INFLUENCE OF THE TERMINAL SIRE POSITION ON THE ECONOMY OF FATTENING OF FINAL PIG CROSSBREEDS*

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Selection of suitable genotypes for commercial rearing is the principal starting point for the pig breeder and the pig producer. Population tests are used to verify the performance and suitability of various farm animal genotypes, including pigs. The objective of this work was the comparison of production yield capacity in selected genotypes by means of station tests carried out in the Pig Testing Station of Czech University of Life Sciences Prague. It included 4 combinations of crossbreeding by 72 among pigs in a balanced ratio of sex, where the breed LW_D x L was represented in the AB position, boars PN and hybrid boars H x PN, LW_S x PN and LW_S x D in the terminal sire position. The course of indicators characterizing production yield capacity was regularly monitored in all pigs fed ad libitum. Basic economic indicators of the test fattening were determined after their implementation. It was demonstrated that they reached an average daily gain of 890–943 g on identical feeds for 85–90 days in feed conversion of 2.48–2.68 or, more precisely, meat conversion 4.77–5.08 kg, and meatiness 54.5–55.8%. It was demonstrated a significant influence of genotype on conversion of feed, meat as well as lean meat share in the carcass. With regard to the achieved results obtained, it may be stated that under the present economic conditions of high input prices and low selling prices, and under the present yield capacity, commercial fattening is not profitable. Reproduction yield capacity, pork selling prices primarily contribute to this.

pig; crossing; genotype; performance; economy

INTRODUCTION

The unfavourable economics of pork production began both in our country and in the EU in 1980, when the crude oil crisis was reflected in the fact that diesel oil was longer a cheap and readily available fuel. As a consequence of looking for new sources, a phase of bio-fuels began – production of bio-diesel from soy beans and rapeseed, ethanol from grains which are still significantly expensive despite sophisticated technology of their production. This problem has become even more serious because of the continuously increasing demand for grain by China. Therefore, grain supplies are rapidly declining, and the continuing discrepancy between supply and demand significantly increase prices of this commodity intended both for human and farm animal nutrition. The prices of wheat and barley, which are the most important components of feed mixtures for pigs, increased by more than 30% per ton at the beginning of 2008 in comparison to 2007.

Although pig rearing underwent significant qualitative changes with regard to the introduction of new effective genotypes and increase in performance because of new feeding technologies and feeding strategies, it continues to be problematic from the breeders' points of view. This fact has an every more significant impact on Czech specialized large-scale pig fattening farms, which are mostly without any land, unable to produce their own grain and receive a subsidy per hectare. If we, moreover, take into account their present average reproduction and production yield capacity (22 weaned piglets /♀/ per litter and year, feed conversion in the process of fattening per 3 kg and meatiness of 56% at a slaughter weight of 110 kg), and the low selling price of slaughter pigs as a consequence of high pork supplies in the EU (1.3 millions of tons per 2008 year), the pig-fattening business is recently becoming unprofitable.

The selection of suitable genotypes for commercial rearing is the principal breeder's and pig producer's starting point (Close, 1994; Svoboda, 2001; Stupka, Šprysl, 2003). Population tests are used to verify performance and suitability of individual genotypes of farm animals, including pigs (Jakubec, 1990).

The major objective of these tests is to obtain as much information as possible on the tested populations, or more precisely, the sub-populations, of pigs (Smith, 1977; Moskal, 1984, 1986; Rao, McCracen, 1990, 1992). This especially concerns the selection of combinations of breed or lines to implement hybridization programmes, the major objective of which is intentional use of commercial cross-breeding methods, i.e., maximizing the heterosis (Linkov, 1969). This phenomenon represents the principal stimulus for slaughter-pig production farms for the introduction of such measures, the implementation of which will improve the entireindustry´s overall economy due to reduction of costs per unit of production (Šprysl et al., 1989).

