

BACKYARD RABBIT PRODUCTION AS A SUSTAINABILITY SYSTEM IN THE URBAN AND PERI-URBAN AREA OF XOCHIMILCO REGION

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ABSTRACT

Mexico City has a long history of agriculture and, in spite of constant industrial growth, agricultural activities persist within its boundaries. Complex agricultural systems have their roots in the pre-Hispanic period, since then they have been modified and adapted with the introduction of metal tools, domestic animals and plants during the Spanish colony. The rabbit breeding activity at the urban y peri-urban area at southeast of Mexico City is an important part of the folder opportunities that local people have over their folder life opportunities. During the last decades the backyard rabbit production has been a neglected agricultural activity for the governmental plans, in spite of their meat production potential, sub-products utilisation and family integration. The rabbit occupation is characterised by low technological development, lack of technical advice and low breed and genetic quality. The results showed that the main concern of most of the rabbit breeders are: technical advice (including meat and processed sub products), broadcast and financial help to improve their production. The lack of a deep understanding of the whole system put its continuity at risk.

Key words: Backyard, sustainability, urban agriculture.

INTRODUCTION

The Valley of Mexico has a long history in agricultural activities before the Spanish colonisation. With the Spaniards new species of plants and animals arrived. Among the new species the domestic rabbit *Oryctolagus cuniculus* has been an important domestic species which has an important rule in the agricultural activities for rural development (LEBAS *et al.*, 1986). Rabbits are herbivores and efficiently convert fodder to meat and other subproducts that sometimes are not linked with economic values. In spite of the constant city growth during the last decades there are agricultural activities in their boundaries. In most of the cases rabbit breeding is carried out in empirical (traditional) conditions that include family integration and labour distribution among their members. The rabbit backyard technology is not well developed and the proposes are multiple (LÓPEZ *et al.*, 1999). According to CASTELLANOS (1981) rabbits can turn 20 per cent of the proteins they eat into edible meat, which made them one of the most efficient domestic species.

In the last 20 years rabbit breeding in Mexico is improving with the introduction of new technology. Until the late 70's the backyard rabbit occupation was rural exclusivity, for self consumption and district commercialisation through the local market, neighbourhood and weekly market places. In order to improve the activity there is a necessity of knowing the conditions in which is carried out as well as to identify the producer structure and requirements which are necessary to make plans and projects at the local conditions. The objectives of the present work are to identify, to characterize and to analyse the backyard rabbit production in the urban and peri-urban areas on the Southeast of Mexico City.

MATERIAL AND METHODS

The information obtained was carried out using 30 questionnaires, which were applied directly to the producers and included social, technological and economic features. The surveys included 62 questions 11 were open and 51 were closed. Before applying all the surveys these were tested with some producers. The questionnaires were applied in the area known as Xochimilco region that included Tláhuac, Milpa Alta and Xochimilco delegations (Mexico City is divided in 16 delegations or wards). The rabbit producers were located in their house, handcraft fairs, local market, recommended among them and visually. The questionnaires were analysed using conventional statistics such as average and percentages.

RESULTS

Social features

The producers units were distributed as follow: Tláhuac (44.4 %), Xochimilco (33.3 %) and Milpa Alta (22.2%) (Figure 1). The land tenancy reported was 88.9% private and 11.1 rented.

