

## **CAN RABBITS SOLVE THE ANIMAL PROTEIN REQUIREMENT OF YEMEN?**

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Though Yemen is considered among the least developed countries, it has the richest agricultural potential of all the countries in the Arabian Peninsula. The country has been well known for its terraced farms and irrigation systems for several centuries. According to official information, 70% of all active persons are employed in agriculture (this figure does not include migratory workers). Agriculture is largely subsistence oriented and heavily dependent on weather conditions. Thus, agricultural production fluctuates widely. The very low rainfall occurs essentially in two short seasons of summer rains.

Cattle, sheep, goats, donkeys, camels and chickens are raised in the Yemen Republic (see tables 1 and 2 for livestock numbers and production). The average Yemen farmer's animal husbandry methods are largely those of ancient times. Individual farmers let their chickens roam around homes and courtyards. Cattle, used for meat, milk and labor, include the humped Zebu (similar to the South African Zebu). Cattle breeding is a problem in parts of the country because bulls are not available in every village. Another problem is the slaughtering of calves at different ages depending upon the fodder situation, animal growth and prices. In the highlands, cows and oxen are kept in the lower story of the farmer's own house and are fed mainly by hand (so-called "force feeding"). Sorghum straw is broken into 30-30 cm lengths and then bound with lucerne or other green fodder before being pushed into the animal's mouth. This type of feeding takes up a lot of time (3 hours twice a day) and is done by old people, women and children. Sheep are used mainly for meat and milk; wool and fat are secondary products. All sheep are of the fat-tailed type. Goats are herded with sheep. Two types of goat breeds are seen; the most common is a small black long-haired type of Arab desert goat.

In general, Yemen's meat requirement is largely dependent on importation which, considering the scarce resources for foreign exchange, goes deep into the national coffers. Large scale poultry programs in Yemen are dependent upon imported feeds and cannot be sustained at the present rate of importation. Although many factors affect the development of livestock production - ecological, social, economical and technical - feed resources are the main obstacle to improved livestock production. Fodder supplies (range) fluctuate seasonally, and grasslands do not provide an adequate nutritive basis for the number of grazing animals. As a result, over-grazing threatens to cause serious ecological damage.

Table 1. Livestock numbers in the Yemen Republic.

Species	Year	
	1988	1989
Sheep	2674002	2746200
Goat	1709000	1726090
Cattle	1052999	1082272
Camel	62600	63789
Local hens	4266000	4351320
Commercial hens	79166000	11760000

Source: Agricultural Statistics Year Book 1989.

Table 2. Animal production in the Yemen Republic (1988-1989).

Item	Unit	Year	
		1988	1989
Red meat	MT*	25235	25740
White meat	MT	76664	58800
Milk	1000 MT	114	117
Skins	MT	4709	4803
Eggs	Million	255	265
Wool	MT	2197	2241

Source: Agricultural Statistics Year Book 1989.

\* Metric ton.

Rabbit meat may provide an answer to the problem of protein intake for the rural population. It is the only meat without taboos as to its consumption, either on religious

or ethnic grounds. The most common rabbit in Yemen is a local species called "Baladi". It is fairly small in size and varies in color from brownish to grayish. In response to the Director General of the Food and Agricultural Organization's call for the adoption of rabbit meat as a rapid means of alleviating world meat shortages, especially in developing countries, an integrated rural development project of modern rabbit keeping was introduced. Results of a survey meant to elucidate unfavorable attitudes towards rabbit meat and production were as follows:

- 1) Most farmers were willing to keep rabbits. The only complaint was that rabbits dig and destroy the foundations of their houses. The Baladi type is very small and the only way of keeping it is to let it dig a burrow. Farmers were not familiar with distinguishing between sexes and in-breeding was a big problem since all rabbits were kept together. If an animal was needed for meat, it was brought food and caught randomly. The answer to the above problems was the introduction of modern cages. A carpenter was hired to show the farmers how to build rabbit cages.
- 2) Another complaint was that during slaughter, rabbits made a shrill noise that sounded like a child yelling. A better and quicker method of slaughter in accord with religious practices was introduced.
- 3) One or two farmers were concerned with the one month gestation period. They thought rabbits had a monthly menstrual cycle similar to the human cycle and thus their meat would be prohibited. Although the Koran in no way prohibits rabbit meat, production and consumption are low in most Arab countries except Egypt, Morocco and Sudan. It is worth mentioning that the guinea pig is an appreciated source of meat, especially for women who have recently given birth.

A project to encourage rabbit production and consumption in Yemen has been established. A total of 47 rabbits, 40 females and 7 males of New Zealand White and Californian breeds, were imported from Burkino Faso (a German project there) and distributed to farmers that had built cages for them. The rabbits were fed alfalfa (lucerne) and vegetable residues. Villagers were trained by extension personnel how to keep rabbits. The initial population of 47 rabbits expanded to 290 rabbits after 2 years. Through the rural development project, rabbit raising spread around the project area. There are now about 67 farmers in the area who raise rabbits and even one restaurant that serves rabbit meat. The question raised is, can rabbits solve the low animal protein intake of the country? Considering the constraints to development of livestock production, rabbits without a doubt could solve part of the problem. Rabbits utilize forage protein better than most livestock. They have a rapid rate of growth and reproduction and, above all, the meat quality is excellent. According to a report by the USDA (1963), rabbit meat was shown to rank highest in protein and lowest in fat content and calories compared to beef, chicken, lamb and pork. It is regarded in certain developing countries, e.g. Egypt, as a potential source of meat (Schlolaut, 1981; Lebas, 1983) and has been called an "animal protein factory" (Cheeke, 1986). Yemen's climate

is ideal for rabbit raising except for the sub-tropical zones where it is very hot. Rabbits possess many other attributes that would make them ideal for the Yemen farmer. Many business-minded people in Yemen would like to start commercial rabbit projects; however, at this stage, without highly skilled labor and management, rabbit production is not a press-button industry. It is advisable to keep it at rural levels, with rabbits replacing local or traditional chickens as meat animals.

#### References

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