(60%) + *Leucaena*(40%). The percentage of crude protein in *Leucaena* is 14.7, while in DFW is 12.76. Combination in T2 has 13.72% and T3 has 14.11% crude protein. Crude fibre in *Leucaena* is 10.61% and in DFW is 9.81%. Combination in T2 has 10.08% and T3 has 9.69% crude fibre. The values of crude protein and crude fibre in T2 and T3 are lower than commercial feed which is 18.4% crude protein and 14.2% crude fibre. For rabbit doe, T2 has the highest mean weight (3.085kg) followed by T3 (2.943kg)

and T1 (2.925kg). T2 is significantly different with T1 and T3. However, there is no significant difference between T1 and T3. For kits weight per mother, T1 has the highest weaning weight (2.934kg) followed by T2 (2.886kg) and T3 (2.776kg). There is no significant difference in all treatments. In conclusion, this result showed that different percentage of fibre and concentrate combination will have different effect on rabbit's milk production and mothering ability.



ABSTRAK

Harian, manusia menghasilkan kuantiti besar sisa makanan di restoran, hotel, kedai-kedai runcit, universiti dan juga penjara. Jumlah besar sisa makanan akan mewujudkan pencemaran dan memerlukan banyak kerja-kerja untuk melupuskan mereka. Akan ada pencemaran udara dan pencemaran kepada orang di sekeliling. Akhirnya, jika tidak ada tindakan yang diambil oleh manusia, penyakit boleh merebak dan boleh membahayakan manusia. Sisa makanan kering (DFW) adalah satu jenis penyelesaian bagi orang ramai untuk menjana pendapatan tambahan dan mengurangkan kos untuk melupuskan sisa makanan. *Leucaena* (petai belalang) adalah salah satu sumber serat untuk makanan arnab. Petai belalang dimakan segar atau kering akan meningkatkan pengambilan makanan, kecekapan makanan dan prestasi haiwan dalam arnab. Gabungan DFW dengan petai belalang dalam bentuk pelet akan menghasilkan kualiti makanan arnab yang tinggi dan boleh diberi kepada arnab. Objektif kajian ini adalah untuk mengenal pasti kombinasi serat yang paling sesuai dan DFW untuk keupayaan ibu arnab. Seterusnya, untuk menentukan kualiti sisa makanan kering sebagai sumber tenaga dalam ibu arnab. Selain itu, ia adalah untuk menilai prestasi arnab pra-susu yang dijaga oleh ibu arnab. Kajian ini telah dijalankan di sebuah ladang arnab di Dengkil, dan sejumlah sembilan arnab betina digunakan semasa kajian ini. Umur arnab berumur sekitar 17-19 bulan dan berat purata adalah 3.15kg. Kesemua arnab adalah dari baka New Zealand White. Kesemua arnab adalah 2-3 minggu hamil pada mula eksperimen. Terdapat tiga parameter yang digunakan dalam eksperimen ini yang T1- menggunakan pelet komersial, T2- DFW (50%) + *Leucaena* (50%), dan T3- DFW (60%) + *Leucaena* (40%). Peratusan protein mentah di dalam petai belalang ialah 14.7%, manakala di DFW adalah 12.76%. Gabungan di T2 mempunyai 13.72% dan T3 mempunyai 14.11% protein mentah. Serat mentah dalam petai belalang adalah 10.61% dan dalam DFW adalah 9.81%. Gabungan di T2 mempunyai 10.08%

dan T3 mempunyai 9.69% serat mentah. Nilai-nilai protein kasar dan serat kasar di T2 dan T3 adalah lebih rendah daripada makanan komersial yang merupakan 18.4% protein kasar dan 14.2 serat mentah. Untuk ibu arnab, T2 mempunyai berat badan purata yang paling tinggi (3.085kg) diikuti dengan T3 (2.943kg) dan T1 (2.925kg). T2 adalah jauh berbeza dengan T1 dan T3. Walau bagaimanapun, tidak terdapat perbezaan yang signifikan di antara T1 dan T3. Untuk purata berat anak setiap ibu, T1 mempunyai berat badan yang paling tinggi berceraai susu (2.934kg) diikuti oleh T2 (2.886kg) dan T3 (2.776kg). Tidak ada perbezaan yang signifikan dalam semua rawatan. Kesimpulannya, keputusan ini menunjukkan bahawa peratusan yang berbeza serat dan gabungan pekat akan mempunyai kesan yang berbeza pada pengeluaran susu arnab dan keupayaan ibu arnab.

CHAPTER 1

INTRODUCTION

Daily, human generates large quantities of food waste in restaurants, hotels, grocery stores, universities and even prisons. Large amount of food waste will creates pollution and need lots of works to dispose them. There will be air pollution and pollution to people around. Eventually, if there are no actions taken by human, diseases can spread and can harm human being. Dehydrated Food Waste (DFW) is one kind of solution for people to generate extra income and reduce the cost to dispose the food waste.

All of the food waste that can be found can be used again as another resource. For example, as animal feed. Food waste will be shred and use heat to evaporate moisture. The residual is dried food waste, which is a pulpy mass dry to the touch. Unlike composting, food waste can be processed without requiring complementary bulking materials to absorb excess moisture from high moisture content food waste. This makes dehydration technology easier to operate and requires a smaller area. As people care of the waste that being produced everyday, it will help prolong human health and help to reach towards greener Earth.

Dietary fibre can be found in cereals, fruits and vegetables. Fibre is made up of the indigestible parts or compounds of plants, which pass relatively unchanged through our stomach

and intestines. Fibre is mainly a carbohydrate. The main role of fibre is to keep the digestive system healthy. Fibre is very important for animals including rabbits. Rabbits have to consume fibre daily for their dental, digestive and emotional health. Rabbits need two kinds of fibre in their diet; digestible and indigestible, together we call this Beneficial Fibre. The first gives them essential nutrients and the second keeps their digestive system moving effectively. Moreover, if there is sufficient fibre in rabbit's diet, it will grow faster and healthier. Different kind of feed has different nutrient content. So, it is recommended for people to give the best feed to rabbit. In this situation, rabbit farmers need to identify which type of pellet feed is the best for their animals. Thus, it can improve growth rate and reduce cost of feeding.

Leucaena leucocephala is a small, fast-growing mimosoid tree native to southern Mexico and northern Central America (Belize and Guatemala), but is now naturalized throughout the tropics. Common names include white lea tree, jumbay, and white popinac. is used for a variety of purposes, such as firewood, fiber and livestock fodder. *Leucaena* is one of fibre source for rabbit feed. Fresh or dried *Leucaena leucocephala* or leaf meal improves feed intake, feed efficiency and animal performance in rabbits.

The combination of DFW with *Leucaena* in form of pellet will produce a high quality of rabbit feed and be fed to them.

General Objectives

To identify the most suitable combination of fibre and dehydrated food waste for mothering ability and determine the quality of dehydrated food waste as source of energy in rabbit doe for the evaluation on performance of pre-weaning rabbits nurse by rabbit doe.

Specific Objectives

1. To identify the most suitable combination of fibre and dehydrated food waste for mothering ability in rabbit doe.
2. To determine the quality of dehydrated food waste as source of energy in rabbit doe.
3. To evaluate the performance of pre-weaning rabbits nurse by rabbit doe.

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