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TECHNICAL STRUCTURE AND EVALUATION OF PERFORMANCES.**

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RABBIT HUSBANDRY IN ALGERIA. TECHNICAL STRUCTURE AND EVALUATION OF PERFORMANCES.

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ABSTRACT

A study of rabbit production in Algeria was made through different surveys and the analysis of publications and reports available in the Universities. On average, rabbit meat consumption in Algeria is 0.86 kg per inhabitant and per year :1.52 kg in the rural areas and 0.39 kg in the cities. This consumption has increased widely during the last decade. Rabbit production units are mainly extensive (8.0 does / unit and 20.1 rabbits produced per doe and per year) with feeding based on self-produced products. In the few intensive units (1.1% of the total; 18.5 does /unit), productivity is greater (39.0 rabbits / doe/year) but profitability is lower. Most of the production units are recent : 49.3% are active since less than 3 years. Production is based mainly on local population genotype or uncontrolled crossbred rabbits.

INTRODUCTION

Rabbit rearing is practised in Algeria since a long time but at a family level (ONS, 1945; AIT TAHAR and FETTAL, 1990). Some year ago an effort was made to promote modern intensive rabbit breeding techniques, but a lot of technical difficulties act as a brake on it's development (BERCHICHE and LEBAS; 1994; BERCHICHE *et al.*, 1996). It was the occasion to re-evaluate the real productivity of the traditional rearing methods. Some observations were made in experimental units on the fattening period of production but very few on the productivity of the whole system of management. In the same time consumption of rabbit meat was difficult to estimate in the country (COLIN and LEBAS, 1995). In order to improve the general knowledge on rabbit production and consumption in Algeria, a general survey was performed in 1998. It was completed by the analyse of most of the works realised in different Algerian Universities on this subject, to realise a general report on rabbit production in Algeria (GACEM and KACI, 2000). The present communication summarised the main observations of this study.

MATERIAL AND METHODS

The general survey was made through different local surveys in the Eastern and Western part of Algeria and the distribution of a questionnaire in all the Wilaya of Algeria (a wilaya = a geopolitical district). An answer was obtained from 46 of the 48 Wilaya. In addition, a study was made of the bibliography available (publications but also local technical reports) in the centres of Tizi-Ouzou, Baba Ali, Bejaia and Mostaganem.

RESULTS AND DISCUSSION

Rabbit meat consumption

Rabbit meat is consumed in all regions of Algeria. Most of rabbits are consumed by the breeders and his family (self-consumption). Nevertheless, rabbit meat (carcasses) is usually available on the urban markets of Constantine and Algiers for example. A great part of this meat is bought by restaurants and hotels. In the Centre and South regions of the country, it is more difficult to buy rabbit carcasses on the local markets.

The weight of carcasses is about 1.3 to 1.5 kg (with head and legs extremities) and the average price is 360 to 380 DA for 1 kg. According to the survey made in the Wilaya of Constantine, Tlemcen and Bel-Abbes (300 exploitable answers), the average quantity of meat (carcasses) consumed per year is 0.860 kg per inhabitant : 1.519 kg in the rural areas and 0.385 kg in the cities. On average 67% of the rabbits are consumed by the breeder and his family (7 people on average for a family). The ratio between the average market price of 1 kg rabbit and that of 1 kg broiler chicken was 2.14 in 1994, only 1.78 in 1996 and increased again in 1998 up to 2.07.

After the minimum observed 20 year ago, the rabbit meat consumption increased slowly until 1988-1989 and more rapidly thereafter (table 1).

Table 1 : Evolution of rabbit meat consumption in Algeria since 1966 (kg/habitant)

Origin of the survey	AARDES	DSCN/CNRES	ONS	ITELV
Period	1966/67	1979/80	1988/89	1998
Quantity /year	0.30	0.10	0.17	0.86

AARDES : Association Algérienne de Recherches Démographiques Économiques et Sociales

DSCN/CNRES : Direction des Statistiques et de la Comptabilité Nationale/Commissariat National au Recensement

ONS : Office National des Statistiques

ITELV : Institut Technique des Élevages

Rabbit production

In 1999 a survey was conducted by the ITELV in order to characterise the structures of production. Two types of production units were distinguished

- extensive units : rabbits are raised on the soil and feeding is based mainly on kitchen wastes, dry bread, garden products, some products or by-products of the (small) farm itself and sometimes wheat bran (BERCHICHE and LEBAS, 1994).
- intensive units : rabbits are raised in cages (wire mesh) and feeds are mainly bought (pelleted feed, grains, wheat bran, ...).

On average there were 8.1 does in one unit of production. The extensive units were of small dimension (8.0 does/unit) and intensive were bigger (18.5 does/unit), but this situation is without relation with the 300 to 500 does or more observed in the European commercial rabbitries (PONSOT, 2000; RAMON and RAFEL, 2000). The distribution of the breeding units between the different classes of dimension is presented on table 2. It must be emphasised that only few breeding units can be classified in the "intensive" group and that only 8.5% of does were raised in units with more than 15 does. Quite all of the does belonged to the local population genotype or to uncontrolled crossbred types.

