

## FEEDING GROWING FLEMISH GIANT RABBITS

### I.—Feeding on Different Levels of Clover (*Trifolium alexandrinum*) and a Food Mixture Containing Barley and Wheat Bran

By

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#### SUMMARY

A study was made on growing Flemish giant rabbits fed on clover alone, a concentrate mixture alone or along with two levels of clover. The mixture of concentrates contained 60% barley grains and 40% wheat bran. Better growth was found when clover was fed along with concentrates with a reduction in the growth measure. The ration containing 50% of its starch values as clover was superior for growth than that containing 33% of the starch value as clover. Feeding on the concentrate mixture alone appeared to retard the growth of the rabbits.

#### INTRODUCTION

Feeding rabbits on green fodder together with small quantities of concentrates is a successful practice in commercial rabbit production. The green stuff may provide essential food constituents required for growth and health, but they are bulky, and young rabbits could not consume enough of them to maintain their energy requirements. Therefore, it is preferable to supplement them concentrates (5).

Generally, it may be more economical to use home grown feeding stuffs to cover the rabbits needs if there is a shortage in clover at the farm. Wheat bran, corn barley grains may be used as concentrates. Inferior results were obtained by feeding rabbits only on bran which is deficient in minerals and high in fibre (2).

Templeton (4) found that rabbits fed on a combination of alfa alfa (as hay and as a green stuff) with lawn grass, gave good results while those fed on lawn grass alone failed to make satisfactory growth. They were not in good condition for killing, at the same time heavy feeding of concentrates gave better developed table rabbits.

In the previous studies on feeding rabbits (1) it was found that feeding on clover along with concentrates gave better results than clover alone. This study was a continuation to investigate the effect of feeding growing Flemish giant rabbits on different levels of clover and a concentrate mixture.

## EXPERIMENTAL AND METHODS

### *Animals*

Flemish Giant rabbits of equal age were selected from the Experiment Station of the Animal Nutrition Section, Faculty of Agriculture at Giza. Rabbits chosen were divided into four groups each of seven rabbits. The experiment started on 8/4/1959 at the age of 6 weeks and continued for 8 weeks.

### *Feeding*

The food level during the whole experimental period was the same as that given by Touny (5). Clover offered was cut into parts ca. one inch long in order to mix leaves and stems. The food mixture was composed of 60% barley and 40% wheat bran. Its starch value was 70 containing 8.44% protein. The starch value of green clover was considered 10.

Group 1 was fed on clover alone as control. Group 2 was fed on clover and the concentrate mixture at a ratio of 33% of the total starch value given from clover and 67% from concentrates. Group 3 was fed on clover and concentrates, taking 50% of the starch value from both. Group 4 was fed on concentrates alone.

The daily starch value consumed per rabbit is illustrated in Table 1 of the results.

### *Recording Weights*

Each group was weighed weekly before receiving the morning ration at 8 a.m. The average weight was recorded to the nearest gram.

## RESULTS AND DISCUSSIONS

### *A.—Average initial and final weight*

The average weight of the 6 weeks old rabbit, Table 1, was 714, 814, 771 and 657 gm. in Group 1, 2, 3 and 4 respectively. At the end of the experiment at 14 weeks, the respective average weight was 1.243, 1.400, 1.557 and 0.960kg. Owing to the differences in the initial weight of the groups, the percentage of the final weight from the original was calculated and respectively found to be 174.0, 172.0

200.2 and 147.1%. This shows that Group 3 (fed on 50% clover and 50% concentrates) produced the best growth. Group 1 (the control fed on clover alone) gave similar results to Group 2 (33% clover and 67% concentrates), but rabbits fed on concentrates alone were distinctly backward in growth.

TABLE I.—Effect of feeding Flemish Giant rabbits on different levels of clover and a concentrate mixture during the growth period 6-14 weeks old. The concentrate mixture contains 60% barley grains and 40% wheat bran.

Age in weeks (T)	Group 1 100% clover		Group 2 33% clover, 67% concentrates		Group 3 50% clover, 50% concentrates		Group 4 100% concentrates	
	Weight of the rabbit W. gm.	Starch value eaten/day S.V. gm.	W. gm.	S.V. gm.	W. gm.	S.V. gm.	W. gm.	S.V. gm.
6 . . . . .	714	—	814	—	771	—	657	—
7 . . . . .	728	26.5*	843	26.5	814	27.5	714	39.4
8 . . . . .	757	33.7	930	36.4	885	36.0	744	40.0
9 . . . . .	814	33.7	985	36.4	1014	36.0	800	40.0
10 . . . . .	943	45.5	1130	49.3	1167	43.3	871	50.0
11 . . . . .	1000	45.5	1157	49.3	1230	56.1	885	50.0
12 . . . . .	1021	45.5	1170	59.1	1271	63.0	1000**	57.0
13 . . . . .	1057	53.1	1328	59.1	1443	63.0	1025	50.0
14 . . . . .	1243	53.1	1400	59.1	1557	63.0	960†	40.0
Total gain kg. . . .	0.529		0.586		0.786		0.303	
Total S.V. eaten, kg.	2.256		2.627		2.480		2.565	
S.V./Kg. live weight	4.265		4.484		3.155		8.498	

\* In the previous interval 6-7 weeks.

