

RABBIT PRODUCTION IN NORTH AMERICA

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Introduction

Compared to other livestock enterprises, rabbit production is a very minor activity in North America. The situations in Canada and the USA are similar, so will be discussed together. Although the economic impact of rabbit production is small, large numbers of people raise rabbits for pets, hobby and exhibition purposes. Therefore, the importance is greater when viewed in the context of the number of people influenced by the activity.

As in other countries, rabbit raising had its beginnings in the USA as a small, back-yard activity. The major peaks of interest in meat rabbit production have been in periods of economic hardship, as during the two World Wars and the 1930's economic depression. Under these conditions, the attributes of the rabbit for meat production with little economic input but considerable labor input become apparent. When the economy improved, interest in rabbit raising waned.

Besides meat production, Angora wool and Rex fur have been of cyclical interest. In the case of the Rex rabbit, there have been at least two attempts, with the second in the 1970's, to establish a Rex fur industry. The efforts have been made largely by promoters with a greater interest in raising money than in raising rabbits, so the ventures have generally failed. Rex fur, in spite of its high quality when correctly produced, has not become well established in the marketplace. Interest in Angora wool production occurs in cycles, with the cycle ending when it is realized by participants that it is not an economically viable commercial activity. However, there are a large number of people who raise Angora rabbits and utilize the wool in home craft work.

Another discernible trend has been the periodic announcement of the development of large scale commercial rabbit production enterprises, with grandiose plans of thousands of breeding animals integrated with a slaughter plant, fur manufacturing facility, restaurants, etc. These schemes have yet to succeed in the USA. However, the successful development of one of these enterprises could markedly alter the American rabbit industry.

Despite this somewhat discouraging past for the rabbit industry, there are indications that commercial rabbit production may become more important because of the solution of some of the technical problems which have limited the past economic success.

Present Status of the Rabbit Industry

The present North American rabbit industry is quite small. There are about 200,000 people engaged in some aspect of the rabbit business. Over 4.5 million kg of rabbit meat are marketed annually. The majority of rabbit raisers are hobbyists who raise rabbits for exhibition purposes. Most fanciers have 20 does or fewer, although some have larger units and are also involved in commercial rabbit production. The commercial meat industry is centered around northern Arkansas, where the largest processing plant, Pel-Freez Rabbit Processors, is located. The major markets for rabbit meat are in the large cities (e.g. Boston, New York, Los Angeles, Toronto) where there are large ethnic populations of European origin. In most parts of the USA, there are small processing plants, marketing rabbit meat locally. Thus there is small scale commercial production virtually all over the country. Most commercial rabbit producers have 50-100 does. The enterprise is a part-time activity. Full time rabbitries where rabbits are the sole source of income generally have at least 500 does. There are a few 500-2000 doe rabbitries in the USA. Almost all of the commercial meat production involves the New Zealand White breed, with a small number of Californians. There is very little use of crossbreeding or hybrids, in contrast to the European situation. Herd selection programs based on scientific principles are only just beginning to be employed.

Virtually all commercial rabbit production involves the use of pelleted feed. There is little feeding of hay, greens, or other supplementary feeds. Most commercial feeds contain alfalfa meal as the major ingredient, with other ingredients being wheat milling by-products (e.g. wheat middlings), soybean meal, cottonseed meal, and grains (oats, barley and corn). Most diets contain 16-18% crude protein, and at least 15% crude fiber.

In recent years, the buildings and equipment used in rabbitries have improved substantially. Buildings are either open-sided and naturally ventilated, or totally enclosed with some type of mechanical ventilation system. Cages are of the hanging wire type, equipped with metal feeders and automatic watering systems. Feeding is done by hand. Manure removal is done by hand or with scraper systems. A few rabbitries have water-flush manure removal systems.

Use of computers for record keeping and daily work assignments is quite widespread. Artificial insemination is used to some extent. Post partum rebreeding is rare; most mating schedules are 2-4 weeks post-kindling.

Other types of commercial rabbit production are very minor. Rex fur production has not developed to a significant extent. Angora production is primarily a hobby activity rather than a commercial venture. There is currently quite a lot of interest in the German Angora, because of its potential for high wool yields.

The factors which have limited the growth of the rabbit industry in North America are complex. Cultural factors have a role. North Americans do not have a tradition of raising and eating rabbits, so the market must be developed. The same factor has similarly limited the development of the sheep industry. Thus the market demand has been quite small. On the production side, high feed costs, diseases (respiratory disease and enteritis), high labor requirements, and low productivity (about 30-35 fryers per doe per year to market) have all contributed to a lack of economic viability of rabbit production.

Raising Rabbits for Exhibition Purposes

Large numbers of rabbits are raised for exhibition purposes. The American Rabbit Breeders Association (ARBA) was founded in 1910 and is the official organization which sanctions exhibitions and shows, licenses judges, and promotes and encourages rabbit raising. Each year, the ARBA sponsors a national convention, at which 5000-10,000 animals are exhibited. This year (1988) will mark the 65th national convention. There are about 33,000 members of the ARBA. Within each state are many ARBA-chartered rabbit clubs, which sponsor local rabbit shows. There are also about 40 specialty clubs for the major ARBA-recognized breeds. The major breeds of rabbits raised for exhibition purposes are Angora, New Zealand White, Californian, Rex, Netherland Dwarf, Lops (French, Holland, Mini), and Satin. In addition to ARBA activities, the extension services in each state support youth (4-H) rabbit projects.

