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**Rafay J.**

**Situation and prospects of broiler rabbits breeding in Slovakia**

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## Situation and prospects of broiler rabbits breeding in Slovakia

Rafay J.

Research Institute of Animal Production, Institute of Small Animal Breeding  
Hlohovska 2, 949 92 NITRA, Slovak Republic

### Abstract

The small-scale breeding prevails in rabbit production in Slovakia, and it represents nearly 94 % of the total production. However, during the last years began intensive development of farm breeding in large-scale conditions with intensive way of production. Total annual production of rabbits is about 5 - 6 million slaughter rabbits in Slovakia, i.e. about 1.9 kg meat per inhabitant. The breeds NZW, Cal, French Silver and Chinchilla are the most represented in this amount. The proportion of rabbits kept on farms rose during the last 5 years. Specialized meat lines from abroad and home gene pool are used in large-scale breeding systems. Further on there is presented information about breeders' associations, breeding technologies, nutrition and feeding, veterinary care, breeding work, organization of bulk purchasing and processing of slaughter rabbits, home consumption, and possibilities of further development in broiler rabbits breeding. Breeding of rabbits is considered to be a prospective branch of animal production in Slovakia, which brings economic and social benefits to the country.

### *Structures of production*

Commercial breeding of broiler rabbits is in Slovakia performed by two independent groups. In the *first group* are herds of not more than 10 females of the basic stock (BS). Reproduction and fattening in these herds is realized in traditional rabbit-hutches with additional feeding with concentrates and dried or green forage. Most of these herds create a part of small holders' facilities at houses in villages and outskirts of towns. The main part of production from such herds are intended for self-supply. The surplus in form of live animals are sold for industrial processing by private bulk buyers. The gene pool of these herds create crosses of pied, chinchilla and other all-colored breeds. Part of the production in this group comes from registered herds of the members of the Slovak Association of Small Animals Breeders ( S.A.S.A.B.). Under S.A.S.A.B. are bred many other breeds (at present about 45 breeds). The slaughter rabbits from this units are animals which do not meet the selection criteria for exterior. They are the New Zealand White, Californian, Nitra rabbit, Large Light Silver, Great Chinchilla breeds and some Vienna rabbits from the most spread breeds. There is noticed also a tendency of gradual change of the genotype structure towards the increase of proportion of specialized types of broiler rabbits.

The *second group* is created by herds with concentration higher than 10 BS. They are mixed herds up to the number of 20-30 females of basic stock. The small holders' factors are being combined with large-scale breeding technologies and techniques. Herds with concentration over 30 females BS are exclusively specialized herds with intensive breeding techniques. There are used breeding animals mostly from abroad (HYLA, ZIKA, HYPLUS) and home resources too. Home broiler rabbit population are comparable with the European standard in majority of qualitative and quantitative parameters of meat efficiency. At present there are in Slovakia 20 farms in operation with broiler rabbits. Their cage capacity is from 50 to 2 000 nest boxes. Total capacity of animals is 6000 does and males of BS with the annual production of about 210 thousand broilers with total live weight some 500 t (Table 1).

**Table 1 :Evolution of number of rabbits in Slovakia between 1993 - 1999**

	1995	1996	1997	1998	1999
<b>small animal breeding (10<sup>3</sup> animals)</b>					
does + males	380	410	400	420	370
fattening	5700	6000	6240	6300	5500
<b>commercial farms (10<sup>3</sup> animals)</b>					
does + males	4.2	4.5	5.0	5.5	6.0
fattening	120	130	150	190	210
<b>part of commercial rabbits from total rabbit population (%)</b>					
does + males	1.10	1.13	1.25	1.31	1.62
fattening	2.10	2.17	2.40	2.92	3.68

#### *Breeders' Association*

The central coordination of commercial breeding activities is implemented by means of professional breeder' association - Association of Broiler Rabbit Breeders (A.B.R.B.). The Association coordinates the economical, zootechnical, extensional and educational activities of its members. A.B.R.B. was established in 1994 and there are associated 45 legal entities and individuals at present. It not only issues the Newsletter and organizes professional meetings but also organizes the sales of slaughter animals, supplies technological equipment and controls the efficiency of animals.