Evaluation methods of hybridization effectiveness with regard to genotype, components of heterosis, including optimizing the hybridization systems from an economic point of view, were discussed in detail by Dick-

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e r s o n (1969), S e l l i e r (1976), M o s k a l (1976), J a k u b e c (1990).

In order to minimize the environmental impact, population tests should be carried out under precisely defined conditions, where the best station tests are found, and the results of which may subsequently be compared to those of a parallel field test (M c P h e e , 1981; C a m e r o n , 1991; R a o , M c C r a c k e n , 1990, 1992). These comparisons are very important to verify the effectiveness of breeding measures in the pig breeding process. Possible problems of the comparability of individual indicators are reduced by suitable biometric methods (J a k u b e c , 1990; S t e r n et al., 1990; B e r e s k i n et al., 1990; M c P h e e et al., 1991), which allow the expression of the effectiveness of combinations in terms of monetary units (P o d ě b r a d s k ý , 1980).

Š p r y s l , S t u p k a (1991, 2003) and Š p r y s l et al. (1998, 2000, 2005, 2006) studied the issues of selected genotype effectiveness on pig-fattening economy. At the same time the cited authors monitored the issues of fattening economy with a view to boar-lines (S t u p k a , Š p r y s l , 2003), sex (L e n i s , J o n g b l o e d , 1994; S t u p k a et al., 2004; Š p r y s l et al., 2004, 2006) and feeding technique (S t u p k a , Š p r y s l , 2003). The above-mentioned studies, which were organized according to the station conditions, demonstrated that selection of a hybrid combination, or more precisely a genotype, should be considered the most significant factor influencing the economy of fattening.

The objective of this work is the evaluation and economic assessment of the influence of the terminal sire genotype on the production yield capacity by means of station tests.

MATERIAL AND METHODS

Four hybrid pig genotypes were tested during one year in the 4 separated tests in the same test- station. Each of the genotype were tested once with emphasis of coincidence of feeding and microclimate factors like temperature, humidity and NH_3 were optimized by help of AGE ventilation and cooling system. The animal selection with respect to terminal position were taken in to account of boar line representations in the given crossbred combination.

Each group of genotype consisted of 72 animals in which the cross-bred LW_D x L (Large White dam x Landrace) was used in the dam position (A, B) and pure-bred boars of the PN breed (Pietrain) and hybrid boars H x PN (Hampshire x Pietrain), LW_S x PN (Large White sire x Pietrain) and LW_S x D (Large White sire x Duroc) were used in (C), the terminal sire position.

The test began with pigs of a balanced sex ratio at a starting weight of 25.0 ± 2 kg or more precisely at a weight of 60–80 days after birth. Nutrition of the monitored animals was performed according to nutrient needs (Š i m e č e k et al., 2000) ad libitum in three phases with a continuous transition (Table 1). Complete feed mixtures (CFM) used within the tests consisted of components – wheat, barley, extracted soybean meal (ESBM) and a feed additive (premix). Feed was provided ad libitum by means of Duräumat self-feeders and was mixed individually for each pen according to the particular scheme and nutrient content.

The animals were housed by twos (always of the same sex).

The pigs were fed in the dam farms with the usual CFM intended for pre-fattening pigs.

The selected fattening parameters and meatiness were monitored once a week in each animal. The following fattening characteristics were monitored:

- average body weight during the test (ABW – kg),
- average daily gain (ADG – g),
- daily feed consumption (DFI – consumption of CFM in kg per day),
- feed conversion (FCR – consumption of CFM in kg per 1 kg of body weight gain).

The following indicators characterizing the slaughter value were monitored:

- % of lean meat during growth (LM) ,
- meat conversion (MCR – CFM consumption in kg per 1 kg of lean meat gain).

