

## THE RABBIT PRODUCTION IN THE VOLCANOES RURAL AREA OF ECATZINGO VILLAGE, MÉXICO STATE

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### ABSTRACT

The backyard rabbit production in the central part of Mexico is characterised as an important part of the folder opportunities of the local people. Institutions and governmental agencies know their existence but they know few about the structure and requirements. The results of the field work analyze and distinguish the main features of the social, technological and commercialization backyard rabbit producers in the Ecatzingo village. The importance of the physical localization is because it is an important part of the touristy corridor of the Pocatepetl and Iztaccihuatl volcanoes.

**Key words:** Rabbit, volcanoes area, backyard.

### INTRODUCTION

From the pre-Hispanic times the local rabbit known as teporingo or volcano rabbit (*Romerolagus diazi*) has been an important part of the diet of local people. With the Spaniard arrival many plants, animals, tools and measurements were introduced. Since then the rabbit activity has been significant as part of their agricultural and forest resources management. The rabbit activity persists as familiar backyard in rural areas and is directed for home consumption; some animals are traded at the local market and among neighbors. During the last 25 years the rabbit activity has been increasing in technology adapting new and modern systems intensifying the meat production. In spite of this new technology the large production do not come from the modern systems. A considerable meat and sub-products come from the backyard systems (LÓPEZ *et al.*, 1999) were in most cases carried out in rustic equipments. During the last two decades the introduction of new rabbit species like ornamental (for pets) and skin (for handcrafts and/or coat) are gaining farmers to mix the activity (CASTELLANOS, 1991). This kind of transformation shows the rabbit diversification towards the intensification which is

adapting the new technology and scientific advantages. However, the challenge is how this new viewpoint can not arrive at the small farmers. In most cases this is because there is not a farmer inventory that can indicate about the technical, social and economic stratification. This work presents the analysis and characterization of rabbit production of Ecatzingo Village as part of the agricultural and forest natural resources.

## **MATERIAL AND METHODS**

### **Location**

The Ecatzingo Village is located at the Southeast and low parts of Pocatepetl volcano. Due to their shape in form of small circular hills do not allow flooding and during raining time the water runs to the ravines in the direction of Morelos and Puebla states. There are no rivers or dams and the agricultural and forest activities depend on the rainy season. The climate is characterized as mild temperate and mild moist with rains in summer and winter. The annual rainfall average is 1,380 mm, and July, August and September are the months with more rain. The dry months are December and January. The average temperature is 14°C and 15°C and the closer are to the Pocatepetl volcano is 0°C and maxima 6°C. The main trees resources are pine, willow, fir, oak, ash tree, cedar, and in less proportion ahuehuetes. Among the main medicinal plants are: mint, rosemary, chamomile, epazote, oregano, bay leaf and parsley, among others. The agricultural activities include the association of maize, pumpkin, broad beans and chilli. Other forages are also important as oat, wheat, winter vetch, Lucerne besides of maize straw.

### **Methodology**

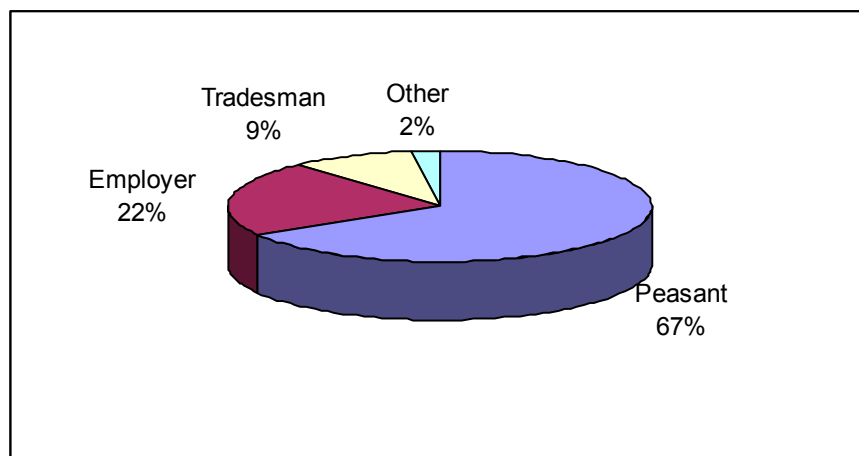
A total of 130 surveys mix with interview were carried out during February to December of 2002 directly to the local population in order to identify rabbit producers. The survey included open and close questions on social, technological and economic aspects and a total of 25 local rabbit producers were identified. Before running the whole, previous exhaustive field work test was developed. The producers were located visually, recommendation among producers and by local authorities. The questionnaires were analysed using frequencies and percentages.

