

PRODUCTION OF BREEDING PIGS IN THE BASE OF DAM AND SIRE BREEDS IN THE SLOVAK REPUBLIC

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Summary

Transition to the system of comparative classification and evaluation of carcass pigs emphasize requirements for higher pig meatness. We have studied meat efficiency of both dam and sire populations of pigs bred in Slovak Republic on pigs numbered 1860 pigs altogether in 2000. The dam population on average daily increasing of weight had L - 817 g, BM - 793 g, BU - 786 g, in meat parts percentage LD - 53,42%, BU - 52,77%, BM - 52,74%. In sire population on average daily increasing of weight had DU - 900 g, SM - 805 g, YO - 798 g, PN - 750 g. In CMČ PN - 59.04 %, YO - 56.00 %, SM - 54,64%, DU - 52.32 %. The evaluation of the double - breed combinations in base sire population in the slaughtering parameters had SM x PN the area 57.92 cm², loin bacon 1.45 cm, meat of thigh 24.60 % and CMČ 57,92 %. The present results demonstrate that it is necessary to increase selection of starting breeds for meat content both in the dams and sires population.

Key words: pig breeding, testing of fattening capacity, testing of carcass value.

introduction

The breeding work has an important position at the qualitative production of pork meat. By breeding work we can positively influence quantity and quality of pork meat production.

The breeding and selection in the bred of pigs by its intention follow a systematic decreasing of production costs by improving of fattening and slaughtering parameters.

The control of the utility of pig in the Slovak Republic at present and in the future can we suggest as the most dynamic stage in history of the recording and evaluation of the breeding properties of pigs.

At present for basic parts of activities to acquire the utility properties are performed approx. in 16 % of sows from the total population of pigs in Slovakia.

1 Control of reproduction properties, 2. Field test, 3. Station test, 4. Central filing.

The analyses during the last four years noticed the relatively balanced level in the number of involved sows, in the year 2000 we recorded the increasing trend. Genetic evaluations of pigs by the BLUP method is under preparation already in final phase. The main information system is adjusted to the decentralized collection of data, which enables to use the database in different breeding systems and systems with various structures of database. The programs developed in the frame systems. Will be accessible to everybody via Internet. Slovakia developed a perfect system to acquire, to elaborate and to transmit data on the breed of individual animals, races and population in domestic environs and it is able to connect to Europe systems.

The basic role of tests of fattening and slaughtering value on SVJH (station for fattening and slaughtering value) is to exact estimate of breeding value of parents, tested by point of view of tendency of breeding and to find out variability in the creation of production of marks of single breeds. The directed selection can effectively influence development of specific mark, respectively to increase its variability, as it is published.

The phenotypical and genetical analysis of production parameters of the breeds of pigs in the breeding breeds of Czech Republic was performed by Dufek, Buchta, Ivánek (1987), Matoušek, Kernerová, Pražák (1999), Pour (1999).

In the Slovak Republic to this problems were devoted Flak, Hetényi, Bobček (1997), Biro (1999), Bobček, Řeháček (1999).

The analyse of fattening and slaughtering parameters of breeds and various combinations of crossbreeding in a condition of different countries were found out by a lot of authors Johansson (1982), Ellis and Smith (1979), Luce (1985), Čechová, Buchta, Pražák (1996), Bobček (1999) and others.

Materials and methods

For analysis of production parameters were valued breeds and combinations of crossbreeding, mainly contemporaly used in the Slovak Republic.

The results were processed from all test stations in the Slovak Republic in year 2000. In the methods we used a standards in a charg STN 46 6164 and 46 6450.

The variation and statistical analysis was processed on single parameters of fattening and slaughtering value - by average daily increase of weight from 30 to 100 kg, in a spending of feed mixtures and ME for 1 kilo increase of live weight, for area of MLT in a square centimeters, for a thickness of a loin bacon in centimeters, for percentage of meat parts and portion of meat from thigh.

The representation in 2000 of the single dam and sire breeds was: BU n = 1203, BM n = 280, LD n = 154, SM n = 80, YO n = 68, PN n = 16, DU n = 18 Total n = 1637 pcs.