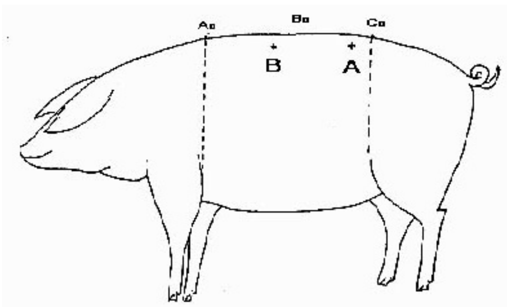
The course of lean meat formation was determined by sonography (ALOKA SSD 500) in pigs weighting 60 kg by regular measuring at seven-day intervals of the *m. longissimus lumborum and thoracis* (MLLT) and fat thickness including skin up to attainment of an average pig weight of 115 kg. The values were measured 7 cm paramedially from the spinal channel (in mm) in two scans (A, B).

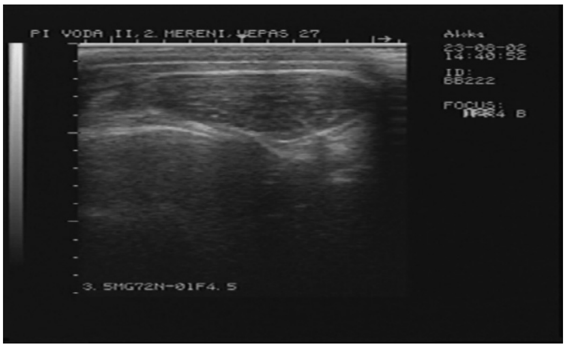
Table 1. Composition of the CFM feed with regard to the feeding period

Component (%)	Feeding period		
	< 35 kg	35–65 kg	> 65kg
Wheat	45.0	38.8	36.2
Barely	26.8	38.4	50.0
ESBM	25	20	11
Premix	3.2	2.8	2.8
Total	100	100	100

Table 2. CFM nutrient composition with regard to the feeding period

Nutriet content	Feeding period		
	< 35 kg	35–65 kg	> 65 kg
Protein (g/kg)	196.7	184	156.3
MEp (MJ/kg)	13.3	13.2	12.9
Fibre (g/kg)	39.8	38.8	40.8
LYZ (g/kg)	11.4	10.2	8.3
THRE (g/kg)	7.2	6.5	5.4
MET (g/kg)	3.2	2.9	2.4
Ca (g/kg)	7.2	6.8	6.1
P (g/kg)	5.5	5.4	4.6





The pigs were sold within the SEUROP system, while the equation for SONOMARK SM-100 was used for determination of meatiness (LMP):

LMP = 63.87 – 0.447 * fat 1 – 0.51 * fat 2 + 0.128 * * muscle 2

Where: fat 1 or 2 = thickness of fat scan A or B
muscle 2 = thickness of MLLT in the scan B

The basic characteristics of production features in the selected cross-breeding combinations were converted by linear regression into an uniform body weight of 105 kg for comparability. Other indicators evaluating the interaction of production features and production economy were left for monitoring for higher slaughter weights up to 115 kg. The dataset was analysed using ANOVA by the statistical program SAS 9.1.3 – GLM (SAS, 2001). The following linear regression model was used to estimate the effects of body weight:

$$Y_{ij} = \mu + CW_i + Gen_j + e_{ij}$$

Where: Y_{ij} – observed value of the carcass parameter as a dependent variable
μ – average value of dependent variable
CW_i – fixed effect of body weight
Gen_j – fixed effect of genotype
e_{ij} – residual effects (random error)

The economics were evaluated with regard to genotype by means of the profit function (P o d ě b r a d s k ý , 1980; Ž u p k a , 1992) in the form of

$$\text{profit}_{\text{total/item}} = \text{sales}_{\text{total/item}} - \text{costs}_{\text{total/items}}$$

$$\text{costs}_{\text{total/item}} = \text{costs}_{\text{per piglet}} + \text{costs}_{\text{for feed}} + \text{costs}_{\text{fixed}}$$

The fixed cost (FC) volume per kilogram of body weight was adopted from N o v á k et al. (2007), and with regard to the rate of turnover it amounts to CZK 7.11 for LW_S x PN, 7.54 for PN, 7.27 for H x PN and 7.54 for LW_S x D.