Rabbits as Laboratory Animals

Rabbits have been extensively used in biomedical research. They have been widely used in studies of atherosclerosis, because of their susceptibility to the disease, and the easy induction of hypercholesterolemia in this species. However, the most common use is in the production of polyclonal antibodies.

Although many universities and research institutes produce their own rabbits for basic research purposes, it is very common to purchase animals from an outside supplier. Production of laboratory animals is the most profitable aspect of commercial rabbit production. However, high standards of animal hygiene and management, record keeping, etc., are needed to make a success of this business.

The New Zealand White is the major breed used as a laboratory animal. Significant numbers of the Dutch and Florida White breeds are also used. There is an increasing trend to use pasteurilla-free animals.

Use of rabbits as laboratory animals has come under increasing assault from animal rights organizations such as HARE (Humans Against Rabbit Exploitation). Efficient security measures are required to protect laboratories and laboratory animal suppliers from vandalism and sabotage.

Research Activities

Research on rabbit production (as opposed to biomedical research using rabbits) has been quite limited in North America, reflecting the small size of the rabbit industry in comparison to other types of livestock production. The USDA Rabbit Experiment Station was established near Los Angeles (Fontana), California, in 1928, and closed in 1960. George S. Templeton was the only Director of the Rabbit Experiment Station, which was closed when he retired. The USDA Station was responsible for a considerable amount of good research data on nutrition and feeding, diseases, genetics and rabbit management. In 1978, the Oregon State University Rabbit Research Center was established through industry support. The OSU program emphasizes disease, feeding and nutrition research. Other active university programs include the International Small Livestock Research Center at Alabama A and M University, and the Center for Small Farm Research at Southern University in Baton Rouge, Louisiana. Rabbit breeding and genetics, and the use of rabbits in developing countries for meat production, are main areas of emphasis of the International Small Livestock Research Center, while management and reproductive physiology are principal activities of the Southern University program. The most extensive Rex rabbit research program in the USA is at Brigham Young University, Provo,

Utah. There are several other universities at which some rabbit research is conducted. Although modest by the standards of other areas of animal science, these programs are enthusiastic, vigorous and oriented towards practical problems of rabbit production, rather than doing basic research. They are contributing to the solution of important problems, such as enteritis and pasteurellosis, which plague the rabbit industry. In addition, significant research is conducted at several Laboratory Animal Institutes. The Laboratory Animal Program at Rutgers University, for example, has made significant contributions to the understanding of the etiology of enteritis. Several feed companies have rabbit research programs, but the results are not usually made public.

Publications

The major books dealing with technical aspects of rabbit production are:

ARRINGTON L.R., KELLEY K.C. 1976. Domestic Rabbit Biology and Production, Univ. of Florida Press, Gainesville.

CHEEKE P.R., PATTON N.M., LUKEFAHR S.D., MCNITT J.I. 1987. Rabbit Production, The Interstate Printers and Publishers, Danville, IL.

CHEEKE P.R. 1987. Rabbit Feeding and Nutrition, Academic Press, San Diego, CA.

HARKNESS J.E., WAGNER J.E. 1983. The Biology and Medicine of Rabbits and Rodents, 2nd Ed., Lea and Febiger, Philadelphia.

WEISBROTH S.H., FLATT R.E., KRAUS A.K. 1974. The Biology of the Laboratory Rabbit, Academic Press, New York.

There are numerous popular press books on rabbit care and husbandry. The primary scientific journal dealing with rabbits is the Journal of Applied Rabbit Research, published by Oregon State University. The ARBA publishes Domestic Rabbits, a magazine primarily of interest to fanciers. Rabbit Gazette is another popular press magazine.

Information is disseminated from researchers to rabbit raisers by seminars and symposia sponsored by rabbit breeding clubs. The first North American Rabbit Congress (NARC) was held in Portland, Oregon, in 1987. The second NARC will be held in Springfield, Missouri, in 1989.

Although the rabbit industry in North America is small, great strides have been made in developing a technical and research base. Whereas in the 1960-1970 period there was very little rabbit research, except perhaps for some private feed-company programs, there are now a number of viable and productive research programs studying practical problems which have limited the success of rabbit breeding. The development of a pasteurella-free rabbit at Oregon State University is an example of advance which has eliminated one of the major disease problems. Although practical solutions to enteritis have not yet been developed, the understanding of the physiological and microbiological basis of enteritis has greatly advanced. A solution to enteritis will come about only with a complete understanding of the etiology. Other research on improving reproductive efficiency, developing superior breeding stock and genetic selection programs, and new technologies for rabbit production can all be expected to contribute to improved economic efficiency of the industry.

It is likely that as specific problems are researched and solutions found, the American rabbit industry will gradually develop. A major opportunity for expansion of rabbit production arises because of the shift in the American diet from red to white meat, and the efforts to reduce fat intake. Rabbit meat is a lean, white meat product. Whether the rabbit industry has the foresight and the financial resources to take advantage of this opportunity remains to be seen.

This review may seem to present a negative view of the North American rabbit industry. This is probably inevitable if a true account is to be given. The American rabbit industry is small, economically marginal, and there are few signs that this will change greatly in the near future. To say otherwise would be a disservice to those interested in knowing the true status of the industry. Nevertheless, there are at least 40,000 rabbit raisers in North America, most of whom derive great pleasure from this activity. The demographic trends of the human population indicate an aging of the population, and a concern about fat and cholesterol intake. This represents an immense opportunity for the commercial rabbit meat industry.

Acknowledgement

I appreciate the assistance of Drs. S.D. Lukefahr, J.I. McNitt and N.M. Patton in the preparation of this report.

