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RABBIT REARING IN ALGERIA: FAMILY FARMS IN THE TIZI-OUZOU AREA

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**ABSTRACT**

The aim of this work was to investigate the characteristics of traditional rabbit production in the TIZI-OUZOU area in Algeria. Data from a survey of 224 family farms and breeding performances from a breeding trial in a rural area were analysed. Small scale rabbit breeding is an inexpensive source of meat for the family but is limited by the summer heat and feed resources. Farmers were receptive to improved production methods (pure bred breeding stock and wire cages). However, technical support is essential if rabbit production is to take off.

**KEYWORDS**

rabbit - reproduction - family farm - meat production

**INTRODUCTION**

Meat production in Algeria cannot fulfill the demand although the production of large animals has increased and intensive poultry production has developed.

Traditional rabbit rearing, which is already present in some mountain districts of the country and other rural areas, may contribute to reducing the meat deficit. However, this is still a minor activity despite the advantages of this fertile, prolific and fast growing species.

More information on the actual current situation is required if rabbit rearing is to be extended. The aim of this work was to analyse small scale rabbit rearing in Algeria, taking the TIZI-OUZOU area, a town lying some one hundred kilometers east of Algiers at 800 m above sea level, as a typical example. There is a long-standing record of rabbit rearing in the area.

Traditional small scale rearing was first surveyed. This was followed by a 4 to 8 month long monitoring of 7 farms which were provided with pure bred females and wire cages, but which were run according to traditional methods. The aim was to separate effects due to husbandry itself (feeding, reproduction) from those due to the equipment and breed of rabbits used.

**MATERIALS AND METHODS**

1) Survey of the traditional sector

Three hundred survey forms were handed out to the population of the Tizi-Ouzou area. Care was taken that all four sub-districts were equally represented. Two hundred and forty forms were validated by interviewing the families and were kept for further analysis.

The following points were addressed:

- personal details: address, occupation, age of the person in charge of the rabbits
- structure: type of building and type of cage
- husbandry: origin of rabbits, number of animals, breed, type of breeding, age at weaning, management, care
- production data: number, weight and age of animals when sold or slaughtered
- feeding: method for distributing feed and water, type of feed
- difficulties encountered: hygiene and prophylaxis, excessive cold and heat

## 2) Monitoring of family farms

Reproduction performance was controlled in two types of farms: i.e. with outdoor housing (3 farms with 5 does each) and with indoor housing (3 farms with 10 does each and one with 30 does). Both groups of three farms were provided with Fauve de Bourgogne reproducers. The 30 doe farm was provided with New Zealand and Californian reproducers. Fully equipped wire cages were provided to all farms. Does were fed a traditional diet (Egyptian clover and a mixture of vetch and oats -fresh or as hay-, barleycorn, carob beans).

## RESULTS AND DISCUSSION

### 1- Survey

The results of the survey are indicated in tables 1 to 4.

Most family farms rear 5 to 10 does. They are located in rural areas or at the edge of towns. They are typically managed by women. Rabbits are mixed bred. Coat colour is a mosaic, which is probably due to crosses between foreign breeds (New Zealand, Californian, Fauve de Bourgogne, etc...) imported by foreign technical staff, immigrants and various development programmes. Most rabbits come from the breeder's own village. Adult weight varies between 1.5 and 3 kg. Rabbits are housed very simply in old buildings and occasionally in traditional purpose-built shelters. Rabbits are reared as colonies only (31.5%), in cages only (46.7%) or using both types of housing (Table 2). Feed is almost exclusively low cost farm produce (Table 3). Produce from the family's garden include mainly some spontaneous grasses, fresh alfalfa, fresh vetch and oats, and barleycorn cultivated for this purpose. Leftovers are also included in the diet (stale bread and fruit and vegetable peelings). This is sometimes completed with bran, which is extremely cheap, and carob beans, especially in the summer and winter. Tree leaves (fig-tree and ash) are also provided in the summer, whereas alfalfa hay and vetch and oats hay are included in the winter. The feed is distributed either on the ground itself or in old crockery. Water is provided in pots or old plates. Most family farms use both garden produce and leftovers. On the other hand, 5% of them feed their rabbits almost exclusively with bran.

Animals are mated up late (Table 4) because the young maiden does grow quite slowly. The breeding stock is typically maintained by recruiting from the young. The breeder sometimes uses a buck from a neighbouring farm with a greater reproduction performance than his own so as to increase numeric productivity, or tries to buy does belonging to improved breeds. Reproduction is usually restricted to the period running from november to may because of the summer heat.

Numeric productivity varies widely. It does not exceed 20 rabbits per doe yearly because only a few pups (estimated at half the litter) are actually weaned. This mortality is caused by the low amount of maternal milk, epidemics, heat and some cannibalism. It is also highly probable that the qualitative and quantitative deficiency of the diet is also partly responsible. Weaning occurs late, at two months of age.

People rear rabbits mainly for their own consumption (66%) but production on some farms is also destined for neighbours or the local market. Males are slaughtered or sold when between three and five months of age. Body weight then varies between 1.0 and 1.75 kg. Females are often kept for renewing the breeding stock. Rabbit meat is much appreciated in rural areas, but consumption is restricted because it is expensive and scarce.

### 2- Monitoring of family farms

Because of the small number of does on each farm, all three outdoor farms were analysed together, and so were all three indoor farms where Fauve de Bourgogne does were reared. The farm with 30 does was analysed separately.