The purchase price of 1kg of pork body weight equaled CZK 54 per kg (i.e., a porker of 25 kg = CZK 1.35), 1 kg of feed at CZK 5.89, the average selling price per body weight at CZK 29.09, and the average reproduction performance of factory farms at a number of 20 reared piglets per sow per year, were then taken as the basis for the yield rate calculation.

The other following indicators were also monitored:

- FP – feed costs up to the attained body weight including price of piglet,
- TC – total costs (FC+FP),
- MP – market price at the selling price of CZK 29.09 per kg of body weight, including penalties (the percentage reduction of the price with regard to the standard ratio of lean meat to the carcass weight),
- P – profit, expressed in percentage as a ratio of total sales versus total costs.

RESULTS AND DISCUSSION

Analysis of fattening features with regard to genotype based upon actual values attained during the experiment is presented in the Table 3.

It is obvious from the table that the genotype with crossbred boars in the terminal position LW_s x PN reached the highest growth intensity (943 g/day) at significantly lower feed conversion of 2.48 kg as well as meat conversion of 4.68 kg. As concerns the other genotypes, it is obvious that they demonstrate different growth intensity at the same level of nutrition and environment, which is clear not only from the fattening indicators, including meat conversion, but also from the differences reached during the fattening period. This indicator then influences the amount of fixed costs per unit of production. These were determined as the difference between the overall costs and the feed costs per 100 feeding days in 2006 (N o v á k et al., 2007), which amounted to CZK 671, or more precisely, CZK 2450/year. In the presented daily gains of the individual combinations, the fixed costs per one kilogram of body weight of the genotypes H x PN, LW_s x PN, PN and LW_s x D are equal to CZK 7.27, 7.22, 7.54 and 7.55.

This table also presents the demonstrably highest conversion of lean meat in a three-breed combination using pure-bred boars of Pietrain breed (5.08 kg), while the remaining combination using synthetic boars LW_s x D and H x PN showed significantly lower lean meat conversion¸ in particular 4.94, or more precisely, 4.77 kg. This indicator, together with feed conversion, must be considered in the comparison of the individual genotypes as one of the most important economic indicators characterizing pig fattening.

The relationship between feed conversion in a particular genotype and the attained body weight is presented in Table 4.

If we evaluate the course of feed conversion in kg and CZK, it may be stated from the results of Table 4 and

Table 3. Overall selected indicators of fattening and slaughter value from 25 to 105 kg of body weight

Item	ADG	FCR	DFI	Fattening	Fattening difference	LM in 105 kg	MCR*
$(LW_D$ x L) x	(g)	(kg)	(kg)	(days)	(days)	(%)	(kg)
H x PN	924	2.68 ^{A}	2.4	86.6	1.8	55.8 ^{A}	4.77 $^{a B}$
LW_s x PN	943	2.48 ^{ABC}	2.4	84.8	0	55.7 ^{B}	4.68 ^{A}
PN	890	2.67 ^{B}	2.4	89.9	5.1	55.3 ^{a}	5.08 ^{AB}
LW_s x D	890	2.67 ^{C}	2.3	89.9	5.1	54.2 $^{AB a}$	4.94 ^{a}
F-value	1.4	6.26	1	1.09	not tested	9.24	6.49
P-value	0.2456	0.0005	0.3942	0.3539	not tested	< 0.0001	0.0004

*Calculation of meat conversion is based on the presumption that a porker contains 15 kg of lean meat
a – $P < 0.05$; A, B, C – $P < 0.01$

Table 4. Course of the relationship between feed conversion in kg and CZK and attained body weight after convertion to uniform body weight

