

## RABBIT PRODUCTION, EDUCATION AND RESEARCH IN HUNGARY

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### ABSTRACT

At the present time, the rabbit production of Hungary is less than half of the quantity achieved in the peak years, 1982 and 1991. In 2003, the total quantity of the Hungarian rabbit production was 10,932 tons in live and 5,471 tons of home carcass production and 459 tons of carcass import. Very special for Hungary is that the 97-98% of total production is exported, while the proportion of the Hungarian market is very low (2-3%). In 2003, Italy had 44%, Switzerland 28% and Germany a 18% share from the Hungarian export. The shipments included 61% whole carcass and 39% cut products. The majority of the abattoirs are in foreign (Italian or Swiss) ownership. Earlier, 95-98% of the rabbits was produced at small farms, now about 75% of the total production originates from large farms of some hundred or thousand does. The angora wool production peaked in 1986, with a yearly output of 187 tons. At this time, Hungary was the biggest exporter country in Europe. The dramatic drop of wool price pressed the production down and now its quantity is near to zero. At most of the agriculture faculties of the universities and colleges, students can study rabbit breeding as a compulsory or a facultative course. Most of the Ph.D. students finished their study at the University of Kaposvár and some of them on one of the faculties of the „Szent István” University and Eötvös University. One of the main research centres in Hungary is at Kaposvár. There are 500 does at the experimental farm, which is, as well, the selection centre of the Pannon White breed. High-tech equipment available at the University of Kaposvár are the CT and the MRI. The main research activity is in the field of selection, management, reproduction, digestive physiology, meat quality, ethology and animal welfare. The historical centre of rabbit research with traditional breeding of NZW and Californian stocks is the Institute for Small Animal Research at Gödöllő. Their research focuses on management, reproduction and nutrition. The Faculties of Agricultural and Environmental Science and Veterinary Science of the „Szent István” University (at Gödöllő and Budapest) are the centres of nutritional and physiological research. The Agricultural Biotechnology Center at Gödöllő is specialized for the proteins of transgenic rabbit milk. The Eötvös University (ELTE) at Budapest is specialized for the ethology of rabbits.

**Key words:** rabbits, Hungary, production, education, research.

## INTRODUCTION

With regard of the rabbit production in different countries Colin and Lebas (1996) published a book, though similar data were also published elsewhere (Colin and Lebas, 1995). In some cases precise data are available on the rabbit production of the countries throughout the world, but in some instances data are either missing or those are only estimations. World Rabbit Congress events provide good opportunities to publish such information. The aim of the present matter is to present accurate statistical data and information on the Hungarian meat and angora rabbit production, as well as on the state of the education and research.

## MATERIALS AND METHODS

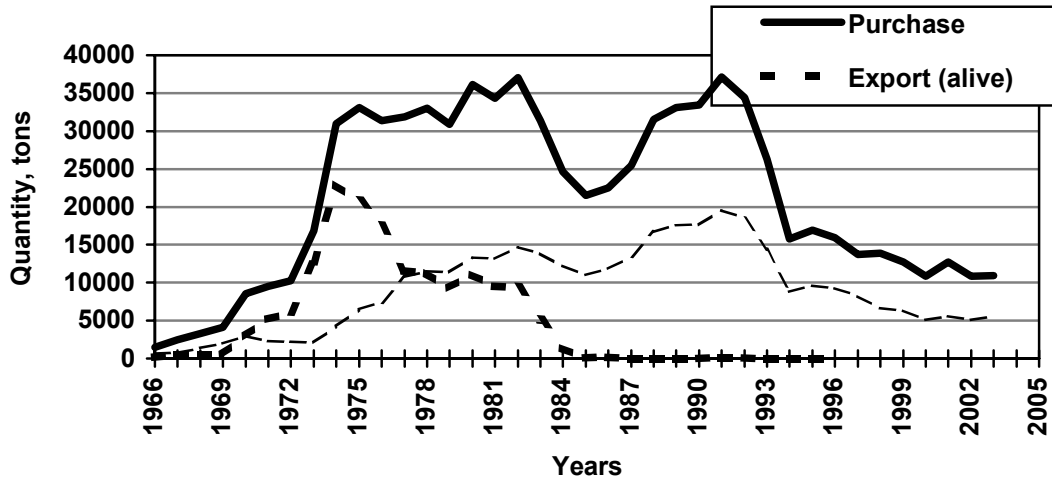
Data on the production, processing, export, consumption and other characteristics of rabbit breeding were obtained from the Rabbit Production Board, as published on the Hungarian Conferences on Rabbit Production (Proc. 1989-2004). These were, in some cases, also published on international conference or in journal (COLIN *et al.*, 1996; SZENDRŐ and BLEYER, 1999). Information on the education and research was also obtained from lectures at the Hungarian Conferences on Rabbit Production, though other publications, as well as personal information gathered from leading researchers at other institutes was used.

## RESULTS AND DISCUSSION

The first part of the material deals with the current state of the meat and angora rabbit production, while the second provides data and information on the education and research.

