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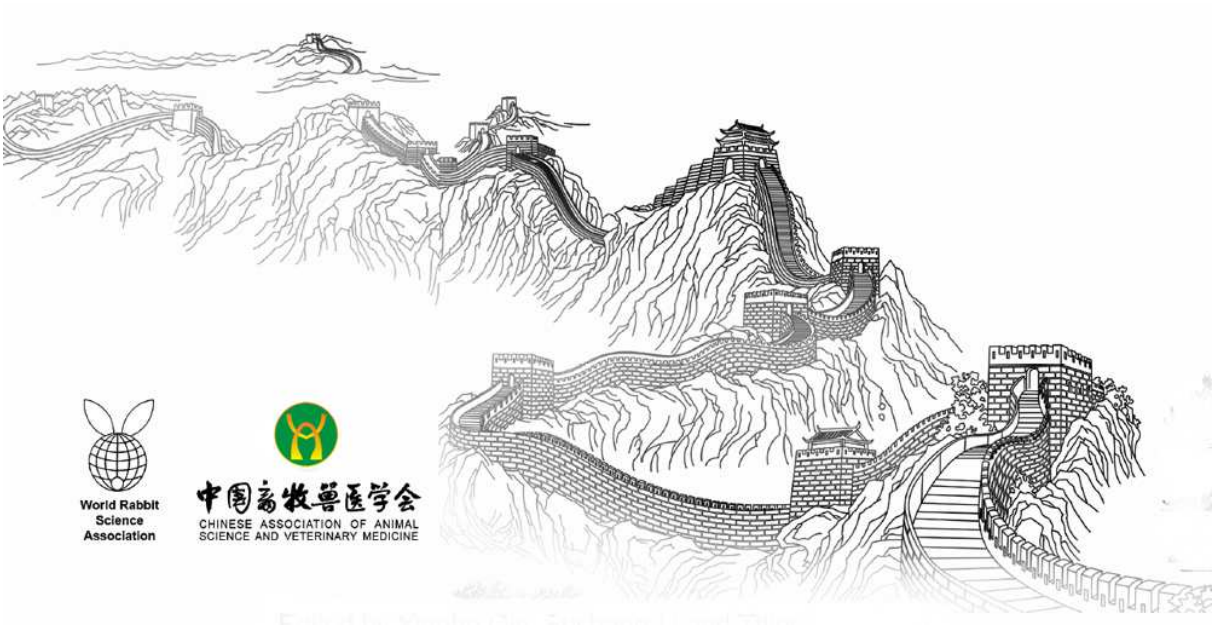

THE EVALUATION OF ORGANOLEPTIC PARAMETERS OF RABBIT MEAT, WAS A NOTABLE WAY TO PROMOTE THE RABBIT MEAT CONSUMPTION

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ABSTRACT

A total of 100 carcasses of male rabbits of the high Algeria locals in the Aures region were subjected to a chemical test and a sensory test. The weight characteristics of fattening rabbits from weaning (made 28 days after birth) were determined. The distributed food contains 13.3% crude fiber, 16.8% crude protein and 2.5% fat. The growth rate was 32.3 ± 3.5 g/d. The rabbits were slaughtered at 11 weeks of age with a live weight of 2000 means ± 483g. The yields of carcass, back and loin 55 ± 13.1%, 24.3 ± 3.1%, and 29.7 ± 3.5 respectively. The chemical composition of the meat showed 22.63% protein and 1.45% fat. Samples (at the back and loin) were baked in an oven. During sensory test, the panelists indicated that local rabbit meat is very tender (6.6 / 7), very juicy (2.39 / 5) but more mealy (3.65 / 7) and has an intense flavor (5.89 / 7).

Keywords: rabbit buck, chemical composition, meat, sensory analysis.

INTRODUCTION

The consumption of rabbit meat has undergone profound changes in recent years. Consumers are looking for whole unsplit carcasses. Therefore, research efforts regarding quality were essentially aimed at ensuring the uniformity of carcasses (weight, optimum balance of bone, muscle and fat). Nowadays, this traditional aspect carcass presentation does not attracts consumers who turn more towards forms of presentations easier to prepare. The quality of rabbit meat can be simply summarized to the quality of the carcass but must absolutely integrate the quality of the lean tissue. Rabbit meat is consumed at home without processing, the final quality of the product mainly depends on the raw material that is to say the chemical composition of the muscle. Among the various constituents of muscle, the fat may partly affect the nutritional and organoleptic qualities of the meat.

