



## Lucerne utilization by rabbits

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Parallél to that, we observed a marked improvement of the feed efficiency that can be attributed to the good energy value of the sugar beet pulp for rabbits.

The authors prefer to restrict the incorporation level of pulp to 15 p. 100, as long as the conditions of use, and particularly the rabbit needs for different kinds of fibre (hemicellulose, true cellulose and lignin) are not determined.

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### **Comparing lucerne meal, safflower meal, beet pulp and grape pomace as roughage sources**

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New Zealand White rabbits were fed diets based on lucerne, safflower meal, grape pomace and beet pulp. Though not significant, feeding safflower meal and lucerne produced a higher level of lactation as measured by three week fryer weights than did feeding grape pomace or beet pulp. In addition, safflower meal and lucerne feeding resulted in significantly greater ( $P < 0.5$ ) eight week fryer weights. Young rabbits, when given simultaneous choice of the four diets, consumed significantly ( $P < 0.1$ ) more of the safflower ration. Preference for lucerne was significantly ( $P < 0.1$ ) greater than for grape pomace or beet pulp. Rabbits weaned at five weeks were similar in weight by eight weeks to those weaned at eight weeks.

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### **Effect of sodium hydroxide treatment of orange pulp digestibility**

J. FERNANDEZ CARMONA, J. L. MARTINEZ PASCUAL, J. HERNANDEZ

*Universidad Politecnica, Valencia (Spain)*

Digestibility coefficients of seven diets containing 0.30, 60 and 100 p. 100 citrus pulp treated or not with calcium hydroxide were determined in New Zealand adult male rabbits. The results showed high standard errors, and there were significant differences between control diet (0 p. 100) and pure pulp (100 p. 100). Citrus pulp had a highly digestible fibre fraction but the quality of its protein was poor. The calcium hydroxide treatment did not affect the digestibility figures.

Diets containing 60 p. 100 orange pulp were little palatable and treated pulp was more palatable than the untreated one.

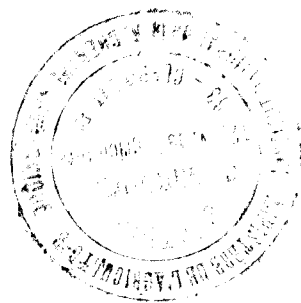
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### **Lucerne utilization by rabbits**

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Four experiments were conducted with weanling New Zealand White rabbits. In experiment 1, treatments were: 0, 10, 20, 30 and 40 p. 100 lucerne in a yellow maize soybean meal diet. Average daily gains were lower ( $P < 0.5$ ) for the 0 p. 100 lucerne diet than for the others. In experiment 2, extraction of lucerne with ethanol did not remove its growth-promoting effect,



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**2° Congrès mondial de Cuniculture**

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Pour le titre, lire :

Effect of Calcium hydroxide treatment on orange pulp digestibility

au lieu de :

Effect of sodium hydroxyde treatment of orange pulp digestibility



suggesting that fibre may be the active fraction. In experiment 3, lucerne meal, oat hulls, beet pulp and wheat straw were compared, at the same level (7.8 p. 100) of dietary fibre. Only lucerne meal gave a greater growth rate ( $P < 0.5$ ) than for the low fibre control diet. In experiment 4, the effectiveness of finely ground lucerne meal *vs* lucerne hay *ad libitum* was compared. Both forms of lucerne gave improved growth ( $P < 0.5$ ).

In all but experiment 4, inclusion of lucerne reduced the incidence of enteritis. It is concluded that lucerne meal, as a fibre source, improves growth and reduces enteritis in young rabbits.

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## Study of different protein sources for rabbit feeding

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In a first experiment, the author studied the partial or total substitution of lucerne proteins by those of soyabean meal or milk powder in a balanced diet for growing rabbits. The addition of wheat straw maintained constant the crude fibre level of the diets (14 p. 100). In a second experiment, he compared the nutritive value for growing rabbits of the oil meals of soyabean, sunflower, rapeseed and linseed.

The author observed no real improvement of growth rate and feed conversion ratio after replacement of lucerne protein by soyabean proteins or milk proteins.

In the second experiment, the best performances were observed for soyabean (growth and feed conversion ratio), but they were not significantly different from those obtained with sunflower meal and rapeseed meal. With linseed meal, growth rate of rabbits was significantly reduced by 9 p. 100 and feed conversion ratio increased by 10 p. 100. No toxic effect was observed with rapeseed meal.

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## Utilization of grape marc by growing rabbits

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This experiment was conducted to investigate the effects of grape marc (GM) in place of dehydrated lucerne meal (DLM) on diet utilization by growing rabbits.

Sixty young male rabbits (N. Z. White) were randomly divided into 6 groups and allocated in individual rearing or metabolism cages.

The animals were fed 6 different concentrate pelleted diets in which increasing quantities (0, 8, 16, 24, 32 and 40 p. 100) of GM were used in place of the same quantity of DLM.

The digestibility of DM, OM and especially that of CP was significantly depressed by the increasing level of GM, even though the crude fibre level of the diets was lowered by this replacement.

These results were explained by the chemical composition of GM, which was relatively low in crude fibre content, but particularly high in ADF and lignin fractions.

The digestibility depression did not negatively influence growth voluntary feed intake and feed efficiency, due to the higher crude protein and gross energy content of GM compared with that of DLM.

Moreover, the experimental diets were supplemented by sulphur amino acids and lysine.

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