

*LETTER TO THE EDITOR***BRIEF CONDITIONS OF RABBIT FARMING IN CHINA**

YAN HANPING, ZHU MANXING, SHEN YOUZHANG

Academy Agric. Science of Jiangsu, Nanjing 210014
99216 JIANGSU, China.**Quantity and regional distribution**

Rabbit farming in China started in the mid and later 1950s. By the end of 1958, the total number of home rabbits on hand (with long hair rabbits accounting for about 70%) was 7 million. This figure grew to nearly 80 million at the end of 1978. The rabbit farming in China has further developed in the past two decades, and the total number of home rabbits on hand was 178.63 million in 1999 (the highest level in history being 195.26 million in 1998). During that year, 272.8 million rabbits were delivered and a total of 451 million rabbits raised, including 80 million hair rabbits, 369.43 million meat rabbits, and 2 million Rex rabbits producing 409,000 tons of rabbit meat and 10,000 tons of rabbit hair. At the end of 2001, 177.82 million home rabbits were on hand and 258.78 million delivered during the year, with a total of 436 million raised, including 70 million hair rabbits, 356.6 million meat rabbits and 10 million Rex rabbits, producing 406,000 tons of rabbit meat, 10,000 tons of rabbit hair and 500 sheets of rabbit skin. At present, China ranks first in the world in terms of quantity of home rabbits being raised and the rabbit product output, as well as in terms of rabbit hair and meat export (since 1979, rabbit hair export of China has accounted for about 90% of the international trade amount, and rabbit meat export in the peak year of 1979 accounted for about 60% of the world total), and 4065 tons of rabbit hair and 32,998 tons of rabbit meat were exported in 2001.

Rabbit farming is mainly done in 1/3 of the

provinces and autonomous regions of China, distributed in East China (Shandong, Jiangsu, Anhui, Fujian and Zhejiang), North China (Hebei, Henan and Shanxi) and Southwest China (Sichuan and Chongqing). The quantity of home rabbits on hand, delivered and the rabbit product output in these main farming areas account for about 92% of the total in the whole country. Even in these main rabbit farming areas, rabbit farming is also regionalized. In the form of operation, sideline operation accounts for quite a high proportion and there is also a fair proportion of rabbit farming in the form of primary operation, large-scale and specialized raising.

In the species of home rabbits bred, long hair rabbits mainly include German-Angora rabbit, China-Angora rabbit, Anhui series long hair rabbit, and a small amount of French-Angora rabbit. New breeds or groups of long hair rabbits developed in China include Zhenhai giant high-yield long hair rabbit, pearl series long hair rabbit, Jiangsu series coarse hair rabbit, Zhejiang series coarse hair rabbit, Yimeng giant long hair rabbit, Taishan coarse long hair rabbit, and they cover two thirds of the breeding area of the whole country. The main meat rabbit species are the New Zealand White rabbit, Californian rabbit, Japanese white rabbit, Chinchilla rabbit, Belgian hare, checkered giant rabbit, lop-ear rabbit, associated series of Zika meat rabbit, associated series of Elco meat rabbit, China white rabbit, Harbin big white rabbit, Saibei rabbit, Taihangshan rabbit, Anyang gray rabbit, Yufeng yellow rabbit, and Fujian yellow rabbit. The coney rabbits mainly include those introduced from the United States and France and the Rex rabbit of

Germany.

Scientific and technological advances and production level

With our efforts during the past two decades, we have fostered some new breeds and groups with high yield and excellent performance, for example, the annual hair yield level of some long hair rabbit groups have exceeded the advanced international level.

On reproduction and biological technologies: the artificial insemination technology has been extensively applied in large areas, and research on semen freezing, embryo transfer and freezing, in vitro fertilization and genetically modified rabbit have been successful.

On rabbit disease research: breakthrough has been achieved in some key fields, especially in the study of the pathology of viral hemorrhagic disease, and we are now leading the international level, and have successfully developed vaccines for such diseases as viral hemorrhagic disease, pasteurellosis, bronchiseptemia brucellosis, clostridium welchii disease and colibacillosis of rabbits.

On home rabbit nutrients and feed mixing: compound feed and complete granular feed have been well adopted.

On rabbit product processing and utilization: beneficial exploitation has been made, such as developing products of rabbit meat, skin, fur and hair, for example, the Taiyuan Rabbit Hair Textile Mill in Shanxi successfully developed the fine rabbit hair fabric - rabbit hair silk, which solved such difficult problems as easy shrinkage in water, pilling and dropping that has been seen with rabbit hair products, thus raising the utilization value of rabbit hair.

The annual hair yield of long hair rabbits has been increased from nearly 300 g per rabbit at the end of 1970 s to 1500~2000 g at present, and the hair yield of some newly developed breeds or groups of long hair rabbits has reached or exceeded the advanced world level. For example, for the giant long hair rabbits in Zhenhai Stud Rabbit Farm of Ningbo, Zhejiang Province, over 20 experts of the National Rabbit Breeding Committee selected for performance 1000 stud rabbits (200 male and 800 female) with a hair growing period of 73 days, under the leadership of China Animal Husbandry and Veterinary General Station in December 2000. The result: the average one-time hair yield was 343 g, with the maximum body being 493 g, and average estimated annual hair yield being 1715 g for male rabbits, and average one-time hair yield was 388 g, with the maximum body being 591 g, the average estimated annual hair yield being 1914 g, and the maximum individual annual hair yield being 2955 g for female rabbits. The fattening period of meat rabbits has been significantly shortened, from the previous 120~150 days to the present 90~100 days with marketing body weight of 2.5~3.0 kg, and the dress out increased from the previous 40%~43% to the present 48%~50% and over. In the past, one household usually raised several dozens of rabbits, now this figure is several hundred or even one thousand. The large scal farming has increased in proportion, with the specialization and organization degree gradually increasing. In general, great improvements have been achieved in the quality of rabbit skin, meat and hair products in the whole country.