The purpose of this trial is to investigate the organoleptic characteristics of rabbit meat from a local Algerian population reared in Aures area.

MATERIAL AND METHODS

Animals

The animals were a local Algerian population (n = 100 sex: male) reared in the Aures region (Batna, Khenchela, Umm El bawagui) (Figure 1). They were placed in collective wire cages of flat-deck-type with three or four rabbit per cage. Cages (62 cm long, 52 cm wide and 35 cm high) were provided with a hopper and a system for watering teat. Feed and water were available *ad libitum*.The temperature and lighting schedule in the rabbitry were 15-18 °C and 16L: 8D, respectively. In order to calculate the feed conversion ratio and average daily gain, feed consumption and rabbits weight were recorded weekly.

Animal's death were recorded daily and subjected to necropsy examination in order to determine the cause of death.

Before each slaughter (77 days of age by cutting the carotid artery and jugula veins) the animals were weighed. The carcasses were chilled for 24 hours at 4°C, Then dissected according to the procedures of the world rabbit science association (Blasco and Ouhayoun, 1996) and weighed.

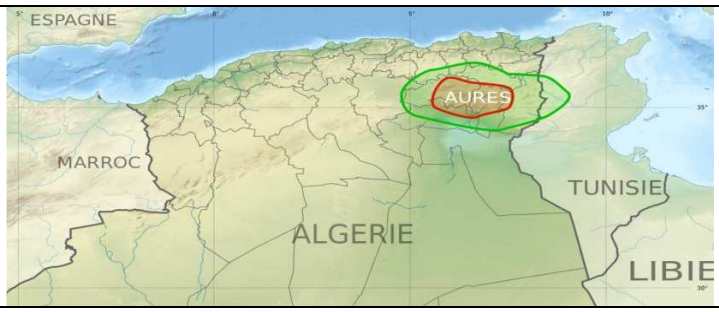

Figure 1. Location of the Aures area. (http: //fr.wikipedia.org)

Preparation of samples and cooking method

Between slaughter and sensory analysis, the samples (hind leg, loin) were packaged and stored at -18 °C. Before baking and after unfreezing (24h at +4 °C), the samples have not received any special preparation.They were then cooked with the bones and intermuscular fat. The tasting test was done by a hundred people aged 30 and over (man:woman, 1:1), and usually consumers of rabbit meat. The pieces were baked at 250 °C in an oven as being covered with aluminum foil. All consumers received two pieces (a hind leg and a loin) that were the subject of a rating from 1 (very bad) to 7 (extremely nice) for criteria: tenderness, flavor and chalky. A rating of 1 (very bad) to 5 (very nice) for criteria greasy feeling and juiciness. A rating of 1 or 0 to stickiness. Open-ended questions allow judges to explain their choice if required (especially for the question concerning possible after taste).

Statistical Analysis

The data is entered and processed with the software MedCalc Version 15.2 - © 1993-2015 MedCalc Software bvba. The results of sensory tests were analyzed by a Student's test. The level statistical significance was 0.05. Results were expressed as mean ± standard deviation and the degree of significance of differences.

RESULTS AND DISCUSSION

Rabbit's growth and slaughter performance

The measurements taken during the trial had identified an average live weight at slaughter of 2000 ± 483g, feed intake in the period 28-77 days 89 ± 14 g with an overall conversion efficiency of 2.7 (Table 1).

Table 1: Growth and slaughter performance of rabbits (mean ± standard deviation)

Parameter	Mean±SE
Live weight at slaughter (g)	2000 ± 483
Daily weight gain (g)	32.3±3.5
Daily feedintake (g)	89.3 ± 14.5
Feed conversion ratio	2.7
Age at slaughter (d)	77 ± 1
CarcassYield (%)	55 ± 13
Hind part yield(%)	24.3 ± 3.1
Loin yield (%)	29.7 ± 3.5
Adiposity (%)	3.07 ±1.7

Results of sensory analysis:

The results of chemical analysis and organoleptic qualities of the meat are presented in Table 2.

