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Table 1 Statistical values of lipids and hormones in blood serum of pigs

Parameter	n	x	s	v	T
Total lipids [g/l]	26	3,03	0,55	18,16	-
	31	2,94	0,44	14,93	
Triglycerides [mmol/l]	26	1,05	0,20	18,60	+
	31	0,97	0,12	12,76	
Cholesterol [mmol/l]	26	2,73	0,40	14,64	-
	31	2,61	0,41	15,85	
Glucose [mmol/l]	26	4,36	0,35	7,96	-
	31	4,33	0,34	7,86	
Cortisol [ug.10 <sup>2</sup> /l ]	26	1,68	0,76	45,17	
	31	1,81	0,82	45,70	
Thyroxin [ug.10 <sup>2</sup> /l ]	26	1,14	0,63	55,77	
	31	1,29	0,11	8,86	

### **GEESE GENOFOND RESCUE IN SLOVAKIA**

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### **Summary**

After the only geese breeding pen in Slovakia had extinguished, problem with biological material for multiplication farms occurred. Agriculture enterprise Tešedíkovo had been requested to elaborate project of geese genofond rescue. First stage of this project was aimed to create conditions for stepping over multiplication to breeding farm status, as well as the new geese type creation based on Tešedíkovo geese genofond (Ivagees 003 mated inter se) and genofond from imported geese, eligible for large - scale conditions. Revitalization project starts in 1996, when geese selection based on health status, constitution and body conformation was realized within breeding pen. In 1997 were imported ganders of 2891 type from Czech republic, appointed to cross with Tešedíkovo geese with concern to increase growing and slaughtering characteristic of the progeny. Arisen crosses of F1 generation (2891 ganders x Tešedíkovo geese) and original Tešedíkovo goslings were both tested for fattening characteristic and results mutually compared. In 1998 were imported ganders of Babati type from Hungary to improve further growing and slaughtering quality of Tešedíkovo geese. In 1999 30 geese groups were composed (10 groups TxBa, 10 TčxTč, 10 TčxBa). In breeding pen individual control of reproductive parameters and its progeny were tested in growing tests. Obtained results were analyzed and evaluated. Based on these results heritability value of each parents combination within breeding pen were stated. In the year 2000 after fulfilling every criteria has been this farm acknowledged as on breeding. We suppose, that in 2004 cultivation of this commercial type will be brought to an end and admitted as an official geese type.

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**Keywords:** Geese, cultivating, reproductive, fattening and growing parameters

### **Introduction**

Goose, formerly wide - spread and popular sort of poultry, has lost its position during last years. Geese number declined rapidly and today presented 0,68 % of total poultry amount kept in Slovakia. Comparing with pre - war period, when 1 856 471 geese were kept in Slovakia, arounded 15 % of total population of poultry (Staško, 1976), is this state alarming.

After transition to large - scale production geese number declined. Goose, herbivorous and pasturing animal requiring water basins, has less effective utilisation of grain fodders and up to now is kept mainly by semi - intensive methods. Serious shortcoming comparing with other poultry species are also inferior reproductive parameters.

Despite of these facts, geese breeding and cultivation in 70's and 80's in Slovakia has attracted attention. Besides several specialised farms, also Station for geese breeding and cultivation in Hroboňovo (nowadays Dolný Štál) arisen.

Transformation process to the market - oriented economy had negative influence on geese breeding in Slovakia. Cultivating breeding farm in Dolný Štál has privatised and new management was unable to conserve previous breeding status as an cultivating breeding farm.

After years 1993 - 1995, after abolishment of cultivation farm in Dolný Štál, goslings in Slovakia were produced by agri - coop Tešedíkovo, which ask for a business plan.

Based on this fact, revitalisation programme of geese genofond saving was proposed. Aim of the first stage was to create condition for achieving level of cultivation farm, as well as to create geese type suitable for large - scale condition based on Tešedíkovo (Ivagees 003 inter se crossed, named as Tešedíkovo geese) and foreign geese genofond.

### **Material and methods**

Geese breeding revitalisation in Tešedíkovo begun in 1996. Geese flock presented in Tešedíkovo (originated from breeding farm Hroboňovo) was strictly selected based on health status, constitution, body conformation and body weight.

Geese were separated into breeding groups according to age and reproductive parameters were monitored.

In 1997 were imported ganders of the 2891 type from Czech republic with purpose to increase growing and fattening ability and body conformation improving. After its rigid selection (based on health status, copulation organs development, weight an whole body creation) were in 1998 introduced to breed, were breeding pen consisted from Tešedíkovo geese (T) and 2891 ganders been created. Its progeny (F1 cross - Tč) were tested in fattening test along with goslings of T geese up to 16 weeks of age. After fattening test ends, slaughtering analyse of selected average samples were executed. In 1998 the Babati (Ba) ganders from Hungary were imported and introduced to cultivation process in 1999 breeding season.

In this year 30 geese tribes were composed (10 tribes of following combinations: Tx Ba, TčxBa, TčxTč). Within tribes egg laying parameters, fecundity and hatchability were monitored. Growing test of goslings of breeding pen parents was executed (within 3 following sets up to 10 weeks of age), aimed at growing intensity and its weight. Goslings were tested in the same conditions. Following obtained results we were able to evaluate heredity abilities of parents from breeding pen. This method was held also in the year 2000. Naturally, during the years 1996 - 2000 also reproductive parameters of geese in breed by groups were evaluated as well. Following set method cultivation work will end in 2004, when after fulfil all criteria will be this commercial geese type acknowledged.