System construction and socialized services

Training of personnel: starting from over 20 years ago, the science of rabbit farming was included as special courses in higher schools of agriculture, and courses on rabbit farming also opened in some secondary professional and

vocational schools, and large numbers of technical personnel on rabbit farming have been trained. Research and technical popularization in rabbit farming: most provincial level agricultural science research institutes have organizations to study rabbit farming, and specialized personnel are staffed to conduct research on home rabbit breeding, feed nutrient requirements, rabbit disease prevention and treatment and rabbit product development. In addition, in main rabbit farming areas, such as Shandong and Zhejiang, dedicated research institutes for rabbit research have been set up, and research departments have been established in large rabbit raising enterprises. While conducting research and popularizing scientific and technological results on the rabbit industry, these research institutes also conduct technical training, to advance rabbit farming science and technology.

Scientific popularization: with the development of rabbit farming, to better popularize the scientific and technological knowledge on rabbit farming, the scientist in China on rabbit farming have written hundreds of books on the subject with respect to the needs of people with different cultural levels; in 1982, the bimonthly CHINESE JOURNAL OF RABBIT FARMING started publication, and it has nearly 100 issues, with due regard to both popularization and upgrading. Some specialists and professors engaged in rabbit farming and relevant organizations or institutions have compiled and printed special technical papers and information on rabbit farming. In addition, knowledge, technologies and information on rabbit farming are publicized via modern media, such as TV, radio broadcasting and the Internet. Holding training classes and lectures is also one of the frequently adopted forms to popularize the rabbit farming knowledge and the new technologies for rabbit farming.

Rabbit farming organization: in 1981, China set up a national rabbit farming organization “National Rabbit Breeding Committee”. Under the leadership of the State Ministry of Agriculture, it organizes the relevant organization to conduct scientific and technological cooperation on rabbit farming, and to conduct investigation and research and provide technical consultation for governmental departments and rabbit farming households with market as the orientation and in close connection with production; it also formulates technical standards or procedures, to normalize and guide the home rabbit breeding, organizes rabbit farming experience exchange and academic research, and publishes journals on rabbit farming, playing an important role in popularizing the scientific rabbit farming knowledge and pushing ahead the scientific and technological advancement of rabbit farming in China. In 1996, the World Rabbit Science Association (WRSA) China Branch was established. It organized the WRSA members in China to participate in international exchange, so that our counterparts in the world can better know the rabbit farming of China.

Activities: The National Rabbit Breeding Committee organizes professional activities every year since its establishment, such as academic seminars, field consultation and rabbit product transactions, etc. In some main rabbit farming areas, home rabbit competitions have been held at different levels at fixed intervals, competitions for long hair rabbits are more active. Since 1998, large scale national seminars on rabbit farming have been held once a year by the China Animal Husbandry and Veterinary General Station of China Ministry of Agriculture, WRSA China Branch and the National Rabbit Breeding Committee, and for the first three, the WRSA chairman and secretary general were invited.

International cooperation: Starting from the 1980s, economic and technological cooperation has been conducted in Jiangsu, Shandong, Zhejiang, Anhui and Jilin of China with Germany, France and the United States in the field of rabbit farming. By introducing good breeds and advanced technologies for rabbit farming, the development of scientific and technological progress in rabbit farming of China has accelerated. In 1988, China attended the Fourth World Rabbit Science Conference for the first time, and China attended all the subsequent World Rabbit Science Conferences.

Stub rabbit production: China now has two national level stub rabbit farms, and there are many stub rabbit farms at fair scale in main rabbit farming areas, to foster stub rabbits for the three categories of hair, meat and coney. Some of them have their unique characteristics in developing stub rabbits with rich achievements, for instance, Zhenhai Stub Rabbit Farm in Zhejiang Province fostered the Zhenhai giant high-yield long hair rabbit, which features large size, dense hair and high yield of hair, the average annual hair yield in large group is 1700~2000g.

Feed and cage equipment production: most of the rabbit farming households prepare feed by themselves. There are some feed companies

producing complete pellet feed for rabbits and special additives, and supplying them to rabbit farming households. In recent years, large scale rabbit farming has been developing quite rapidly in China (developing specialized households over the whole country, and most of them have small granulating machines and prepare complete pellet feed by themselves). Cage and equipment production has also gained rapid development, especially small granulating feed machine, automatic water and feed equipment, for which there are specialized manufacturers.

Rabbit product processing and marketing: in recent years, rabbit product processing has laid a fair foundation in China. There are fixed processing enterprises for rabbit hair, meat and coney, to produce semi-finished or finished products, and the product lines have gradually been diversified in series. In major rabbit farming areas, rabbit hair markets or rabbit meat fairs have been set up, as the main places to market rabbit products, as well as windows to get information on rabbit product markets, to enable connection of producers with market.

With China's accession of WTO, the strategic readjustment of agricultural structure and the implementation of the strategy to develop the West, the rabbit farming in China will have new opportunities of development, with broad prospects.