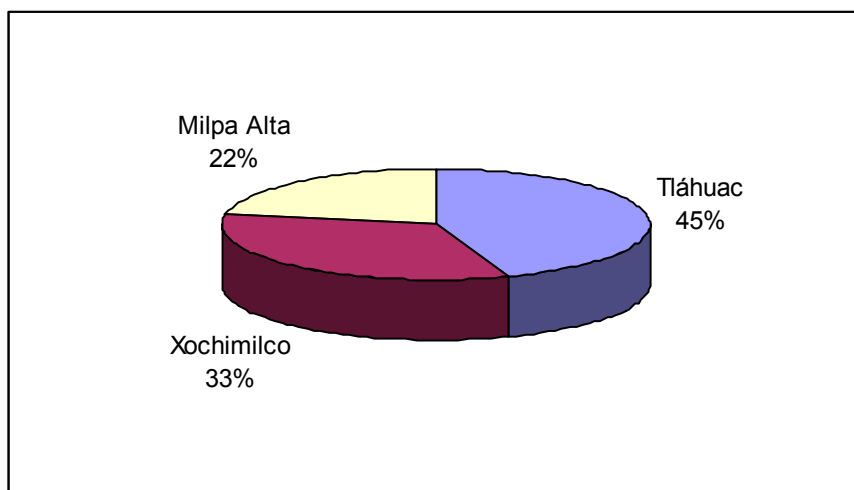


Figure 1. Location of the rabbit producer units in the urban and peri-urban area at the Southeast of Mexico City

The majority of producers were married (66.7%) and the remaining single (33.3%). The born place was Mexico City (88.9%) and 11.1% from different places. The study level reported was 25% did not finish the basic school, 37.5% completed 6 years, 25% secondary school (9 years) , 8% surpassed 10 years and 4.5% reported university (Figure 2).

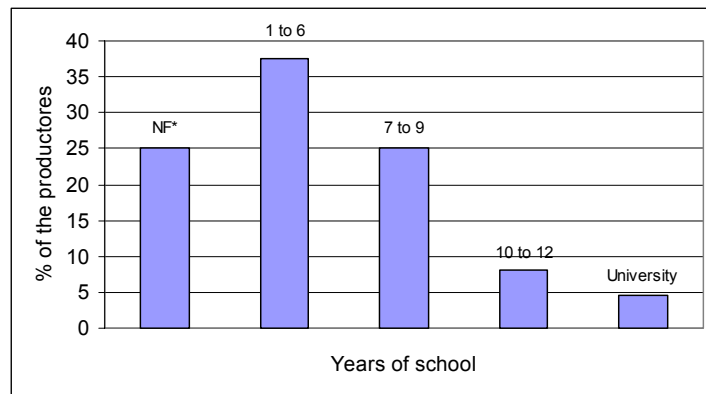


Figure 2. Study level reported by rabbit producers in the urban and peri-urban area at the Southeast of Mexico City

The location of the animals is according to the space availability and the average area reported was 49 m². Most of the producer houses are built with the combination of several materials such as: concrete (77.8%), zinc sheet and plastic (11.1%) and wood (11.1%). The public services of rabbit breeders are: water, electricity, telephone and pavement with 100% and drainage with 88.9% (Figure 3). The number of rooms per house varies according to the number of members, thus 1-2 rooms (22.2%), 3 (33.3%) 4 (33.3%) and 6 (11.1%). The members per family reported was 6 (66.7%) and 3 (33.3 %). Finally the number of families per house reported was 1 (68.4%), 2 (21.1%) and more than 3 (10.6%).

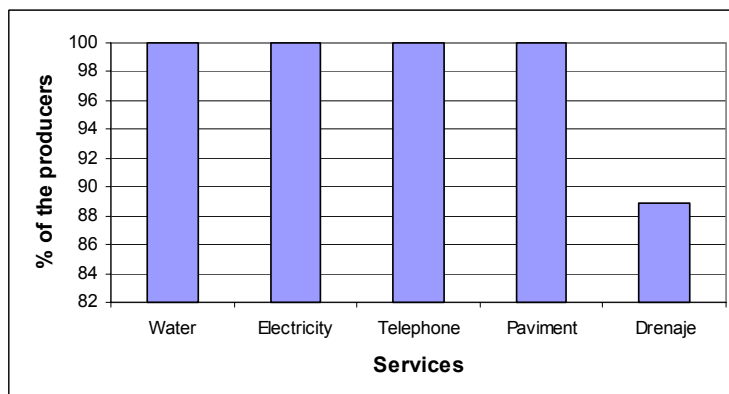


Figure 3. Services availability of rabbit producers in the urban and peri-urban area at the Southeast of Mexico City

Usually farm activities are distributed as follow: children (28.6%), they clean and feed the animals, women (55.6%) sell the rabbits and men (15.8%) sell, clean and attend the technical aspects of rabbit production. The handcraft manufactures is carried out by both wife and husband and usually are sold at the local market and fairs. It is frequently mixed with running house and other activities.