#### *Technologies of breeding*

The endeavor after optimization of construction and machinery-and-technological systems has its origin in negative experiences from the beginning of the nineties when many breeders used unfit housing facilities. It was sustained that the preconditions of successful breeding at higher concentrations are convenient housing areas which enable to keep optimum microclimate adequate to biological needs of the rabbit. Reconstructed cowsheds, buildings for pig rearing or for poultry are used for rabbit rearing in most of the cases. In Slovakia there are not produced suitable cages at present and so many existing herds are kept in foreign cages, most of the technologies are from the Czech Republic (flat deck and two floor cage systems).

#### *Nutrition and feeding*

Production of pelleted feed mixtures for rabbits stabilizes gradually at present. The offer of assortment and quality of mixtures is not ideal, however, it enables standard production of animals with smaller additional corrections. There are still problems to keep the settled quality in mixtures, and with unequal representation of feed mills within the area of Slovakia. Because of the nonstandard mixtures, the breeders are obliged to use laborious substitution feeding regimes (addition of hay or oats to pellets, application of anti-coccidiosis treatments into drinking water, addition of mineral and vitamin supplements, etc.). There exist two producers of complete feed mixtures at present. Their seat is in west Slovakia and this fact increases the price of mixtures by transport costs into other regions of the state. The

majority of feed components comes from domestic sources.

#### *Veterinary care*

The veterinary care for production animals in herds is conditioned by relatively small number of production populations. In fact there do not exist specialists who were engaged in health problems of broiler rabbits only. Most of the diagnoses are determined by the breeders themselves and they apply preventative and therapeutic interventions on the basis of previous experiences. The assortment of veterinary preparations for preventative interventions are sufficient in quantity at present (vaccines against RVHD, myxomatosis, pasteurellosis, coccidiostatics or drugs for coccidiosis preventive treatment). The total mortality from weaning to the carcass processing varies on average from 10 to 20 % in herds.

#### *Breeding work and gene pool of production populations*

The breeding animals and breeding work represent a sphere in which were noticed great changes in approach to the herd turnover. While the first herds were planned to supply production animals to breeding farms permanently, later it turned out that such approach is not possible because of economic reasons. Therefore most breeders began to perform selection to ensure the herd turnover from their own production (closed, continuous system of breeding). These processes are supplemented by irregular import of animals of broiler lines from abroad. These animals are incorporated into the mating program with the aim to eliminate the increase of inbreeding coefficient. The system of meat efficiency control in selected herds within A.B.R.B. endeavors to synchronize partially the uncontrolled process. It is its aim to gain real data about own performance of the individual populations, to define their genetic background and to determine optimum methods in further production. First results from 1997 and 1998 suggest that if the preconditions of accuracy and balance in the control are fulfilled it is possible to gain valuable data which can be used to increase the meat efficiency further.

#### *Organizing of purchasing and processing of rabbits*

The system of purchasing the rabbits from farms depends on production possibilities of these farms and on their localization. The export is the direct warrantor of the existence of most farms with broiler rabbits at present. A.B.R.B. organized for interested breeders regular weekly marketing of broilers through the export which is coordinated with the demands of foreign processors. With regard to the processing capacities of the breeder's customers there exists permanent demand for slaughter animals with requisite parameters of meatiness. A.B.R.B. is looking for possibilities to increase the number of slaughter broilers in these deliveries. The rest of breeders who do not participate in the organized marketing sell the slaughter rabbits either to seasonal customers or they realize their production individually through their own contacts directly to native and foreign processors.

