

A NOTE ON CARCASS CHARACTERISTICS OF RABBITS FED ON A RESTRICTED SYSTEM

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Abstract - Thirty four 65 days old New Zealand White female rabbits, weighting 1900 ± 40 g, were separated in 3 groups and caged individually. One group was slaughtered when 70 days old (reference group, $n=14$). The second group was slaughtered 50 days later after *ad libitum* feeding ($n = 6$), and the third group was slaughtered also when 120 days old, but after restricted feeding since 70 days old i.e. 50% of the spontaneous feed intake of the 65-70 days period (restricted group, $n=14$). Whole carcass weight and carcass cuts weights were measured after 24 hours storage at $+4^{\circ}\text{C}$. For each of the 3 groups in the previous order, slaughter live weight was 1992 - 2988 and 1887g; Chilled carcass percentage were 47.9 - 51.0 and 50.1. Feed restriction decreased the loin proportion of the carcass lower than that of the reference group (27.0 - 26.1 and 22.8% for the 3 groups in the same order) but increased the posterior limbs proportion (36.5 - 36.6 and 40.1).

INTRODUCTION

Very often, rabbits are fed restricted depending on the age or productive proposes, like young females at puberty age, bucks and does without litters or pregnancy, in order to control the live weights and then, improve their reproductive performance .

Young female rabbits when are about 70 days old, are first selected to replace the non productive does. After reaching 80% of the adult weight, they are frequently subjected to restricted amounts of-ration; but part of those animals are not adequate to be incorporated to the reproducer team of a breeding stock for many reasons and are slaughtered. No data of carcass composition are available to estimate the effect of this specific alimentary procedure on carcass characteristics, and besides, there are relatively few works in our animal raising conditions, that bring us information about carcass and commercial carcass cuts yield.

In order to get more information about carcass characteristics of young rabbits (70 - 120 days old) fed on two feed systems (*ad libitum* and restricted), some data were collected and presented as following.

MATERIAL AND METHODS

The data were collected at "Faculdade de Ciências Agrárias e Veterinárias UNESP - *Campus de Jaboticabal*", São Paulo State, Brazil.

One hundred New Zealand White female rabbits were used. They were weaned at 30 days, when they were identified by ear tattooing, and housed in metallic cages with automatic drinkers and external metallic feeders, in groups of four animals per cage and fed on a *ad libitum* system with a commercial pelleted ration (Table 1). When they reached 65 days old, from the 100 weaned, 34 animals weighing $1900\text{g} \pm 40\text{g}$ were chosen, and then, individually housed.

The experimental period initiated when the animals were 70 days old and was carried out for 50 days, in which, two feeding systems were adopted.

From 65 to 69 days old, the voluntary feed intake of the rabbits was daily controlled, in order to give parameters to determinate the ration amount to be offered for the animals during the experimental period.

For the *ad libitum* group (6 animals) was daily offered the amount related to the voluntary intake estimated during the pre-experimental period, added of 20 % The restricted group (14 rabbits) received only 30% of the voluntary, feed intake, which was enough to reach the maintenance metabolizable energy requirement, added of 20%.

Table 1 : Chemical Composition of the Ration (on dry matter basis)

D.M. (%)	C.P. (%)	C.F. (%)	FAT (%)	NUTRIENTS					
				M.E. (kcal/kg)	Ca (%)	P (%)	Na (%)	Mg (%)	K (%)
90.24	12.61	17.72	3.68	2202	2.71	0.66	0.15	0.44	0.17

At day zero of the experimental period, (70 days old), 14 animals were slaughtered weighing $1992g \pm 40 g$, in order to obtain the first carcass characteristics (reference group), and the other 20 rabbits were submitted to the same procedure 50 days later, after being under different alimentary systems.

The slaughter were performed by completely bleeding by jugular cut preceded of stunning.

There were removed the head, the distal portions of anterior and posterior limbs by cutting the tibio-tarsians and radio-carpian articulations, respectively, as well the distal portion of the tail together with the fur; then, the total visceral content was removed, by a medium ventral incision in order to provide the warm carcass weight (WCW). Each carcass was identified with an adhesive ribbon fixed around the loin region, which indicate the number of the animal and the treatment

After obtained each WCW, the chilled carcass weight were obtained by keeping them suspended at $4^{\circ}C$ for 24 hours inside a refrigerated room. After that the carcasses were again weighted and provided data related to the Chilled Carcass Weights (CCW).

