

UTILIZATION OF PELLETTED AND NON PELLETTED FEED BY GROWING RABBITS IN TROPICAL CONDITIONS

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ABSTRACT : A total of 48 four weeks old rabbits were divided in 3 homogenous groups and caged individually. During a 6 weeks trial they received *ad libitum* the same diet, but pelleted in long or short pellets (diameter 1.1 cm and length of 6.5 or 2.1 cm) or presented as mash. Rabbits fed long and short pellets ate and grew similarly (adg

of 29.5 and 27.3 g/d) but significantly grew better than those fed on all mash diet (21.9 g/day). Form of feed did not affect mortality rates (0 or 1 dead rabbit/group). However, cost of wasted feed for rabbits fed long pellets and mash was about twice that of rabbits fed short pellets and as such would reduce profit margins.

RÉSUMÉ : Utilisation d'un aliment granulé et non par des lapins en croissance, dans des conditions tropicales.

Au total 48 lapins de race Néo-zélandais et Californien âgés de 4 semaines ont été répartis en 3 lots homogènes et placés dans des cages individuelles. Ils ont été nourris à volonté pendant 6 semaines avec le même aliment; mais celui-ci était présenté soit sous forme de granulés longs ou courts (diamètre de 1,1 cm et longueur de 6,1 cm ou 2,1 cm), soit sous forme de farine. Les lapins nourris avec les

granulés longs ou courts ont eu une consommation et une croissance similaires (gmq de 29.5 et 27.3 g/j), et significativement meilleures que ceux nourris avec l'aliment présenté en farine (gmq de 21,9 g/j). La forme de l'aliment n'a pas affecté le taux de mortalité (0 à 1 mort par lot). Cependant, le coût du gaspillage chez les lapins nourris avec des granulés longs ou de la farine a été environ le double de celui concernant les lapins nourris avec des granulés courts, réduisant donc la marge bénéficiaire.

INTRODUCTION

Inadequate feed intake by rabbits result in poor growth, diseased conditions and sometimes high mortalities. Rabbit feed in Cameroon, as for most developing countries, is fed as a mash in crocks or "J" feeders. Scratching into the feed results in a lot of waste and loss of feed to the animal. Pelleting diets would increase feed density and reduce such losses. CHEEKE *et al.* (1982), stated that rabbits preferred pellets to mash but sizes of pellets must be small. However the small rabbit industry does not allow such investment, however cattle pelleting machines are abundant. This experiment attempts to evaluate efficiency of feeding pelleted rabbit feed for growing rabbits.

pellets measured 6.5 cm long and 1.1 cm in diameter while short pellets measured 2.1 long and 1.1 diameter.

Every day, 100g of fresh Guatemala grass (*Tripsacum laxum*) was given to rabbits to augment fiber to 10.5%. Cost of one kg mash was 100 F-CFA and 120 F-CFA for one kg of pellets. (500 F-CFA = 1 US dollar)

RESULTS AND DISCUSSION

Feed intake values of rabbits fed short pellets was significantly higher ($P<0.01$) than those of rabbits fed long pellets which were in turn higher ($P<0.01$) than

MATERIAL AND METHODS

Rabbits and management :

Forty height rabbits of New Zealand and Californian breeds, four weeks old, were randomly allocated to three groups and fed test diets for six weeks. The experimental design was completely randomized with 16 rabbits per treatment. Rabbits were caged singly in metallic caged and feed and water given free choice. Feed was given in "J" feeders and water in enamel cups. Room temperature varied from 19 to 30°C and relative humidity measured 60-80%.

Experimental diets

The test diets consisted of long pellets (D1), short pellets (D2) and mash (D3). The percent and chemical composition of test diets are found in Table 1. Long

Table 1 : Formulation and chemical composition of diets

	% composition
<i>Feed items</i>	
Brewers drain grains	41.0
Maize	30.0
Wheat bran	13.5
Cotton seed meal	8.0
Offal meal	2.0
Palm oil	2.5
Bone meal	2.5
Salt	0.5
<i>Nutrients</i>	
Digestible energy (kcal/kg)	2716
Crude protein %	20.0
Crude fibre	9.0
Ether extract	7.0
Calcium	1.0
Phosphorus	0.8
Lysine	0.7
Methionine + Cystine	0.7

those of rabbits fed the mash. Rabbits fed pellets has similar weight gains but grew faster ($P < 0.01$) than those fed mash. This confirm observations reported by CHEEKE *et al.* (1982). CHEEKE, 1987, stated that rabbits prefer pellets to mash. Feed intake and growth rate values were considerable higher than values generally observed in the tropics suggesting that the form of feed enabled greater intake and feed utilization. The long pellets were better utilized than the short pellets and least efficiently utilized was the mash diet. It is suggested that the heat from pelleting probably rendered pellets more digestible. Short pellets were chips off the long pellets and apparently were not as firm as the long pellets.

Form of the feed had no effect on the death rate of rabbits. However, one rabbit each died from the lot fed pellets. An autopsy on the dead rabbits showed no apparent abnormalities.

More feed was wasted ($P < 0.05$) by rabbits fed the mash followed by those fed the long pellets and least by those fed short pellets. Rabbits had tendency to scratch at the mash apparently to select the more palatable particles. A similar situation was also described in a trial conducted in Benin, by KOPDEKON *et al.* (1998) : meal feeding was associated with a wastage of 30% of daily distribution, but with pellets wastage was negligible. The long pellets were probably too large and crumbled, thus wasting as the rabbit chewed away on pellet. Putting a monetary value to the feed wasted, it was observed that about one and half 50kg-feed bags were wasted by rabbits fed the long pellets and mash ; and only half a bag for rabbit fed short pellets. This suggests great loss and reduction in the profit margins.

Table 2 : Fattening performance of rabbits

	D1 Long pellets	D2 Short pellets	D3 Mash
Daily feed intake (g/rabbit)	112.5 ^y	121.5 ^x	101.4 ^x
Daily weight gain (g/rabbit)	29.5 ^x	27.3 ^x	21.9 ^y
Feed gain ratio	4.0 ^a	4.5 ^b	4.9 ^c
Mortality	1/16	1/16	0/16
Feed wasted (% of total given)	12.2 ^b	9.4 ^c	23.8 ^a
Cost of wasted feed (F CFA)	4032	2688	4848

x, y, z : within each row, means having superscript with different letters are significant at $P < 0.01$

a, b, c : within each row, means having superscript with different letters are significant at $P < 0.05$

1 US dollar = 500 F CFA

In conclusion, rabbits fed pelleted diets ate and grew better than those receiving the same feed as mash.

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REFERENCES

- CHEEKE P.R., PATTON N.N., TEMPLETON G.S., 1982. Rabbit production. *The interstate printers and publishers, inc. Danville, Illinois, USA.*
- CHEEKE P.R., 1987. Rabbit feeding and nutrition. *Academic press inc., San Diego, USA.*
- KPODEDON M., LEBAS F., DJAGO A. Y., COUDERT P., 1998. Relative efficiency of local meal concentrate and pelleted feed for fattening rabbits in tropical condition. Interaction with rabbit origin. *World Rabbit Sci.*, 6, 291-297.