The does reared in outdoor cages had the lowest monthly productivity of all (Table 5). This was because the period of observation included the summer during which the breeders

stopped reproduction. The number of births in the other two cases was as expected from a theoretical reproduction rate of 4-5 litters per year (mating immediately after weaning).

Litter size at weaning was much greater than the average value obtained from the survey. This was because mortality of the pups was far lower, especially in the three outdoor farms. Improvements were due to advice given to breeders and to the support provided during the experiment. Finally, the rabbits were slaughtered at 90 to 105 days, at which time body weight was low for the breeds considered. The amount and quality of the daily traditional diet were insufficient.

Rabbits reared between april and july on the 30 doe farm were better cared for by the breeder. In particular larger amounts of feed were provided, which significantly increased final weight whilst they were slaughtered when only 15 days older.

## DISCUSSION AND CONCLUSION

The results of the survey were comparable to those found in neighbouring TUNISIA (FINZI et al., 1988; KENNOU, 1990), which has similar socioeconomic characteristics.

The results indicate that rabbits are mainly produced for farm consumption and the local market. Although only little time and money need be invested, rabbit rearing is not yet profitable. Breeders were receptive to the introduction of improved breeds and modern cages. Unfortunately, the full benefit of using these improved does, especially their fertility, could not be gained. Local feeding and climatic conditions were limiting.

On the whole, family farms have to develop before rabbit production can provide any income, i.e. before the produce can be marketed. A first step in this direction could be obtained by increasing the size of production units (to at least 10 does) and by increasing the number of family farms in the area. Moreover, abandoned buildings or the construction of new inexpensive traditional style sheds (adobe) would provide adequate shelter.

Feed quality can be improved by introducing new raw materials such as field beans, cereals and milling by-products. This should help cover the feed requirements of reproducing and growing rabbits (LEBAS, 1989), which is often the main limitation to production. The efforts to introduce improved breeding stock should be continued.

Technical support from an intensive production unit in the area is required for these improvements to be carried out.

An average production goal of 20 to 25 rabbits per doe yearly seems reasonable for traditional rearing in ALGERIA.

Finally, if rabbit rearing is really to take off, then producers require some form of training and support for at least one to two years. Performance increased significantly in all seven farms to which equipment and improved breeding stock were provided while support was available. However, production dropped after the end of the 4 to 8 month long experimental period due to lack of advice and motivation. The breeders had not become totally self-sufficient. Providing improved breeding stock and cages is not in itself sufficient.

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**Table 1 : Distribution of the breeding units according to the number of does.**

Number of does par unit	Number of cases	%
1 to 4	70	28
5 to 8	129	53
9 to 12	24	10
13 to 16	14	6
17 to 20	7	3
<b>Total</b>	<b>244</b>	<b>100</b>

**Table 2 : Distribution of the rabbiteries according to the housing type**

Type of housing	Number of cases	%
Colonie	77	31,5
Wooden cages	59	24
Wire mesh cages	26	11
Wood and wire cages	29	12
Wooden cages and colonie	28	11
Wire cages and colonie	11	4,5
Various cages and colonie	14	6
<b>Total</b>	<b>244</b>	<b>100</b>

**Table 3 : Distribution of the rabbiteries according to the feeding method**

Feed sources	Number of cases	%
Kitchen waste and garden produce	110	46
Kitchen waste	42	17
Garden produce	29	12
Kitchen waste, garden produce and wheat bran	19	8
Kitchen waste and wheat bran	17	7
Garden produce and wheat bran	14	5
Wheat bran	13	5
<b>Total</b>	<b>244</b>	<b>100</b>



Table 4 : Main productive characteristics of the family rabbiteries according to the survey

Items	Remarks	Number of cases	%
Rabbit's origin	Mixed population with various crossing	244	100
First mating age	6 to 8 month	244	100
Season of reproduction	From autumn to the end of spring	244	100
Genetic improvement	Search of pure bred animals	65	27
Mating technique	- the doe introduced in the male's cage	82	34
	- males and females reared together	162	66
Pregnancy diagnostic	- palpation practiced	185	76
	- no control	59	24
Litters per year	- 2	99	40
	- 3	129	53
	- 4	16	07
Litter size at birth	Variable, from 2 to 10	244	100
Proportion of weaned rabbit	- less than one half of the young born	162	66
	- not controled	82	34
Weaning age	- 45 to 60 days	129	53
	- no indication	115	47
Animal's care	- no special care	101	41
	- feed supplementation	143	59
Reproduction's problems	summer temperature	185	76
Slaughter age	3 to 5 month	244	100
Main rabbit's utilization	- in-house consumption	161	66
	- sale	83	34

Table 5 : Results of production in the 7 family farms observed

Items	Outdoor housing	Indoor housing	Indoor housing
Numbers of farms	3	3	1
Total number of does	15	36	30
Breeds	Fauve de Bourgogne	Fauve de Bourgogne	New Zealand White and Californian
Period of observation	April to November	December to March	April to July
Number of litters observed	19	44	54
Litters/doe/4 months	0.62	1.22	1.80
Born alive/litter	7.4	6.4	6.2
Weaning age (days)	45	45	45
weaned/litter	6.0	4.9	4.4
Individual weaning weight (g)	610	625	-
Birth-weaning mortality	10%	24%	29%
Slaughter age (days)	90	90	105
Slaughter live weight (g)	1400	1500	1792