

CONSERVATION PROGRAMME FOR THE NATIVE POLISH BREED OF POPIELNO WHITE RABBITS*

Bielański P.*, Kowalska D., Wrzecionowska M.

National Research Institute of Animal Production, 32-083 Balice, ul. Krakowska 1, Poland

*Corresponding author: pawel.bielanski@izoo.krakow.pl

ABSTRACT

Acting in accordance with the principles of the Convention on Biological Diversity, in 1996 Poland started to implement the FAO's Global Plan of Action for Animal Genetic Resources. A programme for conservation of animal genetic resources was established as part of biodiversity conservation. Among the farm animals conserved in Poland is Popielno White rabbits. In 1999, when the genetic resources conservation programme was launched, the population size of Popielno White rabbits was just 30 females of the foundation stock. By 2011 a herd of 258 does, subjected to performance recording and estimation of breeding value, was kept on 7 farms. In addition, over 200 does are now kept in commercial farms engaged mainly in rural tourism. Breeders acquired them as a result of various training programmes for areas at risk of structural unemployment.

Key words: Popielno White rabbit, genetic resources conservation, rabbit population

INTRODUCTION

In the Middle Ages, rabbit farming reached the countries of Central and Eastern Europe thanks to monks from monasteries. The first written mention of this animal species in Poland comes from the 10th century from a monastery in Świątniki, south of Cracow. Many utility breeds became popular across Western and Eastern Europe after the end of the French-Prussian War in 1871. However, the tradition of rabbit husbandry and breeding began as late as the 20th century.

Following World War II, the rabbit population in Poland was estimated to be about 15 million animals of the foundation stock. Most rabbits were of unknown breeds and were kept in an extensive system in floor pens. Feeding was based on kitchen waste and forage. In the 1960, rabbit husbandry began to develop when frozen carcasses were exported to Western European countries. In the next decade, rabbit production continued to develop, especially in the cooperative and state sector. During that time, the rabbit population was estimated to exceed 20 million females, with the annual meat production of 26,000-27,000 tons. In the 1980s, annual rabbit production decreased to approximately 20,000 tons of meat when the socialist economy collapsed and high subsidies to the cooperative and state sector were abandoned. Rabbit husbandry was concentrated in backyard farms.

After the systemic transformations of 1989, rabbit production suffered a decline and one of the breeding areas (Angora rabbits) completely disappeared.

The agricultural census conducted in June 1996 showed that there were 1,090,908 foundation stock females of all rabbit breeds. 83.4% of the population was found in farms with 1 to 9 does. On the national scale, only 5.1% of the female population were kept in farms with more than 20 foundation stock females. The next agricultural census of June 2002 reported the number of foundation stock females in Poland to be 870,351. In 2011, the size of the female population decreased to 631,520 animals.

MATERIALS AND METHODS

Acting in accordance with the principles of the Convention on Biological Diversity, in 1996 Poland started to implement the FAO's Global Plan of Action for Animal Genetic Resources. The National Research Institute of Animal Production coordinates the conservation of the genetic resources of the native farm animal breeds in Poland. By virtue of the law of the Polish Parliament (Law Gazette of 2003 No. 106, item 1002 of 21 August 1997), farm animals also include fur-bearing herbivores and carnivores. They reflect sound breeding practices and provide a genetic reserve for future generations of Polish breeders. Special attention has been given to Popielno White rabbits (Figure 1).

Figure 1. Popielno White rabbits on free range.



RESULTS AND DISCUSSION

Popielno White rabbits are a native breed created from the no longer existing Polish Albino breed. Research on the creation of the breed was initiated and supervised in 1950 by Prof. Z. Kaminski. The initial work was carried out at the Experimental Station of the National Research Institute of Animal Production in Chorzelow, and since 1955 the work has been continued at the Experimental Station of the Polish Academy of Sciences in Popielno, which lent its name to the breed.

Breeding work was based on 20 Polish albino rabbits purchased at a market. The average weight of these rabbits was 2.5 kg. Some of these rabbits were used in the late 1950s to create a herd, which was crossed once with Belgian Giant Grey rabbits to increase body weight. Polish White females were crossed with Belgian Giant Grey males, and Belgian Giant Grey females were crossed with Polish White males. Each female was successively mated to two males. The resulting crossbreds had grey coat colour and were inter se mated. In the second generation, rabbits with albino coat colour were obtained in addition to rabbits with grey coat colour. The albino rabbits were used as a basis of further breeding. Albino crossbreds were inter se mated. Litters were limited to two rabbits to ensure better growth and development of the young. For several years, pregnant females were kept in semi-open conditions to improve hair coat in the offspring. Animals were kept in outdoor wooden cages, which provided rough rearing conditions in the winter. As a result, a herd of rabbits characterized by uniform, albino coat colour was obtained in Popielno in 1964.