The range monthly income reported is between \$2,000.00 to 5,000.00 pesos (around 180 to 200 USA dollars). That includes the trade of small rabbits, adults, meat and handcraft selling. It is for this reason that the rabbit producers tend to combine the activity with other fixed or casual jobs. The alternative work sources reported were: informal commerce (66.7%), peasant (22.2%) and pensioner (11.1%) (Figure 4).

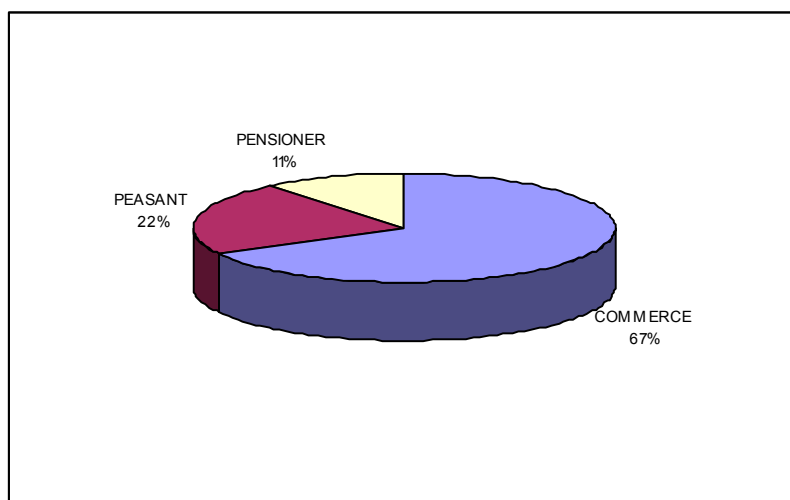


Figure 4. Main job combination of rabbit producers in the urban and peri-urban area at the Southeast of Mexico City

Referring the union organization the 33.3% belong to one and 11.1% of the rabbit producers have received financial support from the governmental authorities.

Technological features

The total rabbit population is integrated as: small rabbit 25% (262 animals), fattening 50% (525 rabbits), stud rabbit 2.5% (26 rabbits), female 10% (105 animals) and rabbit female replacement 12.5% (132 animals). The total rabbit population were 1050 and were distributed as follow: 40% of the producers have between 1-5 rabbits, 20% between 6-10 animals, 30% have 11-15 and 10% have 16-20 or more. The rabbit breed preferred by the producers was California (50%), hybrids with 30% and 20% included rex and ornamentals. The rabbit production is mainly for meat (77.8%) and skin and ornamental (22.2%). The rabbit production is distributed as follow: 20% of the rabbit producers reported self consumption, 28% for meat production, 13% for reproduction, 21% for skin and 18% for trade. 21.09% of the rabbit producers informed 4 births/year, 5-6 births/year (47.35%) and 7 births/year (31.57%). As activity the time dedicated to the rabbit production most of the producers are located in the range of 1 to 10 years. Thus,

68.5% have between 1 to 4 years, 10.5% between 5 to 10 years and 21% with more than 10 years.