The double - breed combinations was: BU x L 22, BM x L n = 21, BM x DU n = 17, and base sire breeds SM x PN n = 29, SM x YO n = 85, YO x PN n = 30, DU x YO n = 19, BU x LD n = 22, BM x DU n = 17. Total 223 pcs.

Total representations from all test stations n = 1860 pcs.

Results

The results are in the tables 1 and 2. The valuation of thoroughbred dam and sire breeds is in the table 1. At the valuation of dam breeds on average daily increasing of weight the best value had LD - 817 g, in spending feed of 2,83 kg of feed mixtures or ME for 1 kg increase of live weight 35,65 MJ. The reached the best level in the area of MLD 46,40 cm², at the lowest thickness of bacon 1.64 cm.

The breed LD had at the valuation of percentage of meat parts the highest portion in slaughtery 53.42 % and the biggest percentage of meat from thigh 21.75 %.

At the valuation of sire breeds very good results in the average daily increase of weight had the Duroc (DU) 903 g and Yorkshire (YO) 798 g, at the lowest spending of the feed mixtures DU - 2.71 kg, YO - 2.69 kg. In the slaughtering parameters the best results reached breeds: Pietrain (PN) MLD 54.0 cm², YO - 50.7 cm², lean bacon PN 1.33 cm, YO 1.50 cm in CMČ PN - 59.04 %, YO - 56.00 %.

The evaluation of the double breed combinations the best results reached the combinations in base dam population on average daily increasing of weight the best value had BMx DU 818 g, spending feed mixtures KZ/kg 2.61 kg and ME 32.56 MJ, lean bacon 1.75 cm, meat of thigh 21.58 % and CMČ 53.56 %.

In base sire population on average daily increasing of weight the best value had DUxYO 900g, spending feed mixtures KZ/kg had PN x YO 2.60 kg and ME 32.46 MJ.

In the slaughtering parameters had combination SM x PN the area of MLD 52.0 cm², lean bacon 1.45 cm, meat of thigh 24.60 % and CMČ 57.92 %.

At the comparison of meat efficiency with intention to foreign market, mainly western European countries, where realization is by the meat portions, we must make more intensively breeding work on increasing of portion of meat parts in a slaughtering body of pigs dam breeds and mainly sire breeds.

Table 1 An average values of fattening and slaughtering parameters by single dam and sire thoroughbred breeds in year 2000

BREED	Average increasing of weigh (g)	Spending feed		MLT (cm ²)	Loan bacon (cm)	Meat thigh (%)	CMČ (%)
		KZ/kg	ME/MJ				
Large White	786	2,88	36,22	45,2	1,83	21,36	52,77
White Meats	793	2,95	36,89	44,4	1,88	21,18	52,74
Landrace	817	2,83	35,65	46,4	1,64	21,75	53,42
Slovak Meats	805	2,82	35,45	47,8	1,71	22,51	54,64
Yorkshire	798	2,69	34,23	50,7	1,50	23,65	56,00
Pietrain	750	2,72	35,28	46,0	1,33	26,17	59,04
Duroc	903	2,71	34,84	43,5	1,78	21,07	52,32

Table 2 An average values of fattening and slaughtering parameters by single double - breed combinations in base dam and sire population in year 2000

BREED	Average increasing of weigh (g)	Spending feed		MLT (cm ²)	Loan bacon (cm)	Meat thigh (%)	CMČ (%)
		KZ/kg	ME/MJ				
BU x L	792	2,82	35,79	45,8	1,81	21,25	52,59
BM x L	761	2,83	35,32	44,5	1,73	21,46	53,55
BM x DU	818	2,61	32,56	45,0	1,75	21,58	53,56
SM x PN	736	2,80	35,02	52,0	1,45	24,60	57,92
SM x YO	844	2,74	34,96	48,0	1,65	22,75	54,63
YO x PN	797	2,85	36,15	51,8	1,41	24,13	56,85
DU x YO	900	2,60	32,46	47,5	1,86	21,73	53,72

Legend: BU - Large White, BU - White Meats, LD - Landrace Slovak, SM - Slovak Meats, YO - Yorkshire, PN - Pietrain, DU - Duroc, MLT - musculus longissimus thorasis, % CMČ - lean meat percentage