Table 2 : Distribution of the rabbit breeding units in Algeria (source ITELV 1999)

Does/unit	number of	Raising system		Total	%
		Extensive	Intensive		
1 - 5	Units	1146	-	1146	45.1
	Does	5057	-	5057	24.5
6 -10	Units	661	-	661	26.0
	Does	4367	-	4367	21.2
11 - 15	Units	647	-	647	25.4
	Does	9462	-	9462	45.8
16 - 20	Units	18	27	45	1.77
	Does	318	436	754	3.6
more than 20	Units	42	2	44	1.73
	Does	908	100	1008	4.9
Total	Units	2514	29	2543	100
	Does	20 112	536	20648	100
Average N° Does/unit		8.0	18.5	8.1	-

A rabbit breeding unit was observed in 58.1% of the families. According to the observations of LAKABI (1999), for 150 breeding units studied in the Tizi-Ouzou area, 49.3% were created since less than 3 years, 22% were active since 3 to 10 years and 28.7% since more than 10 years. The high proportion of recent breeding units can be considered as a important sign of the present rabbit breeding development in Algeria. In these breeding units, the work is quite always done by the wife as it was also observed in neighbouring countries like Morocco (BARKOK, 1991). This can be related with the small proportion of women working outside of the family unit, mainly in the rural areas.

Productivity of the 2 systems of production was studied by GUERMAH (1998) in comparison with a control unit corresponding to the rational breeding management. From the data summarised on table 3, it is clear that productivity of the intensive units is higher than that of the extensive ones : 39 kits /doe and /year *versus* 20 kits for the second system. Nevertheless there is also a wide margin of progress available since it was is possible to produce 55 rabbits per doe in the control unit (at the University).

Table 3 : Productivity of rabbit does in different Algerian raising systems

Breeding system	Control	Extensive	Intensive
• N° Does / unit	16	16	16
• % does replacement (/year)	145	-	100
• Inter-kindling interval (days)	45	73	52
• N° kindlings / doe /year	8	5	7.4
• Total born /litter	8.60	5.04	6.87
• Born alive /litter	8.20	-	6.37
• Weaned per kindling	7.70	4.03	5.28
• Slaughter rabbits /doe /year	55.2	20.1	39.0

Different studies were made on the growth performance of the rabbits most frequently available in Algeria, i.e. rabbits belonging to the local population. The different results are summarised in the table 4. It must be underlined that with well balanced diets it possible to obtain a grow rate of 25 to 30 g/day with rabbits of the local population. Nevertheless, in the small extensive breeding units, the observed growth rate remains low : 18 g/day. This situation can be explained mainly by the qualitative and quantitative lack of balanced feeding.

Table 4 : Weaning to slaughter age performance of rabbits, observed at occasion of different studies in Algeria

Year	Location	Genotype	Weaning weight (g)	Daily gain (g/d)	Type of feeding	Feed conversion ratio	Slaughter rate (%)
1989	Mekla	crossbred	560	33.1	pellets	2.35	68.9
1992	Baba Ali	local	-	22.3	pellets	2.80	65.8
1993	Baba Ali	local	-	23.3	pellets + hay	2.88	61.8
1994	Baba Ali	local	698	30.7	pellets	5.03	64.8
1994	Tizi Ouzou	local	-	21.3	pellets	4.25	60.1
1997	Tizi Ouzou	local	-	20.8	pellets + straw	4.01	68.2
1998	Tizi Ouzou	local	-	26.1	pellets	3.89	66.9
1999	Tizi Ouzou area survey	local	396	17.8	extensive sytem	4.17	70.4

A calculation of the cost of production was made to compare the extensive and the intensive systems of production. Because feeding cost is quite null in the extensive system (kitchen waste, garden products and by-products of the farm activity are not paid), despite a lower productivity the cost of production is significantly lower in the extensive system than in the intensive one. For this reason, small extensive breeders can sold their extra rabbits (above self-consumption) on the market with benefit all year long. For the intensive producers, the small benefit on a year basis can be presently obtained only because they are able to propose a great number of rabbits for slaughter at the occasion of the [religious] feast, when the market price is doubled.

CONCLUSION

Rabbit production in Algeria is presently developing. Production with rabbits of the local population raised in an extensive system can be practised with benefit in this country. The promotion of rabbit production should be encouraged in the different Wilaya of the county as it is done in that of Tizi-Ouzou :

- Formation of the new (young) breeders before the creation of the rabbit unit.
- Creation of the raising facilities with local materials.
- Distribution of 16 does + 2 males for each unit.

With 0.86 kg of rabbit meat consumed per inhabitant and per year, rabbit production in Algeria actively participate in the reduction of the animal protein shortage of the population. A promotion of this production may help to continue to reduce this protein shortage at a low cost.

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