ABW	FCR							
(kg)	CFM/kg of gain (kg)	CFM/kg of gain (CZK)	CFM/kg of gain (kg)	CFM/kg of gain (CZK)	CFM/kg of gain (kg)	CFM/kg of gain (CZK)	CFM/kg of gain (kg)	CFM/kg of gain (CZK)
	(H x PN) x $(LW_D$ x L)		$(LW_s$ x PN) x $(LW_D$ x L)		PN x $(LW_D$ x L)		$(LW_s$ x D) x $(LW_D$ x L)	
70	2.69	15.87	2.66	15.65	2.81	16.55	2.81	16.54
75	2.84	16.72	2.75	16.23	2.90	17.06	2.81	16.56
80	2.90	17.09	2.85	16.81	3.00	17.66	2.93	17.26
85	3.08	18.15	2.95	17.38	3.12	18.36	3.05	18.00
90	3.16	18.62	3.05	17.96	3.15	18.54	3.08	18.13
95	3.35	19.73	3.14	18.53	3.20	18.84	3.22	18.96
100	3.41	20.10	3.14	18.48	3.38	19.90	3.26	19.19
105	3.45	20.30	3.23	19.05	3.47	20.46	3.30	19.46
110	3.56	20.95	3.33	19.61	3.60	21.19	3.36	19.78
115	3.50	20.63	3.42	20.18	3.75	22.10	3.30	19.46

Fig. 1 that the monitored genotypes, with regard to increasing weight, demonstrate significant differences among each other. It was demonstrated that combination using synthetic boars LW_s x PN in the terminal position reached, from the point of view of overall growth, (up to 110 kg) the highest values. The terminal combination LW_s x D seems to be the second most suitable, as the course of feed conversion practically stagnates starting from an average value of 85 kg up to the final body weight of 110 kg. The three-breed combination PN x $(LW_D$ x L) seems to be the least suitable in this respect. It is obvious that after reaching a body weight of 100 kg, the animals' feed intake significantly increases per one kilogram of gain, which, financially expressed, at the end of the fattening experiment, amounts to CZK 22. Therefore, it is obvious that in the ad libitum technique of feeding, this combination

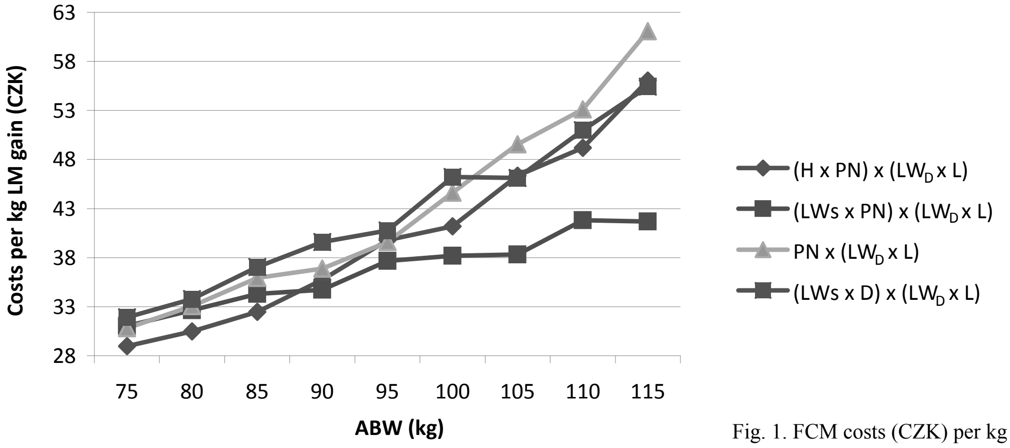


Fig. 1. FCM costs (CZK) per kg of LM gain in growing pigs

Table 5. Course of the relationship between lean meat conversion in kg and CZK and attained body weight after convertion to uniform body weight