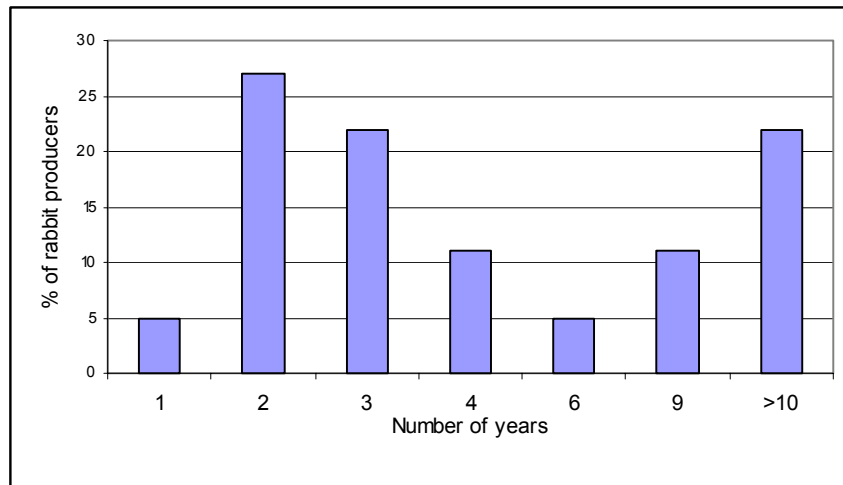


Figure 5. Number of years dedicated to the rabbit production in the urban and peri-urban area at the Southeast of Mexico City.

The equipment is a mix of material that includes concrete (57%) and metallic cages (32%) and in less proportion (11%) a combination of wire mesh and wood. For the prevention and combat of diseases the producers reported that 23% consult the veterinary and 77% prevent them. Respiratory and digestive diseases were the more common problems reported. Regarding the rabbit feeding producers utilize concentrate pellets mainly during the first stages while adult animals are feeding with green lucerne, straw, tortillas and in less proportion concentrate. The rabbit acquiring is carried out among the same producers from the region, neighbouring villages and at the local market.

Commercialization

The rabbit dealings varies according to the season and availability, 24% sell in their own house, 22% in fairs, 16% to restaurants and markets, 14% to the middleman and in less proportion to tianguis (open markets).

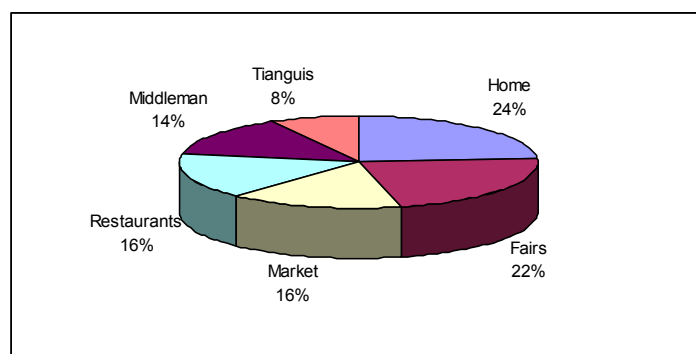


Figure 6. Rabbit commercialization in the urban and peri-urban area at the Southeast of Mexico City

The prices of rabbits oscillate according to the age and sex. Thus, the live male rabbit price fluctuate between 90 to 120 pesos (around 9 to 12 USA dollars), which in a future may be used as stud rabbit, while an adult stud rabbit the cost is around 60 to 120 pesos (around 6 to 12 USA dollars). In the case of young rabbits few producers reported to sell them but, when they trade, the price oscillates between 15 to 25 pesos (around 1.5 to 2.5 USA dollars). In the case of fattening rabbits with a weight average of 2 kg the price fluctuates between 35 to 45 pesos (around 3.5 to 4.5 USA dollars). To estimate the handcraft cost and benefits is too complex because it depends on the fair number, restaurants, gastronomy shows and social events in which each producer can attend.

DISCUSSION AND CONCLUSIONS

As shown the rabbit production in the urban and peri-urban area at the Southeast of Mexico City is widely varied. During the last four decades the rabbit production has been a neglected activity from the governmental political plans. The lack of resources and continuity of the political plans put the activity at risk. The rabbit production is part of the manners in which the local producers mix the agricultural activities with other incomes. The labour integration of the family members make the activity close to the social sustainability requirement. As pointed out for RIVERA (2002) the proposal of sustainability is complex because among the requirements it is necessary to hierarchy the systems. In this sense to assess at farm or crop level is one way to get an approach to the sustainability goal. The political plans should consider the local culture and respect farmer's beliefs in order to be successful among producers. The main concern among the rabbit producers after carrying out the field work were:

- Technical advice for a better breed selection
- Technical advice for equipment and records
- Technical advice for feeding
- Financial support
- Rabbit activity promotion
- Promotion for the elaboration of alternative subproducts (handcraft, ham and sausages)
- Skin tan

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