## **RESULTS**

### **Social features**

The rabbit production reported is totally backyard, which satisfies the basic necessities of the family, and is directed for meat production. 97.6 reported private house and 2.3% rent. Rabbit production is mixed with other domestic species like pigs, sheep, horses and bovine and agricultural and forest activities. 66.4% of the producers reported combine with agricultural activities, 21.9% as employer, 9.4% tradesman and 2.3% other occupations (Figure 1).

The material of building houses is a combination of concrete with zinc and/or cardboard sheet and wood. 71.4% of the houses accommodate one family, 28.9% two or three families. The 34.4% include 2 to 4 members, 39.2% 5 to 7 people and 26.4% more than seven people. Regarding the basic services, 99.2% have water and electricity, 27.6% drainage, 20% pavements and 6.3% telephone. 97.7% of the producers were native from the village and 2.3% from other communities.



**Figure 1. Main occupation average of the rabbit producers in the *Ecatzingo Village in Estado de México***

The scholar level reported was 41.9% with 1 to 3 years, 4 to 6 years (30.9%), 7 to 9 years (20.2%), 10 to 12 years (5.6%) and 1.6% with university or technical level. It is important to point out that 72.8% of the producers account for 1 to 6 years of basic school. The women participation include trading the agricultural products, the rabbit backyard and other domestic species and children to clean and feed the animals.

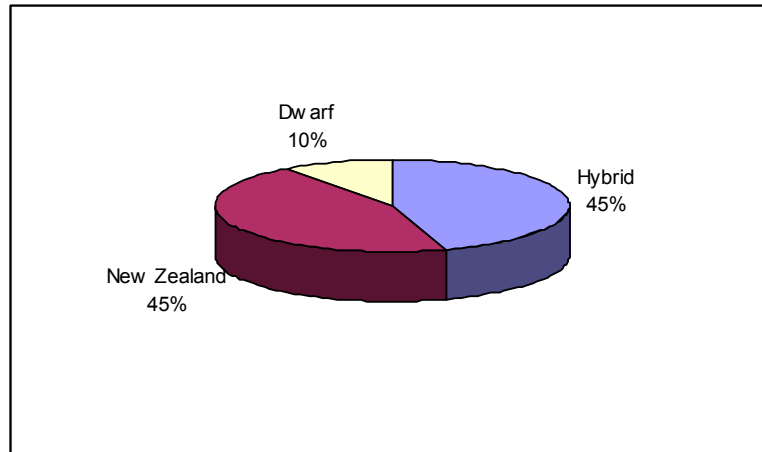
### **Technological features**

464 animals were the total rabbit population and they were distributed as follow: 21.58% (100 rabbits) growth, 20.52% (95 animals) baby rabbits, 24.4% (113 animals) doe, 15% (69 animals) stud and 18.7% (87 rabbits) as female replacement. A majority (90%) of producers reported commercial concentrate to feed the small rabbits. The commercial concentrate decrease according to the age and stage and it is substituted by Lucerne, winter vetch, tortilla and straw. In order of importance the common diseases are mange, respiratory and digestives.

The equipment reported among the producers were cages made with different materials. The walls with wood or zinc sheet or wire mesh, floor with concrete or wire mesh and the roof with wood, zinc, cardboard sheet.

The average of rabbits found is between 8 and 15 animals intercalated among small rabbits, adults (doe female and male). The rabbit breeds that the producers prefer are:

hybrids (45%), New Zealand (45%) and dwarf (10%) (Figure 2). The number of deliveries per year were: 6 (10%), 4 (70%) and 3 (20 %). To combat diseases producers reported to prevent (90.9%) and 9.1% consult the veterinary.