### Rabbit production

Rabbit breeding has old traditions in Hungary, though the organized form of purchase and export only began in the 1960's (Figure 1.). The first decade resulted a strong improvement. At this time rabbits were exported only alive, to Italy. In the 1970's, a hybrid, named „Fehér Gyöngy” („White Pearl”) was developed, based on New Zealand White and Californian breeds. At the same time the first rabbit slaughterhouses were built, as well as two farms of 10,000 does, each. However, more than 90% of all slaughter rabbits originated from small farms. At the time of the general political changes, at the early 90's, the production decreased, some slaughterhouses closed. The slaughterhouses of the Olivia Ltd (Lajosmizse) and the Bácska Inc. (Baja) are currently in a leading position, the role of the other two ones (Környe, Baj) is secondary. The Italian and Swiss owners of the above slaughterhouses built two rabbit farms, of 22,000 does, each. In the last 10-15 years strong structural changes took place in the rabbit segment. Beneath identical volume production small farms were closed, and the number of the larger farms, mainly of more thousand does increased. Nowadays, more than 75% of the slaughter rabbits is produced at large farms.



**Figure 1. The quantity of purchased and exported rabbit carcasses between 1969 and 2003.**

The size distribution of the 75 large and the 2776 small registered rabbit farms is shown in Table 1.

**Table 1. Size distribution of registered rabbit farms in 2003.**

Number of does per farm	Number of farms
20,000<	2
5-10,000	4
1-5,000	12
500-1,000	22
100-500	35
>100	2776

Altogether 2 pure breeds and more hybrids are distributed in Hungary. The proportion of those in the total breeding rabbit sale is shown in Table 2.

**Table 2. The proportion of the rabbit breeds and hybrids in the total breeding rabbit sale (in year 2003).**

Breeds and hybrids	Share, %
Pannon White	44
Hypus	23
Hycole	14
Debrecen White	9
Zika	3
Hyla	1

Besides some foreign companies (Meneghin, Clerini and Contro Fratelli) the Jäger company at Szászvár produces and sells cages in higher quantities. The most widely used cages are the flat-deck for breeding purposes and the two-level for the fattening. So-called alternative rearing (happy, ecological) is also used at some farms.

In the feeding pelleted feed is used generally. The most feed companies sell breeding and fattening feeds, though some special pellets are also available. The role of national producers, besides multinational producers is also important.

The most part of the slaughtered rabbits is exported to Italy, though, since 1994 the Swiss market is also important (Table 3). The third greatest partner is Germany, however, the export of smaller quantities into other foreign countries is also present. Some 97-98% of the slaughtered rabbits is exported, the national sale proportion is minimal, though local consumption at small farms is important. In the year 2003, 300 tons of rabbit meat was sold on the Hungarian market.

Within the exported quantity, the proportion of cut products is high, it reached 2% in 1985, 7% in 1990, 25% in 1995, 55% in 2000 and 39% in 2003.

**Table 3. Export of rabbit carcass to different countries (in %).**

Country	1990	1992	1994	1996	1998	2000	2002	2003
Italy	92.5	84.3	68.5	71.1	60.6	56.1	52.2	43.6
Switzerland	2.5	8.5	25.0	20.3	25.5	31.2	26.3	28.2
Germany	1.0	3.5	3.5	4.3	5.2	8.4	16.1	18.3
Belgium	3.0	-	-	3.8	4.3	1.3	3.4	4.6
France	0.5	2.0	2.0	0.3	0.5	0.8	1.0	4.7
The Netherlands	0.5	1.0	1.0	0.1	0.9	-	-	0.4
Russia	-	-	-	0.1	2.7	0.5	0.9	0.1
England	-	0.5	-	-	-	-	-	-
Spain	-	0.2	-	-	-	-	-	-
Ireland	-	-	-	-	0.3	-	-	-
Greece	-	-	-	-	-	1.7	-	-
Others	-	-	-	-	-	-	0.1	0.1