Reerences

- BOBČEK,B.: Analýza produkčných vlastností materských plemien ošípaných s ohľadom na možnosť speňažovania podľa podielu mäsa v jatočnom tele. Habilitačná práca, SPU Nitra, 1991, s.1-98.
- BOBČEK,B. - LOJDA,V.: Analýza produkčných vlastností otcovských syntetických línií ošípaných v SR. In: Zborník XVII. genetické dny, MZLU Brno, 1996, s.159-160.
- BOBČEK,B. - ŘEHÁČEK,P.: Analýza produkčných ukazovateľov materských a otcovských plemien ošípaných za roky 1991 - 1998 v SR. In: zborník z medzinárodnej konferencie „Ako smerovať chov ošípaných do 21. storočia“, SPU Nitra, 1999, s. 113-117.
- ČECHOVÁ,M. - BUCHTA,S. - PRAŽÁK,Č.: Šlechťení moderných masných typu prasat v ČR. In: zborník „Problémy a perspektívy rozvoja plemenárskej práce v chove ošípaných na Slovensku“, SPU Nitra, 1996, s.40-42.
- FLAK,P. - HETÉNYI,L. - BOBČEK,B.: Analýza rastu výkrmových a jatočných ukazovateľov bieleho ušľachtileho a bieleho mäsového plemena. In: Acta zootechnica č.53, SPU Nitra, 1997, s.39-45.
- MATOUŠEK,V. - KERNEROVÁ,N. - PRAŽÁK,Č.: Šlechtiteľské a chovatelske programy v chovu prasat v ČR. In: zborník „Problémy a pespektívy rozvoja plemenárskej práce v chove ošípaných v SR“, SPU Nitra, 1996, s.33-39.
- POLTÁRSKY,J.: Plemenárstvo v chove ošípaných. In: zborník „Manažment a marketing v chove ošípaných“, SPU Nitra, 1996, s.208-215.
- POUR,M.: Perspektívy chovu prasat v České republice na počítke třetího tisícletí. In: zborník „Ako smerovať chov ošípaných do 21. storočia“, SPU Nitra, 1999, s.64-68.

RELATIONSHIP BETWEEN CAUSES OF COWS' NEGATIVE SELECTION AND THEIR MILK PERFORMANCE AND EXTERIOR

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Summary

Milk performance, exterior valuation and causes of culling were observed in 188 cows of Bohemian Spotted Cattle and 345 Holstein cows bred in the same conditions in submountains region. The differences between exterior formation all cows in herd and cows eliminated from herd were certified. Bohemian Spotted Cattle cows' selection were lower (30.85%) than selection of Holstein cows (38.84%). The differences between exterior formation of cull cows and non cull dams were founded.

Key words: cattle; cows' exterior; culling

Introduction

The level stayability of cows and causes of their culling from herd is important for permanently tenable agriculture and its economics. SCHAEFFER and BURNSIDE (1974) consider as the most important factors, what influence stayability of cows, milk performance and valuation of type, respective of exterior of dams, too.

The data about lifelong production, milk yield, content of milk fat and proteins and 28 traits of body conformation in 34 322 dairy cows were analysed by KLASSEN, MONARD and JAIRATH (1992) in Canada. Majority of phenotype correlation between lifelong production with traits of exterior was from 0.15 to 0.20, except body capacity, back and legs, what were about 0.07. Genotype correlation were high between lifelong production and angularity ($r=0.44 - 0.55$) and milk character ($r=0.53 - 0.56$).

PUTZ (1995) determine by analysis of valuation of Spotted Cattle exterior in Bavaria, that animals with limbs defect, for example in position of legs, marked joints, defect of pastern and hoofs, have worse production and longevity.

The aim of observation were to found the differences of body conformation cows culling from causes a low production, mastitis, fertility defect, occurrence of difficult calving and the other zootechnician reasons, and non culling cows.

Material and methods

Milk performance, valuation of exterior and causes of culling of 188 Bohemian Spotted Cattle cows and 345 Holstein cows are observed in farm in submoutains region in 1999 – 2000 years. Both races were bred in the same technology (free housing), management and nutrition.