\*\* A rabbit dies weighing 560 gm.

† A rabbit dies weighing 1300 gm.

### B.—Gain in weight during the whole experimental period

Table 1 shows that the total gain during the whole experimental period was 529,586,786 and 303 gm. in Group 1, 2, 3 and 4 respectively. This indicates that feeding on clover + concentrate mixture is better than feeding on clover alone or concentrates only. The best combination was by using 50% of the starch value from clover and 50% from concentrates. Feeding on clover alone produced ca. 75% more gain than when feeding on concentrates alone.

### C.—Relation between average weekly weight and age

By studying the linear regression of average weekly weight on age within the four groups the following results were obtained :

	Regression equation	Regression coefficient
Group 1	$W_1 = 63.6 T + 283.2$	63.6 gm.
Group 2	$W_2 = 74.8 T + 338.0$	74.8 gm.
Group 3	$W_3 = 102.7 T + 99.3$	102.7 gm.
Group 4	$W_4 = 47.1 T + 377.0$	47.1 gm.

Where  $W$  = the calculated weight in grams at the age  $T$  in weeks between the period 6-14 weeks. The regression was found to be significant in each group, indicating that the relation between the weight and age during that period of growth for rabbits could be represented by linear regression.

The regression coefficients (statistical average weekly gain) represent the most reliable rate of growth among the groups. They illustrate clearly the superiority of the ration for Group 3, followed by that of Group 2, 1 and 4. Feeding on concentrates alone is not to be applied.

### D.—Growth measure or food efficiency among the groups

Growth measure or the units of food (kg. starch value) used for producing one unit of live weight (kilogram) was calculated among the groups during the whole experimental period as a measure of efficiency of food utilization. It was found to be 4.265, 4.484, 3.155 and 8.498 in Gr. 1, 2, 3 and 4 respectively. For relative comparison these figures would be 135.1, 142.0, 100 and 269.3 showing that best results were obtained with the ration of Group 3 followed by Gr. 1 and 2. From the economical point of view it appears that it is too expensive to feed rabbits on concentrates without adding any green fodder. Hence it is recommended in practice to feed rabbits on green fodder plus concentrates, the best ratio being 50% of each. This appears more economical and profitable for growth. If clover is scarce or high in

in price, it can be added at a level of 33% of the daily diet which would be completed by concentrates. If clover is abundant or cheap it can be used solely in feeding rabbits with a sacrifice in net gain compensated by low food price. Bad results occurred when rabbits are fed on concentrates without any green fodder.

#### E.—Mortality

There was no mortality with Groups 1, 2 and 3 fed on clover alone or mixed with concentrates, while the percentage mortality with Group 4, receiving concentrates alone was 28.5 (2 rabbits out of 7). This may be due to the superiority of the rations containing green fodder. It was also observed that a decline in the appetite of rabbits receiving concentrates, occurred at the last two weeks. Such results are in favour of avoiding feeding rabbits on concentrates alone.

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**تغذية أرانب فلمش جاينت النامية**  
**١ - التغذية على البرسيم بمعدلات مختلفة مع علف مخلوط من الشعير والردة**  
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**المخلص**

لقد درس تأثير تغذية الأرانب من سلالة فلمش جاينت على البرسيم وحده أو مخلوط عليقة مركزة وحده أو مع مستويين مختلفين من البرسيم ، وكان مخلوط العليقة المركزة يحتوى ٦٠٪ من حبوب الشعير و ٤٠٪ نخالة قمح . ولقد وجد نمو أحسن عند اضافة البرسيم مع العليقة المركزة ، وكان ذلك مصحوبا بانخفاض فى مقياس النمو ( وحدات النشا المهضوم اللازمة لانتاج وحدة نمو ) . ولقد تفوقت العليقة المحتوية على ٥٠٪ منها من البرسيم ( كوحدة نشا مهضوم ) على تلك التى تحتوى على ٣٣٪ من البرسيم . ولقد وجد أن انتغذية على المخلوط المركز وحده تسبب تأخرا فى نمو الأرانب .