The work on the Popielno White rabbit was continued by Dr W. Karłowicz. Thanks to his efforts, in 1965 the rabbit farm was moved from Popielno to the Institute of Animal Genetics and Breeding of the Polish Academy of Sciences in Jastrzębiec. The Popielno White rabbit was further improved in Jastrzębiec by a team from the Selection Methods Laboratory, led by Dr Karłowicz. The long-term research and selection work resulted in the consolidation of phenotypic traits and of the major production traits.

It has been possible to test the performance and breeding value of the Popielno White rabbits since 1989, when the Ministry of Agriculture and Food Economy approved the breed standards.

In 1999, when the genetic resources conservation programme was launched, the population size of Popielno White rabbits subjected to performance recording and estimation of breeding value was just 30 females of the foundation stock (Figs. 2 and 3). They were maintained on only one farm, at the Institute of Animal Genetics and Breeding of the Polish Academy of Sciences in Jastrzębiec near Warsaw. Because of such a small population size of this native breed of rabbits, which represents a valuable repository of genetic diversity for this species, it became threatened with extinction.

Figure 2. Number of farms with Popielno White rabbits

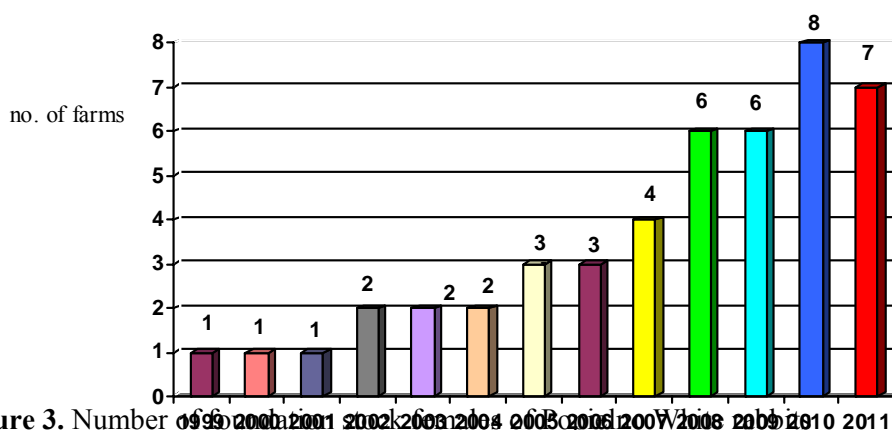
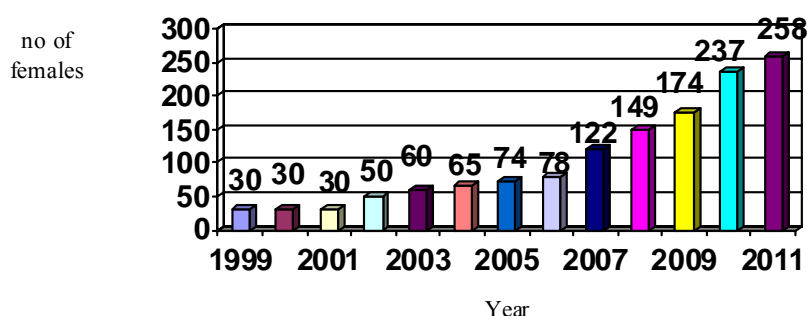


Figure 3. Number of females of Popielno White rabbits



After subsidies in support of the rabbit does were introduced in 2003, the number of performance recording farms, those estimating breeding value, and commercial farms began to rise. By 2011, a herd of 258 does was distributed over 7 farms. In addition, over 200 does are now kept in commercial farms engaged mainly in rural tourism. Breeders acquired them as a result of various training programmes for areas at risk of structural unemployment.

The current genetic resources conservation programme has the following goals:

- To preserve the population of Popielno White rabbits and to increase its population size to at least 350 foundation stock females.
- To maintain the breed standard and specific productive traits such as high fertility and prolificacy, good maternal ability, rapid rate of growth, and low feed consumption.
- To maintain genetic variation in the population being conserved.

Popielno White rabbits were considered to be suitable for amateur breeding in backyards (Krupinski *et al.*, 2006). A study by Piotrowicz (1967) showed that this breed produced 7.2 young per litter at birth and only 4.6 rabbits at 1 month of age. Studies carried out 40 years later confirm the high prolificacy of the breed under commercial farm conditions (Bielanski *et al.*, 2008, 2009 & 2011). A disadvantage of the breed is considerable mortality of young rabbits during rearing with mothers. According to Piotrowicz (1967), it exceeds 60%. The result obtained by Kowalska and Bielanski (2011) is much lower, but still exceeds the mortality of New Zealand White rabbits by approximately 10%.

In a study by Bielanski *et al.* (2010), weight gains of Popielno White rabbits were high and their body weight at 90 days exceeded 2500 g. Also dressing percentage was at a level reported by Piotrowicz (1967) and slightly higher than in New Zealand White rabbits. Research conducted over the last few years at the National Research Institute of Animal Production determined the possibility of using Popielno White rabbits in the organic and commercial production systems (Kowalska and Bielanski, 2011).

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