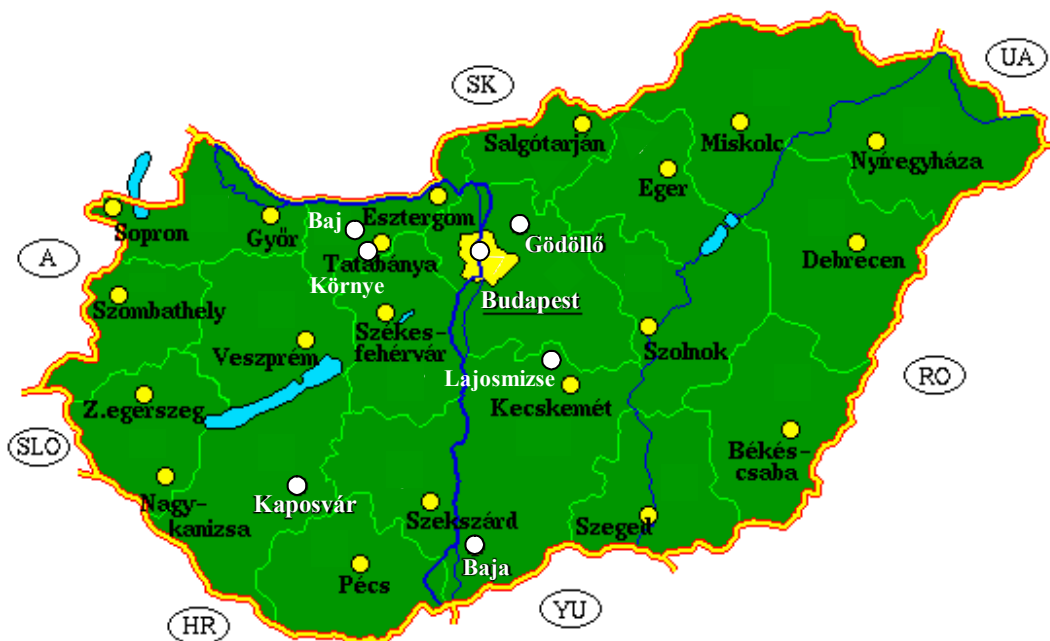
The angora rabbit breeding was highly important even before the 2<sup>nd</sup> world war, though it was nearly extincted at the end of the 1970's. Similar to some other European countries, in the early 1980's the production increased again; with a yearly export of 198 tons of angora wool a leading position within Europe was obtained. Due to the strong price drop, the production decreased strongly from the next year on; nowadays there are only a few angora rabbits in Hungary.

## Education and research

Rabbit breeding courses can be attended either together or not with fur animal breeding, as compulsory or facultative courses, at the agricultural faculties of universities and colleges.

The centre of Ph.D. training is the University of Kaposvár. In the past years 9 aspirants obtained Ph.D. degrees, currently 5 students are preparing their Ph.D. theses. At different faculties of the „Szent István” University, as well as at the „Eötvös University” some degrees were obtained in the field of rabbit science. Ph.D. students in this field are also active in the research group of the Agricultural Biotechnology Center.

The University of Kaposvár ([www.atk.u-kaposvar.hu](http://www.atk.u-kaposvar.hu)) is a centre of the research in the rabbit breeding, possessing an experimental rabbit farm of 500 does. The Pannon White breed is selected here. Most research results are obtained in the field of breeding, management, reproduction, meat production and quality, digestive physiology, ethology and animal welfare. The Institute of Diagnostic Imaging means a unique possibility (CT, MRI). Annually, the Conference on Hungarian Rabbit Production is held at Kaposvár (in 2004 for the 16<sup>th</sup> time).



Slaughterhouses are at Lajosmizse, Baja, Környe and Baj. Universities are at Budapest (Eötvös University and Faculty of Veterinary Science), Gödöllő („Szent István” University) and at Kaposvár (University of Kaposvár). Research institutes are at Gödöllő (Institute for Small Animal Research and Agricultural Biotechnology Center)

**Figure 2. Centres of education, research and slaughter houses in Hungary.**

Rabbit research started in 1903 in the predecessor institute now called Institute for Small Animal Research in Gödöllő ([www.katki.hu](http://www.katki.hu)) where the NZW and Californian breeds have been preserved since 1970's. The purpose of current researches in the field of genetics, reproduction, housing&management, nutrition and animal welfare&hygiene is to develop different production systems.

At the „Szent István” University, especially at its Faculties of Agricultural and Environmental Science ([www.szie.mkk.hu](http://www.szie.mkk.hu)) and Veterinary Science ([www.univet.hu](http://www.univet.hu)) at Gödöllő and Budapest, mainly feeding and physiological research work is being performed.

In the Agricultural Biotechnology Center (Gödöllő, [www.abc.hu](http://www.abc.hu)) the two main research lines are predominant: altering kappa-casein concentration in transgenic rabbits and producing pharmaceutical proteins in the milk of transgenic rabbits.

The Hungarian centre of rabbit ethological research is the research station of the Eötvös University ([www.elte.hu](http://www.elte.hu)) at Göd.

## CONCLUSION

Although Hungary, with an inhabitant number of 10 millions, is a little country, it plays an important role in the rabbit meat export and research. An aim, namely to reach the production volumes in 1982 and 1992 seems to be unreal, but the increasing number and size of the farms provides a new way for the improvement. All conditions (knowledge, breeds, cages, feed, etc.) to fulfil this are given. One of the most important aims is to increase the home rabbit consumption, namely to reach a 20% proportion within the produced amount.

The conditions for the education, especially the research activity, is appropriate. Research results are published at conferences and in scientific papers. We are active participants at world congresses: we prepared 5 papers in Dijon, 11 in Barcelona, 12 in Rome, 48 in Budapest, 19 in Corvallis, 30 in Toulouse and 28 in Valencia. A similarly active participation (about 25 papers) is planned for the congress at Mexico.

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