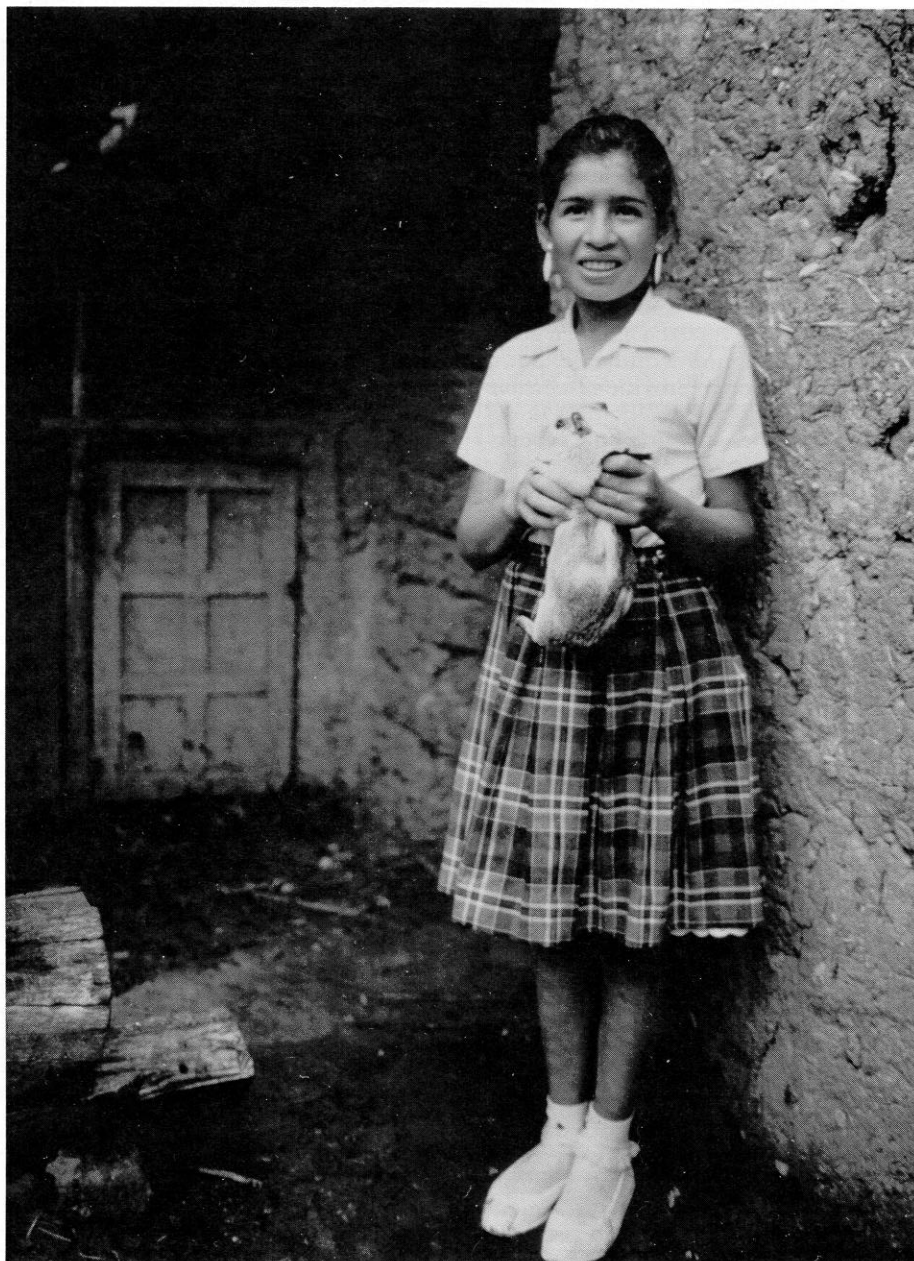


FIESTA FOR SIX: ONE GUINEA PIG ... AND WE'LL ALL BE FULL

Photos: R. Charbonneau / IDRC



Peruvians love to eat guinea pigs. In fact, they raise them right in their kitchens. A team of IDRC-supported researchers in Lima has developed new breeds of guinea pig that weigh three times more than some wild breeds and can feed six people. The scientists have also come up with better production techniques to meet the demand for this increasingly popular meat.

Left, 13-year-old Nilda Quiroz Perez, of Llacanora, Peru, is in charge of her family's guinea pig operation.

Right, guinea pigs are traditionally kept under the kitchen stove and fed table scraps.

ROBERT CHARBONNEAU

Around the world, lawsuits between neighbours, usually over property lines, are part of everyday rural life. In Peru, the lawyers who take these cases are said to be gorged on "cuy"—or guinea pigs—which they often receive as payment for their legal services rather than cash.