The WCW and CCW when correlated to the Live Weight (LW) of the animals resulted in Warm and Chilled Carcasses Percentage respectively.

The commercial cuts percentage were obtained following SCAPINELLO, (1984) methodology, so, there were removed and weighed the posterior limbs (by cutting the articulation between the last loin vertebra and the sacral ones), The loin region, (corresponding to the portion between the first and the last loin vertebra), the thorax-cervical region (corresponding to the portion between the first cervical and last thoracic vertebra), and anterior limbs, removed from the thorax, next to the scapula bone, including the musculature. The weight of each region (table 2), was correlated to the chilled carcass weight, providing this way, the commercial cuts percentage, as showed at table 3.

RESULTS

Table 2 : Means \pm standard error of Slaughter Live Weight (SLW), Warm Carcass Weights (WCW), Chilled Carcass Weight (CCW), Anterior Limbs Weight (ALW), Thoracic-Cervical Region Weight (TCRA), Loin Region Weight (LRW) and Posterior Limbs weight (PLW), of the reference animals, and *ad libitum* or restricted fed ones

Item	REFERENCE GROUP	AD LIBITUM GROUP	RESTRICTED GROUP
SLW(g)	1992 ± 40	2988 ± 53	1887 ± 66
WCW(g)	989 ± 127	1569 ± 39	998 ± 31
CCW(g)	953 ± 27	1522 ± 51	944 ± 77
ALW(g)	137 ± 6	207 ± 9	137 ± 18
TCRW(g)	235 ± 12	416 ± 23	233 ± 19
LRW(g)	258 ± 15	399 ± 20	215 ± 41
PLW(g)	348 ± 40.2	556 ± 33	378 ± 29

Table 3 : Means \pm standard error of Warm Carcass Percentage (WCP), Chilled Carcass Percentage (CCP), Anterior Limbs Percentage (ALP), Thoracic-Cervical Region Percentage (TCRP), Loin Region Percentage (LRP) and Posterior Limbs Percentage (PLW), of the reference animals, and *ad libitum* or restricted fed ones

ITEM	REFERENCE GROUP	AD LIBITUM GROUP	RESTRICTED GROUP
WCP(%)	49.6 ± 2.0	52.6 ± 1.8	52.9 ± 1.4
CCP (%)	47.9 ± 2.7	51.0 ± 2.4	50.1 ± 1.2
ALP(%)	13.9 ± 4.2	13.3 ± 2.4	13.8 ± 3.4
TCRP(%)	24.5 ± 5.2	27.2 ± 3.1	24.7 ± 2.7
LRP(%)	27.0 ± 3.8	26.1 ± 3.3	22.8 ± 2.7
PLW(%)	36.5 ± 1.2	36.6 ± 1.8	40.1 ± 2.0

For the slaughter percentage study, there was not performed the statistical analysis, but the results can be useful as referential point to other studies carried out in our rearing conditions, since few scientific works concerning rabbits slaughter percentages are available for the specific age of the animals and feeding systems used in this work

REFERENCE

SCAPINELLO C., 1984. Utilização do feno de rama de mandioca na alimentação de coelhos em crescimento. *ESAL*, Editora Universitária, Lavras. 71p. (THESIS).

Note sur les caractéristiques des carcasses de lapins après une alimentation restreinte - Trente quatre jeunes lapines Néo-Zélandais Blanc de 65 jours , pesant $1900 \pm 40g$, ont été séparées en 3 groupes et logées dans des cages individuelles. Un groupe a été sacrifié à 70 jours d'âge (groupe de référence, n=14). Un second groupe a été sacrifié 50 jours plus tard après une alimentation *ad libitum* (n=6). Le troisième groupe a été également sacrifié à 120 jours, mais après une restriction alimentaire représentant 50% de la consommation spontanée enregistrée entre 65 et 70 jours (groupe restreint, n=14). Les poids de carcasse et des morceaux de découpe ont été contrôlés après un stockage de 24 heures à +4°C. Pour les 3 groupes dans l'ordre précédent, le poids vif d'abattage était de 1992 - 2988 et 1887 g. Le rendement à l'abattage (carcasse froide, sans la tête ni les abats) était, pour les 3 groupes dans le même ordre : 47,9 - 51,0 et 50,1%. La restriction alimentaire a réduit la proportion de râble en dessous de la valeur du groupe de référence (27,0 - 26,1 et 22,8%) alors que la proposition de cuisse était plus élevée (36,5 - 36,6 et 40,1% pour les 3 groupes toujours dans le même ordre).
