SMALL CUNICULTURE FAMILY FARM ON THE SOUTH COAST OF GUERRERO STATE, MEXICO.

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ABSTRACT

A survey was carried out in order to study the Small Cuniculture Family Sector in three municipalities of the south coast of Guerrero State, Mexico. Frequent observations were also done to keep a record of the animals, the type of facilities, food, management, health, reproduction, diseases and the marketing of the product. A two step cluster sampling design and an estimated sample of 27 production units were used. Most of the food used (84.6%) in the production units consists mainly of commercial type complemented with agriculture residues, food waste and a small fraction of producers use green food only. 61.5% of this activity is for self consumption, 15.4% is commercial and the remaining is used for both activities. The management is rustic, and the different breeds are the White New Zealand, California, Chinchilla and indefinite crosses; 30.8% of the producers grow the rabbits on earth, 46.1% use cages, and 23.1% both. The animals are mainly kept in the backyards (92.3%) and the rest of them are put on the roofs of houses (7.7%). 53.8% of the producers separate the rabbits from their mothers when they turn 33 days old, and only 30.8% keep records of breeding, births and food and the use of nests is common. The main diseases in 61.5% production units are acariosis, breathing diseases and diarrhea. The productive and reproductive indicators showed an average litter size of 6 rabbits, the mortality rate is 17% and the sale is directly done to the consumer.

Key words: Sustainable, backyard, cuniculture, family farm, diagnostic.

INTRODUCTION

In developing countries, the need to produce food from animals to satisfy the needs of the population allows the incorporation of different species into their production systems, like the rabbit, that is well known for its early sexual maturity, short gestation and high production rate, as well as for being able to digest diets with a high level of fiber (ESPINOZA *et al.* 1997), survive in reduced spaces and requiring easy management, which makes it an animal with a great potential to produce meat, under different

ecological conditions and different production systems, technical or not (AYYAT and MARAI, 1998; ANOUS, 1999).

Ninety per cent of the domestic cuniculture in Mexico is carried out in domestic conditions and only 10% is grown in a business and commercial level (MARTINEZ, 1997); due to this, the rabbit represents a good alternative to increase the nutritional and the economic level of people living in rural areas. In order to achieve that, it is necessary to dynamically insert this species into the productive culture of the society, to participate in the business development, to incorporate new technologies and to actively participate in the social and economical development of the country (TORRES 1995).

In the tropical regions of the country the cuniculture is not developed, and Guerrero State is not an exception. This State counts with 1,765 production units, of which 32 are urban and 1,733 are rural. Due to this, a study was carried out to know the production and commercial conditions in family businesses, as well as the needs of research and technology transferences for the development of a sustainable cuniculture.

MATERIAL AND METHODS

Guerrero is located in the meridional region of the Mexican Republic, on the Pacific Ocean, and between 16º 18' and 18º 48' N latitude and 98º 03' and 102º 12' W longitude. Its territory is in the intertropical zone, but its complex geography facilitates the existence of multiple climatic types. The north limits are Morelos and the State of Mexico, meanwhile the Northwestern limit is Michoacan, the Northeast is Puebla, the east is Oaxaca and the south limit is the Pacific Ocean. Costa Chica is located on the southwest region of the state and represents 16.4% of the state surface with 760, 887has, of which 38.6% is dedicated to livestock (INEGI 1994). It is located between 0 and 500 meters above sea level, the predominant climate is Aw, with an annual average temperature of 27ºC, an approximate annual precipitation of 99mm during July to October and a dry season through November to June (INEGI 2001).

The survey was carried out in the municipalities of Azoyu, Ometepec and Cuajinicuilapa, with the two step cluster as the sample method, with random sampling in each step. The sampling frame was constituted by 82 production units, located in Azoyu, Ometepec and Cuajinicuilapa. By having a 20% preliminary sample, the variance estimators where obtained and with them, a 27 production unit sample was determined.

A 74 question questionnaire was designed to obtain information, with socioeconomic, production, nourishment, health and reproduction aspects, as well as commercialization, facilities and equipment. The questionnaire was applied to producers found heuristically, since there is no official information about how many producers there are in the region. The variables that were observed were size of production units, animal management, facilities and equipment, types of food, diseases, technical assistance and marketing or final destiny of the production. With the results the descriptive statistics were estimated.

RESULTS AND DISCUSSION

In Costa Chica rabbit production is a marginal activity: 84.6% of the producers carry it out as a collateral activity and the other 15.4% for business, including selling them as pets. However, the lack of cultural identity with cooking of this meat is remarkable, since only 61.5% of the people that produce rabbit, eat part of their production.

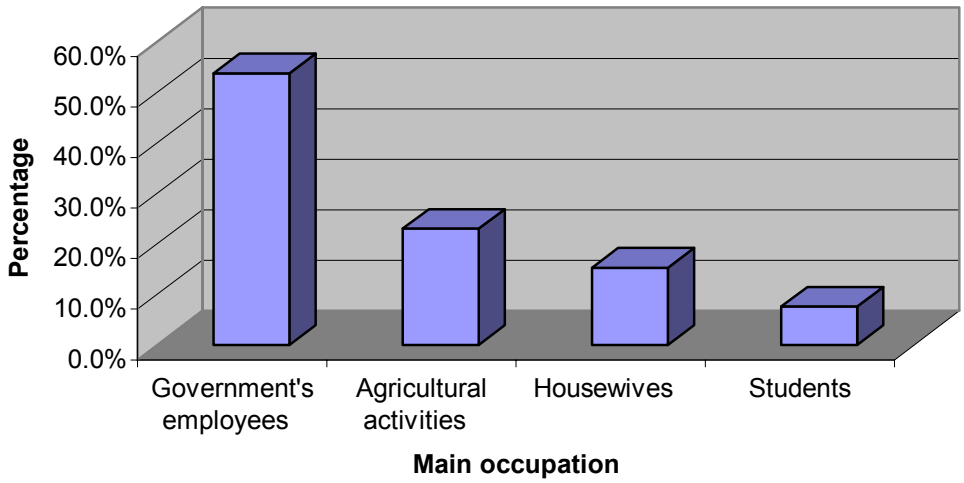

Figure 1. Main occupation of the population dedicated to cuniculture.