**Figure 2. Main rabbit breed that producers prefer in the Ecatzingo Village in Estado de México.**

### **Commercialization**

The rabbit estimate price varies according to the season and availability, but a standard cost is: female replacement and doe rabbit \$50.00 (5 USA Dollar), small rabbit among \$30 and 50 (3 and 5 USA Dollar) and stud rabbit \$70.00 pesos (7 USA Dollar). The majority of rabbit producers sell the animals to the middleman (62.5%) and the 37.5% trade at the local market and restaurants from the area. During the field work producers reported the necessity of technical advice and economic help as well as equipment.

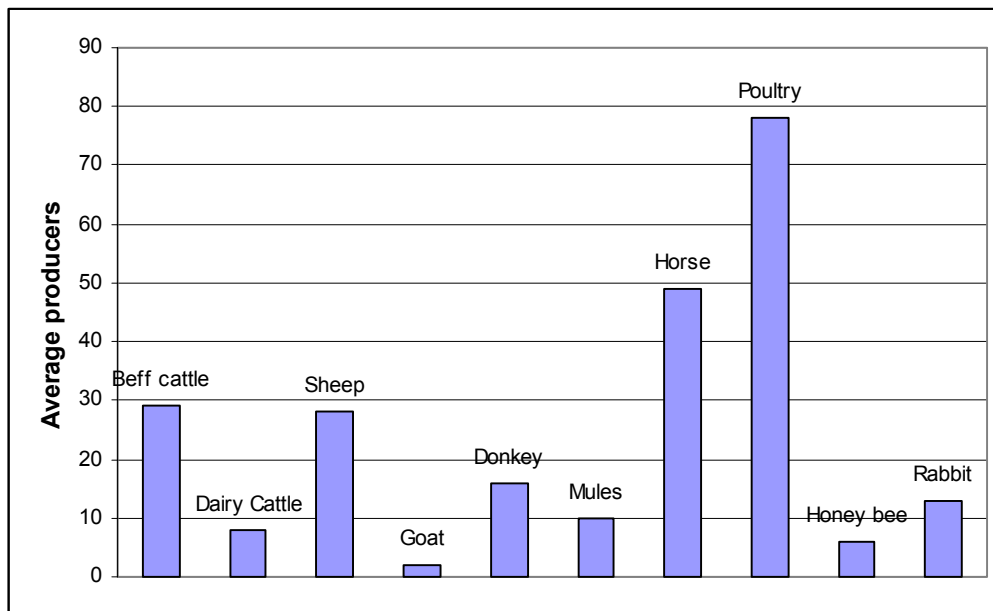
## **DISCUSSION AND CONCLUSIONS**

As shown the rabbit production in Ecatzingo Village is wide and diversified. Rabbit production is an important option among the folder opportunities of the local people. Apparently the incomes from rabbit activity are not significant; however the agricultural and forest activities, which are linked with the natural resources, are inserted into their life style (Figure 3). In this way producers build a steady familiar income all year. As well as producers combine the rabbit activity with other occupations like employer, taxi driver, peasant, tradesman and retired. However there is a profitable business for local people because of their location as part of the ecotourism Popocatepetl and Iztaccíhuatl Park.

During the late 80's the hemorrhagic viral rabbit disease affected the total rabbit population, which were all sacrificed. The rabbit repopulation was carried out by the government with uneven breed animals. It could explain why the 45% New Zealand

breed is present in Ecatzingo village and 50% of California breed in Xochimilco region (RIVERA *et al.*, 2004). The rabbit production system in the Ecatzingo Village contrast with system located in the urban and peri-urban areas of Mexico City. One of the possible reasons is because in this tourist place the middlemen play an important role into the productive chain, he is in charge of collecting the rabbits among the producers. For Xochimilco producers they sell the rabbits as carcass or alive, besides the skin is processed and the handicraft are traded at the local market of fairs.

The technological production system is rustic and needs improvement in order to develop a profitable production. There is the necessity of the technological introduction of metallic cages and automatic drink as well as technical advice that include records, breeds' improvement and feed calendar by stages. It is also important to consider the training courses for the elaboration of sub-products like handcraft, ham and sausages and compost elaboration.



**Figure 3. Livestock distribution among the producers in the Ecatzingo Village in Estado de México**

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