Usually thought of as a common laboratory animal, the guinea pig is the object of a whole mythology in the Andean sierra. Even as far back as the days of the Inca Empire, this pudgy rodent with its squeaking cry ("cuy, cuy") had established an important place for itself... at the dinner table.

In the cathedral of the city of Cusco, the "navel" of the Inca Empire, hangs a huge painting of the Last Supper. Surrounded by his 12 apostles, Jesus Christ sits at the table with a well roasted guinea pig in front of him which he is sharing with his guests.

Many Peruvians, whether from the mountains or the coast or just recently arrived in the suburbs of Lima, serve guinea pig as the favourite dish at their fiestas. The more valued a friend, the larger the portion. Any occasion—a visit, birthday party, holiday—is an excuse to serve up this tasty meat, usually fried, but also grilled, in a casserole, or in a soup.

The people of the Andean sierra get a significant proportion of their animal protein from guinea pigs. More than three-quarters of the inhabitants of Lima have eaten one at some time or another, and more than half the city's population breeds them at home. Improving the marketing of guinea pigs could easily increase consumption in the capital. A survey has shown that the supply in Lima is irregular and that the guinea pigs are sold live, which puts off some potential consumers.

Guinea pigs are linked with cooking, celebration, and myth. One belief is that eating black guinea pigs will make arthritis disappear.

Most people who raise guinea pigs do so

for their own consumption or to exchange them for other food such as rice. These "microlivestock" are still raised in the traditional way, close to the heat of the hearth. It is a family activity, mainly the responsibility of women and children.

In Peru, often as many as several dozen animals are allowed to live under the household stove, though sometimes they are kept in little enclosures built of adobe bricks. They are fed on table scraps such as potato peelings, carrots, and lettuce, as well as on banana leaves, alfalfa, and various grains bought for them at the market.

Guinea pigs are easy to raise and they breed rapidly. They are domesticated and don't run off, even if they get the chance. Being timid, they hide at the slightest movement made by their owners or visitors.

People believe that guinea pigs love smoke and heat, which is why they set them up in the kitchen. The truth is that these animals have imperfect cooling systems. Biologists agree that they can withstand temperatures close to freezing, but the heat kills them quite easily, sometimes in less than 20 minutes.

Contrary to what one might imagine, guinea pigs are not a minor species in this part of the world. Peru alone has 22 million of them. They are also eaten by the highland people of Bolivia, Colombia, and Ecuador.

After a gestation period of 67 days, the females produce litters with an average of three young, though the number can easily be as high as eight. Seven females can produce 72 offspring a year, yielding a total of more than 35 kilograms of meat. In Peru alone, 65 million of them are killed every year to produce a total of 17 000 tonnes of meat.

Researchers Lilia Chauca and Marco Zalvidar are devotees of guinea pigs. They have spent 15 years studying them at the experimental station at La Molina in the suburbs of Lima and are playing an active role in breed improvement.

It is said that at the time of the Spanish Conquest, guinea pigs grew to be 35 centimetres long. Nowadays, most adults don't reach even half that length. By careful selection of breeds and controlled crossing, the researchers have managed to "move backwards in time" and produce large guinea pigs.

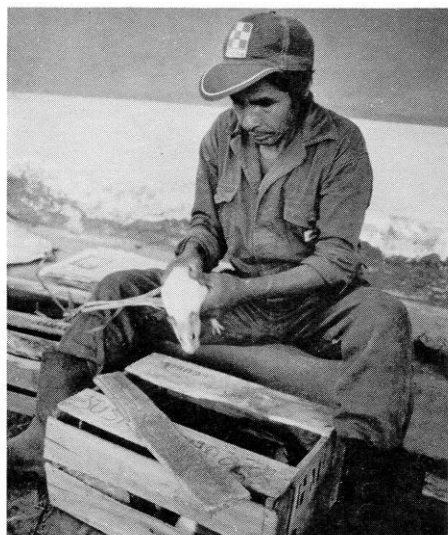
Four types of guinea pig have been developed and are now being evaluated for their adaptability to varied regions and breeding conditions. The animals were selected for the speed with which they gained weight, but their disposition was also taken into account. Calm, docile animals are preferred over more nervous or stressed ones. These characteristics are important if the guinea pigs are to be raised in the kitchen.

The researchers began their work at La Molina station where they have two breeding enclosures that can hold up to 2600 animals. They developed breeds of guinea pig and evaluated their food consumption and growth rates.

Guinea pigs reach adulthood at about four months of age. At La Molina station, they attain a weight of about 1.1 kilograms at three months and, once fattened up, a single guinea pig can feed as many as six people. By contrast, wild Creole guinea pigs weigh less than half a kilogram at three months.

