

The Guinea Pig as meat producer

The guinea pig (Cavia porcellus) is called cuy, cobayo or curi in Spanish. This animal is, just like the llama and alpaca, a pre-Colombian domestic animal kept in the Andean region. Even today, its distribution coincides with the area of influence of the ancient Inca Empire. Besides being an important source of protein-rich meat, in traditional regions it is also used by local 'witches' in curing human illnesses.

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In Peru there are about 21 million guinea pigs. Annually 65 million animals are slaughtered, which produce 16.500 tons of meat, which is about 6.5% of the total meat production. This meat is mainly consumed by the rural population and for these people it is an important source of animal protein. Also in other Andean countries, like Ecuador, Bolivia and Colombia, the guinea pig is important. In Colombia, half a million guinea pigs are almost exclusively found in the Andean part of the Department of Narino, which is located near the border with Ecuador. This article pays special attention to the production of guinea pigs in Narino.

Traditional keeping of guinea pigs

About 90% of all families in the rural areas of the Narino highlands (1500-3000 m.a.s.l.) keep guinea pigs. Most of these families live on small farms, with less than 5 ha of land. They grow potatoes, maize, beans, traditional Andean crops and vegetables. In general, their houses have only one room with an earthen floor and the guinea pigs are kept inside the house. These guinea pigs are fed with kitchen wastes and agricultural by-products and although feeding is adequate, their productivity is low. This is due to the mixing of animals of different sexes and ages, which results in a high incidence of contagious diseases, breeding at an age too young and a high degree of inbreeding. Most animals produced in such a way are consumed by the family, especially during feasts. A wedding or a village festivity without the serving of guinea pig meat is not considered complete. But nowadays, more people are living in the cities and they too like to eat guinea pigs, at home as well as in restaurants. Because most guinea pigs are consumed by the producers, they are hardly offered on the market and as a consequence, prices are high.

Considerations for improved guinea pig production

In 1974 a Dutch bilateral project was started in Narino. It was focussed especially on dairy production. Quite soon people came to realize that on small farms, the production of milk alone would not provide enough income. Furthermore, it was considered necessary that the position of women should be strengthened. For those reasons, the project investigated the technical and economical feasibility of other types of agricultural production. Vegetables and fruit showed good prospects. In the animal production sector, pigs, poultry and guinea pigs were compared. The table shows that although the initial investment in guinea pigs is fairly large, rentability is by far the highest. The main reason for this is that pigs and poultry need concentrates, which are expensive, while guinea pigs can be fed with roughage.

Problems and solutions

In 1975, the Dutch project, together with Colombian organizations, started a programme to stimulate improved guinea pig production. The main problems of the programme and their solutions are discussed below. In Colombia, guinea pigs are only important in the Department of Narino, and there, especially for a marginal group: women on smallholdings. As a consequence, the National Ministry of Agriculture was not much interested in guinea pigs. Other agricultural activities, especially cash crops, milk and beef, had a much higher priority on a national level. The initiative to start up the guinea pig programme was taken by the Regional University and the Dutch project, without much national support. Hardly any knowledge about improved guinea pig production was available in Colombia. Furthermore, the animals present were of low quality, grew slowly and inefficiently and suffered from a high degree of inbreeding. Technicians from Peru were invited to give a course on guinea pigs and they also advised us about required adaptive research. The research was carried out by the University and the Dutch project. Colombian and Dutch agricultural students carried out many of the practical investigations. To increase the genetic potential of the local guinea pig population, improved Peruvian animals were imported. Members of the target group, women who often do not have a certificate of ownership of the land, had difficulties in getting loans from commercial banks. Quite some initial investment is required for improved guinea pig production although this can be paid back in a relatively short time due to the high profits. Because banks were hesitant, the Dutch project, UNICEF and other organizations provided loans to several groups of women. When these loans had a very positive effect and were paid back, the banks also became more inclined to provide loans. When the women started commercial guinea pig production, they were very happy with it because they made good profits. Women have always been taking care of these animals but in the improved production system, work load increased considerably. As long as the women got the benefits of their extra work, this was not a real problem because part of the money earned could be spent to alleviate their domestic tasks. However, guinea pig production is so profitable that men became interested too and in some cases they wanted to take over the marketing and keep the money, letting the women do the work! To prevent this as much as possible, an Association of Guinea pig producers (Asocuy) was founded. Asocuy is directed by women and takes care of the marketing of guinea pigs.