At present there does not exist in Slovakia any large-scale capacity slaughter house for rabbits. The animals are processed either in small slaughter houses with a capacity of some dozens animals daily or there are used the capacities of operations for poultry processing. These are mainly irregular services which provide rabbit meat during the periods of the highest demand. This situation caused irregular supply of rabbit meat to the native consumer's market and the meat is available only in large groceries.

### *Home consumption and foreign trade*

Besides the important possibilities for export, breeding of broiler rabbits represents a possibility of increased offer of dietary meat on the home market. The consumption of rabbit meat in Slovakia is estimated about 1.9 kg per inhabitant and it represents annual production 5 - 6 millions rabbits. As there is neither central registration of rabbit production nor of consumption in Slovakia, the given total number of bred rabbits is an estimate done on the basis of bought off skins, data from members of Slovak Breeders' Association and knowledge of actual situation in the most productive areas in the country. There exist considerable fluctuations in production of rabbits in small herds between years. While in 1989 were produced about 7 millions rabbits in Slovakia (it represented about 30 % total rabbit production in former Czechoslovakia), towards the end of 1999 were only 5.5 millions slaughter animals produced by small-scale producers. The bulk of meat production for home consumption comes from small-scale production of animals which are slaughtered and processed at highlive weight (about 3.3 kg), and dressing percentage about 54 %. In spite of relatively high consumption of this type of meat is the consumption unevenly represented among the individual groups of inhabitants. Most of the rabbit meat is consumed in the families of breeders who supply themselves. The consumption in larger towns is limited by irregular supply limited in volume in large department stores.

Rabbits do not represent significant commodity in the sphere of foreign trade in spite of systematic increase (Table 2). Breeding animals are imported mostly for home breeding, and they are imported from the Czech Republic, Italy or France. Imported rabbit meat represents negligible amount. The export of living rabbits are directed mainly to the Czech Republic and Hungary where they are processed, and the meat is distributed to the West European countries. The export of rabbit meat is minimal since the only industrial slaughter plant ceased to function in Slovakia in 1996.

**Table 2: Data of rabbit export and import in Slovakia (tons / year)**

<b>Export</b>	<b>alive</b>	<b>carcasses</b>
1995	316.2	116.5
1996	179.1	21.4
1997	197.9	0.3
1998	207.0	0.6
1999	270.0	0.8
<b>Import</b>	<b>alive</b>	<b>carcasses</b>
1995	-	0.2
1996	2.4	4.3
1997	0.7	7.8
1998	2.0	-
1999	2.8	-

### *Preconditions of further development of broiler rabbit breeding in SR*

Further development of broiler rabbit breeding in Slovakia is conditional on foreign and home sale. The foreign sales possibilities are favorable at present and for the future, too. The increase of home consumption depends on arrangements and realization of measures to increase the offer of rabbit meat on the home market. Following steps are necessary to achieve it:

- promotion of contribution to human health if rabbit meat is consumed regularly
- creation of suitable capacities for slaughter rabbit processing and for production of goods made of rabbit meat
- efficient support of rabbit farming in which slaughter animals of broiler type are produced in conditions with the required qualitative parameters and under veterinary control.

It is possible to increase the present number of breeding animals kept in farms in Slovakia to 10 000 - 13 000 animals breeding stock without greater investments into housing. It would represent annual production of about 500 000 slaughter rabbits. The increase of rabbit production in form of support of rabbit farms and gradual orientation of the processing industry to home market would enable:

- to contribute to the improvement of the state of health of the inhabitants in Slovakia by increased consumption of dietetical rabbit meat
- to extend the existing assortment of meat and meat products
- to improve the economic realization of the produced slaughter animals
- the farms to be partly independent from the foreign customers
- to create new employment opportunities
- to utilize the existing breeding capacities (buildings for housing, staff, feeding base)

Rabbit breeding can by its specifics also supplement social programs oriented to the utilization of labor potential of people with limited ability to work and to give employment opportunities in regions with high unemployment. From this points of view is broiler rabbit breeding perspective branch of animal production in Slovakia.