### **Results and discussion**

Level of reproductive parameters is crucial for geese breeding rentability. Its improving in geese keeping is complicated by lower heritability coefficient and frequently are in antagonistic relation.

On Tešedíkovo farm was egg production owing to selection increased as follows: in 1996 was 24,38 per goose, in 1997 within first two groups of 3 year geese - 31,67 and 36,74 per goose, 4 years goose - 49,46 and 43,12 eggs per goose, in 1998 and 1999 was similar as the year 1997.

Toth (1990) evaluated reproductive parameters of Hungarian and Landaus geese for last 20 years and has stated, that egg production increased for Hungarian geese up to 50 %, for Landaus geese to 10 %. Similar results gained also Shaleva et al. (1991) by analysing geese 8 years selected on high laying production. Regressed genetical profit yearly was 2,7 eggs.

Eggs fecundity belongs to characteristics influenced mainly by proper zooveterinary measurings in breeds.

On the Tešedíkovo farm egg fecundity faltered around 75 % in 1997, in 1998 declined and 1999 repeatedly increased up to 83,38 %.

It seems, that egg fecundity depends mostly on outer climatic factors, because is unsteady between years and decline is visible mainly in years with extreme temperature swings. For this conclusion testify also decline of ganders ejaculate production if daily temperature overstep 20 °C (Zeman et al., 1984).

Important reproductive parameter is also hatchability, also strongly influenced by technological level in breeds.

On the Tešedíkovo farm eggs hatchability in 1996 faltered around 67,14 %, in following years declined. Main problems on this farm are hatching eggs storing and obsolete hatching machines. Švec and Okař (1982) summarised causes of low

hatchability as follows: high or low temperature and humidity in eggs storing place, long-termed storing, wrong hatching technique, wrong nourishment, shaking during manipulation with eggs.

On the Tešedíkovo farm were weight differences between Tešedíkovo geese and Tč crosses up to 28 days of age significant in favour of Tešedíkovo geese, between 56 and 84 days of age significant in favour of Tč crosses. There were no significant differences between named typed in older age.

Kočí and Kočiová (1993) found out, that growing is determined firstly by its origin followed by nourishment factors.

Following slaughtering analyse of goslings we ascertained, that butcher yield of T geese was 72,23 %, T ganders 70,08 %, cross geese Tč 76,61 % and Tč ganders 75,35 %.

Hudský et al. (1974) has stated yield of Rhyne geese within span 69,5 - 70,4 %.

Dissected trunk weight in Tešedíkovo of T geese was 2460 g, Tč geese 2602 g, T ganders 2700 g and Tč ganders 2774 g. This corresponding with results Hudský et al. (1974), has stated, that dissected trunk weight of Rhyne geese was 2320 - 3017 g.

In the growing test we has tested crossbreeds of following combinations: TxBa, Tčx Tč, TčxBa. After analyse its growing intensity we found out, that the best results were reached from combinations: TxBa, TčxBa and TčxTč, resp.

Average daily increasing expresses for all period of growing test reached within males values from 68 to 72 g, females 61 - 64 g. Ács et al. (1995) has state, that genotype of geese had significant influence on body weight. This confirmed Puchajda et al. (1997), when compared gained results of Italian and Bilgoraj geese.

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## **THE INBREEDING ANALYSE IN BREEDING SERVICE USED BULLS OF SLOVAK SPOTTED BREED OF CATTLE IN SLOVAKIA**

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### **Summary**

In the set of 82 sires of Slovak spotted breed of cattle an their crosses devided into four groups according to genotype and fylogenetic relationship we analysed relationship of sires. The coefficient of relationship  $R_{xy}$  varied 0,00 - 0,20. In the whole set of sires there was only 2,44 % inbreeding sires with  $F_x = 3,13$  and 6,25. Dimension of values we found did not cause any negative impact comming out of inbreeding.

**Key words:** cattle, sire, genotype, coefficient of relationship and inbreeding.

### **Introduction**

The inbreeding in the breeding of farm animals in an important factor of successfullness of the breeding work. Its evaluation and control of the level is permanently necessary and actual from the point of view detailness discription and estimation of breeding value and followed acceteration of genetic progress.

The breeding structure of the bulls used in breeding service in Slovak Republic is varians and at once for present period is characteristics. The farmers chosen the breed and the sires according to the result of offspring test but mainly for breeding value in milk and meat perforence.

Working out the effektive breeding programmes with utilization of our and foreigner breeds with attention to inbreeding can safe systematic and dynamic changes in breeding structure of used sires. If there is sustainable great population of cattle there is not risk of nonplaned nondesirable inbreeding. The inbreeding can occure in the populations which are regarding as a gene reserve or in small populations. Mainly in the last years when A. I. is used plenary, the new biotechnical methods are used, by which the number of sires in breeding services are decreased but there is increasing of genetic gain on one side and at once it can cause increasing relationship and level of in breeding on the other side.

The aim of this article is to analyse the relationship and breeding stucture of sires used in breeding services in some regions of Slovakia.