Housing of guinea pigs

Guinea pigs should be housed in different pens according to their sex and age. The following module is recommended in which pen 1 measures 1.5 m² and all the others 1 m²:

Pen 1 With 10-12 breeding females plus their unweaned young and one breeding male.

Pen 2 For up to 15 recently weaned females from 12 days up till 2 months of age.

Pen 3 Up to 15 recently weaned males.

Pen 4 Up to 12 females from 2 to 4 months of age. At the age of 4 months, the animals weigh about 1 kg and can be used for breeding or sold for consumption.

Pen 5 Up to 12 males from 2 to 4 months of age. These animals are sold for consumption.

Pens can be constructed on the floor of the house, in a special building or in cages which can be placed outdoors, like rabbit cages. Guinea pigs don't suffer much from cold, but cannot withstand drought. Floors of pens can be made of wire mesh, wooden slats or be solid and covered with bedding materials.

Start of an improved unit

If somebody has guinea pigs and wants to improve its stock, the best female guinea pigs are selected and mated with an improved male bought from the University farm or a neighbour. Good animals have short, fine and light-coloured hair and grow quickly. Females should be replaced by the best offspring of this crossing. Breeding females should be culled at an age of 18 months when prolificacy starts to decline.

Reproduction

Guinea pigs may become sexually active at an age of 1 month. Under improved conditions, the animals are used for breeding at an age of 3 months when they have a weight of at least 600g. One male is sufficient for a group of 12 females. Pregnancy lasts about 68 days and after that 1 to 4 young ones are born. Within half an hour after having given birth, the female comes in heat and can be served again. In this way a female can produce about 5 litters with in total 10 to 15 young pigs per year. The young are well developed when they are born. They will start eating grass within 3 to 4 days and can be weaned at an age of 7 days. In Narino weaning is normally done at an age of 12 days, when the animals have doubled their birth weight of 90-125g.

Feeding

Although guinea pigs grow quicker when fed concentrates, for economical reasons they often only get roughage, like improved grasses, maize plants, alfalfa or carrots. However, when they are exclusively fed with the local kikuyu grass (*Pennisetum clandestinum*), the animals will lose weight and eventually die. In Narino the best and cheapest feed is ryegrass (*Lolium* sp.). An adult guinea pig consumes about 300 to 400g pre-wilted ryegrass per day. The grass should be available day and night. Starving and after that overfeeding or the provision of wet, spoiled or moulded feed may cause bloat and result in the death of the animals.

Hygiene

Changing the bedding material at least once a week is recommended. As bedding material, straw is preferred to wood shavings because the latter often has been treated with wood preservers which may affect the guinea pigs. Grass should be produced on a plot which is not grazed by other animals to avoid transfer of parasites. To reduce soiling of grass and to diminish the risk of bloat, grass should be fed in a rack. External and internal parasites can be controlled by drugs. Guinea pigs are notorious for their susceptibility to many diseases. So even with adequate hygiene and proper housing, animals may become ill and die. Investigations are carried out in Narino to improve prevention and treatment of diseases.

Summary and conclusions

Guinea pig production in Narino is very profitable. On the market, a guinea pig of 3 to 4 months old with a weight of 1 kg costs twice as much as 1 kg beef. Production costs of a

guinea pig for consumption are about 20-25% of the selling price so even if the price goes down due to a greater supply, the producers still can get a good income. The main advantages of guinea pig production in Narino are:

- people are familiar with this type of animal and like to eat it;
- improved animals are available;
- housing requires a fair initial investment but all materials are locally available;
- after the sowing of pastures, no inputs from outside the Department (like concentrates) are required. Seeds of improved pastures are locally available.

Two main problems remain, which are only partly solved:

- the high risks of animal diseases;
- to assure that guinea pig production does not put too heavy a labour demand on women and that they benefit the most from this type of production.

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