Organoleptic qualities, which are by definition those perceived by the senses (Gondret et al. 1998c), are especially important in order to encourage the consumption of rabbit meat. Our results indicated that sensory analysis of rabbit's meat of local Algerian population reared in the Aures is very tender, juicy and has a characteristic flavor (86, 59 and 73% of correct answers, respectively) (Figure 2).

A top marks were recorded (Table 3) for criteria: tenderness and flavor (6.6 ± 0.6 and 5.89 ± 1.4), respectively, compared with those reported by Combes et al. 2003 on standard rabbit and identical to the value obtained on the organic rabbit.

Table2: Chemical composition and organoleptic qualities of the local rabbit meat.

Criteria	Mean ± SE
water	74.6± 0.21*
Ash	1.25± 0.11*
Fat	1.45± 0.36*
Protein	22.63 ± 0.63*
Tenderness	6.6 ± 0.6
Juiciness	2.39 ± 0.9
Flavor	5.89 ± 1.4
Chalky	3.65 ± 1.7
Stikiness	0.38 ± 0.5
Fat	1.53 ± 1.2

*(n=5) (g/100g)

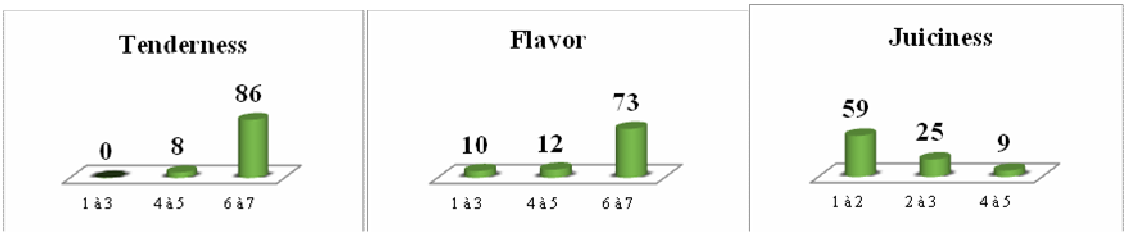

Figure 2. Percentage of correct answers attributed to the descriptors (tenderness, flavor and juiciness) by tasters.

Table 3: Mean scores (± SD) allocated for the various descriptors during the tasting pieces (hind leg and loin).

Criteria	Mean±ES	P
Tenderness	6.6 ± 0.6	2.447
Juiciness	2.39 ± 0.9	2.920
Flavor	5.89 ± 1.4	2.015
chalky	3.65 ± 1.7	2.353
Stikiness	0.38 ± 0.5	1.660
Fat	1.53 ± 1.2	6.314

Flavor, juiciness and tenderness appear to be partially determined by the level and nature of intramuscular fat. In rabbits, although many aspects remain to confirm and quantify the amount of lipids present in the muscle at the time of slaughter seem to influence the final quality of the meat. On the sensory level, positive links were found between the muscle lipid content and tenderness in cattle (May et al. 1992) probably because lipids give a soft feeling to the meat. Similarly, in rabbits there would be a positive connection between the lipid content of the *longissimus dorsi* muscle and the tenderness note assigned by a sensory analysis jury (Gondret et al. 1998a; 1998b).

Tenderness depends on the quantity, the degree of polymerization and distribution of muscle collagen and the state organization of myofibrillar proteins (Monin, 1991). The meat flavor was given to intramuscular phospholipids. These play a positive role in the development of the characteristic aroma of roasted meat (Mottram and Edwards, 1983) while juiciness is related to the amount of free water remaining in the meat after cooking and secretion saliva stimulated by lipids (Monin, 1991).

Finally, studies evaluating the organoleptic characteristics of the rabbit's meat by sensory analysis are still few and often the results contradictory.

CONCLUSION

The study we conducted had shown the organoleptic characteristics of the local rabbit meat. This meat can satisfy consumers who demand a healthier meat and produced with respect for the environment and the welfare of the animal.

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