As can be seen in figure 1, most of the producers have other sources of income, however it is rather interesting to see that 25% of the producers are housewives and students. In these activities the family participates directly; so there is no direct salary to pay for their work that requires in average an hour and a half every day.

Technical assistance is not very common, since only 46.2% of the producers receive it, and even though it is not done on a regular basis and is very basic; it is done for free. Which is reflected in the time it takes them to separate the rabbits from their mothers, that is generally 5 weeks after born (46%) and lack of production and reproduction records (69%). 53.8% of the production units do not separate their male from their female progenitors, while the other 46.2% keep them in a separate area; 30.8% of the producers grow their rabbits on the ground, 46.1% keep them in cages and 23.1% grow them in cages until the weaning, while the mother remains in the cage. 92.3% of the units are found in the backyards and 7.7% are kept on the roofs and only 38.46% of the producers count with sheds made out of wood, carton, polyethylene, aluminum or concrete.

This shows a minimum investment in the production, which is a positive feature that can contribute to the system's income-yield capacity. However, the inadequate conditions of the animals will affect the productivity, and, because of this, it is necessary to establish cheap and functional strategies.

84% of the producers feed their rabbits with commercial food and agricultural resources like green pastures, vegetables, shrub-like species and food garbage, 7.7% feed them with commercial food and another 7.7% feed them with green pastures, vegetables and shrub-like species.

The diseases found on the small farms are acariosis, breathing problems and diarrhea; these pathologies are seen in 61.5% of the small farms. However, the mortality rate of the rabbits is low (17%), even though 92.30% of the producers do not use antiparasitic drugs and 84.6% don't apply vitamins, which allows us to think about low operation cost, that positively impacts the economic sustainability of the production system.

The predominant breeds are the White New Zealand, California, Chinchilla and indefinite crosses between them. 76.9% of the producers have obtained progenitors within the region, and 23.1% acquire them in the communities nearby. 69.2% of the producers don't change progenitors, 23.1% change them once a year and 7.7% change them every 6 months. 69% of the cases, the replacements are from the same farm and the other 31% are bought from the neighbors. It is necessary to have a genetic program for the use of non-inbreeding animals in order to improve the breeds of rabbits.

The result of the described management is a feasible productivity that needs to be improved, since 46.2% of the producers obtain three births per female throughout a year, 30.8% obtain four and 23% obtain five (in average 3.8) and six rabbits per litter in average. The mortality rate from the birth to the separation from their mothers is 1 rabbit per litter and 0.6 from the separation from their mothers to the sale. In relation to efficiency some authors consider (ROCA, 1996) that a small farm with low efficiency obtain 6.5 births per mother every year, a small farm with a medium level obtains 7.2 births and a farm with a high level obtains 8.3 births per rabbit each year.

Twenty three per cent of the producers use the excrement to fertilize their gardens and crops, to avoid the use of chemical fertilizers, as well as to prevent bad smell and the presence of flies.

30.7% of the producers said that they do not get economic income from cuniculture, 79.2% of the producers reported economic income, with an average of $400.00 per production unit every month. 69% of the interviewed are reported to sale their rabbits, 7.7% sales and gives them away and 23.1% gives them away. These rabbits are sold to family, neighbors, friends and sometimes to the local market. There is an average of 8 rabbits sold per producer every month, however this sale was only reported by 61.5% of the interviewed, which indicates that the sale of their production units is easy while 38.5% said that it is difficult for them to sale their production units. The average cost per rabbit is $40.00 on an age between 30 and 45 days.

Table 1. Characteristics of the rabbit production system in the municipalities of Azoyu, Ometepec and Cuajinicuilapa, Guerrero, Mexico.

Characteristics	Production units	
Destination of the production	Number	Percentage
Self-consumption	16.6	61.5
Sale	10.4	38.5
Occupation of the producers		
Government employees	14.5	53.8
Housewives	4.2	15.4
Agricultural producers	6.2	23.1
Students	2.1	7.7
Technical attendance		
They receive consultantship	12.4	46.1
They do not receive	14.6	53.9
Lodgings		
They have shed	10.4	38.5
They do not have	16.6	61.5
Location of the rabbits		
Floor	8.3	30.8
Cages	12.5	46.1
I step and cages	6.2	23.1
Feeding type		
Commercial food and agricultural resources	22.8	84.6
Commercial food	2.1	7.7
Agricultural resources	2.1	7.7

CONCLUSIONS

We can see that the producers do not look at rabbit production as a business, since they do not keep records of the incomes and debits, nor the production levels, they cannot certainly determine the rentability of such activity.

There is a high percentage of producers that do not sale the results of their production units; however the number of those who do not consume it is also high, this way the cuniculture in the Costa Chica of Guerrero does not represent a source of food or money for the family.

The fact that the producers are developing the activity even without technology, technical assistance and a minimum investment is important, and it leaves open a possibility to develop an economically sustainable cuniculture, friendly with the environment and which can help poor families of the marginal regions.

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