According to Dr Zaldivar, the demand for guinea pigs is on the rise. He is thinking of developing a nationwide Peruvian





Left, every week improved guinea pigs are shipped out of La Molina research station into the surrounding region.

Right, Julio Gamarra, a researcher from northern Peru, displays a fine specimen. Mr Gamarra regularly visits small guinea pig operations in his region to teach appropriate production methods.



network for breeding "supermales" and selling them to peasants. "To do that we'll have to develop animals that are perfectly adapted to the ecological conditions in the various regions of the country—animals for the coast and others for the sierra. We have developed breeds and simple techniques for raising them which make it possible to triple meat production without increasing the number of animals. Where producers now get three or four females a year by breeding, it is possible to produce as many as 10 animals."

These improvements stem from detailed selection and better feeding. The new breeds grow faster and are larger. In addition, their breeding cycle has been shortened. Females reach sexual maturity at between 6 and 8 weeks instead of at 13, males at between 9 and 10 weeks instead of 12. With a little care, such as washing the animals to rid them of parasites, producers benefit from the prolific nature of guinea pigs.

Dr Chauca, who heads the research project, recommends early weaning and the separation of males from females. One enclosure can be used for breeding—a single male services a group of seven or eight females. Another enclosure can house the young guinea pigs and remaining adult females. "Sometimes there's a problem getting people to accept the idea of raising guinea pigs in small enclosures," explains Dr Chauca. "Producers, particularly in the central region of the country, believe that guinea pigs breed better running free. But what happens is that the males fight for the females and the number of abortions is high." Uncontrolled breeding also leads to inbreeding which produces offspring with low resistance to a variety of diseases.

Dr Chauca has proposed a series of simple methods for families which raise guinea pigs at home. These suggestions have been built into courses attended mainly by women and adolescents like Nilda Quiroz Perez, of Llacanora, near Cajamarca in the north of Peru.

Nilda is 13 and looks after the guinea pigs owned by her family. "I haven't got many animals just now because we had a big party and had to kill about 20," she explains to a visitor while showing him her finest specimens.

One thing the women and children have learned is to identify pregnant females which all too often get thrown into the stew pot by mistake. Pregnant guinea pigs can be distinguished by their slow movements and portly look. "This simple aspect of raising guinea pigs greatly modifies a family's level of meat production," says Julio Gamarra, project researcher for the Cajamarca region, a rich agricultural valley in the North of Peru.

Dr Gamarra works in the region with about 15 families that raise guinea pigs. "A peasant will often have only males, because invariably he catches pregnant ones," he says. The researchers give producers a supermale bred at the station in exchange for another male. That protects the animals from degenerating as the result of inbreeding. "The peasants are usually pleased. But if things don't work out, we promise to hold a barbecue for them!"

Dr Gamarra takes his time. He knows that developing a farm-based production project is full of surprises.

"Sometimes all the animals we've marked get eaten between one visit and the next, which makes it impossible to keep up our research (weighing animals or checking their state of health). Sometimes too, the people are reserved. They don't like someone coming and telling them what to do. That's perfectly normal. They have to be won over. Only after that's been done can the work begin.

"I visit them every week. The first six months gives me the chance to observe their production methods. Then I spend the next six months trying gently to change how they do things."

The peasant women and their children then learn the rudiments of the improved production system: how to separate out the pregnant females, when to wean the young ones, and how and what to feed them. The researchers recommend, for example, that the animals be fed two or three times a day rather than once. This speeds up their weight gain.

The women and children also learn the importance of cleaning up the guinea pigs' droppings and washing the animals to keep them free of parasites. The droppings give off heat which is harmful to the animals and can spread a number of human diseases—salmonellosis, for example.

In the village of Jesus, Julio Gamarra has been working with a "cuyeria", a little restaurant that serves a clientele of guinea pig meat lovers. Thanks to Dr Gamarra, the owner is raising more than 100 of the larger "improved" guinea pigs in his backyard.

Dr Gamarra is also helping out Julia and Herrero Pastor, both carpenters. They keep rabbits in raised hutches in their barn, while the guinea pigs occupy the floor. Thus, the guinea pigs can pick up any food that falls from the hutches. It is a simple way to integrate two kinds of animal production without taking up too much space.

These few techniques have provided the peasants of Cajamarca, Junin, Huanayo, Puno, and Lima with a simple way to improve their diet and, in some cases, their income. The only real losers are the guinea pigs whose life expectancy is shrinking inexorably from seven years to only few months. But who among the guests at the fiesta is going to complain about such research results? ■