ABW	LM	MCR		LM	MCR		LM	MCR		LM	MCR	
		CFM/kg meat	CFM/kg meat		CFM/kg meat	CFM/kg meat		CFM/kg meat	CFM/kg meat		CFM/kg meat	CFM/kg meat
(kg)	(%)	(kg)	(CZK)	(%)	(kg)	(CZK)	(%)	(kg)	(CZK)	(%)	(kg)	(CZK)
	(H x PN) x (LW_D x L)			(LW_s x PN) x (LW_D x L)			PN x (LW_D x L)			(LW_s x D) x (LW_D x L)		
70	57.7			58.3			58.4			57.9		
75	57.7	4.92	28.98	57.9	5.27	31.04	58.2	5.23	30.80	57.5	5.42	31.91
80	57.6	5.17	30.47	57.5	5.54	32.64	57.9	5.61	33.07	57.1	5.73	33.77
85	57.5	5.51	32.47	57.1	5.82	34.29	57.5	6.10	35.92	56.6	6.28	37.03
90	57.2	6.07	35.75	56.8	5.89	34.73	57.1	6.26	36.87	56.0	6.72	39.59
95	56.8	6.75	39.78	56.4	6.39	37.66	56.6	6.72	39.58	55.5	6.92	40.78
100	56.4	6.99	41.18	56.0	6.48	38.18	56.0	7.57	44.61	54.8	7.85	46.23
105	55.8	7.87	46.36	55.7	6.50	38.32	55.3	8.41	49.54	54.2	7.83	46.11
110	55.2	8.35	49.18	55.3	7.10	41.82	54.6	9.01	53.10	53.5	8.65	50.97
115	54.4	9.51	56.05	55.0	7.08	41.69	53.8	1.36	61.06	52.7	9.41	55.43

shows increased fat formation. The remaining genotypes with the terminal position H x PN fluctuate in their development between the genotypes discussed above.

Evaluation of lean meat conversion in relation to increasing body weight in the monitored genotypes, and therefore the cost of production of 1kg of meat, are documented in Table 5 and Fig. 1.

Based on the results presented in this table, we can conclude that in the verified genotypes, an identical tendency of economic suitability was demonstrated with regard to feed conversion and meat conversion. It is also obvious that meat conversion is significantly influenced by the selected cross-breeding combination, or, as the case may be, the terminal sire position used in the final pig hybrids. As in feed conversion, the pigs of genotype (LW_s x PN) x (LW_D x L) were evaluated the highest in this characteristic, as their feed consumption, or the cost per one kilogram of meat formation during growth and at the end of fattening showed the lowest values, in particular 7.08 kg, or more precisely, CZK 41.69. Compared to the worst three-breed combination, PN x (LW_D x L), 3.28 kg of CFM may be saved in feed costs at the end of fattening per 1 kg of meat gain by selection of more suitable genotypes, which represents a financial difference of CZK 19.37.

As regards the other genotypes, in the final fattening interval between 110 and 115 kg the monitored combinations achieved practically identical values.

Tables 6 and 7 present the determination of the fattening economy development with regard to individual weights concerning the genotype, expressed in costs and sales. The price of CZK 1,35 per 25 kg piglet is used in calculations for all combinations (1 kg of weight for CZK 54), and the selling price of CZK 29.09 per 1 kg of carcass. The progression of costs and sales is also corrected by the valid mask (ČSN 466160), penalizing carcasses having a lean meat ratio lower than 56 and a carcass weight range of 100–123 kg.

As is obvious from the above charts, losses cannot be prevented under the present input prices, selling prices and the achieved production yield capacity by selection of genotype.

This circumstance is more obvious from Fig. 2, showing the course of yield capacity (sales/costs) of the particular genotypes in relation to the genotype used and the body weight. It is obvious that performance is different for each genotype. It reaches values from 89% in a combination with PN breed in C-position up to 97% in a combination with LWs x PN boars at the end of fattening, when

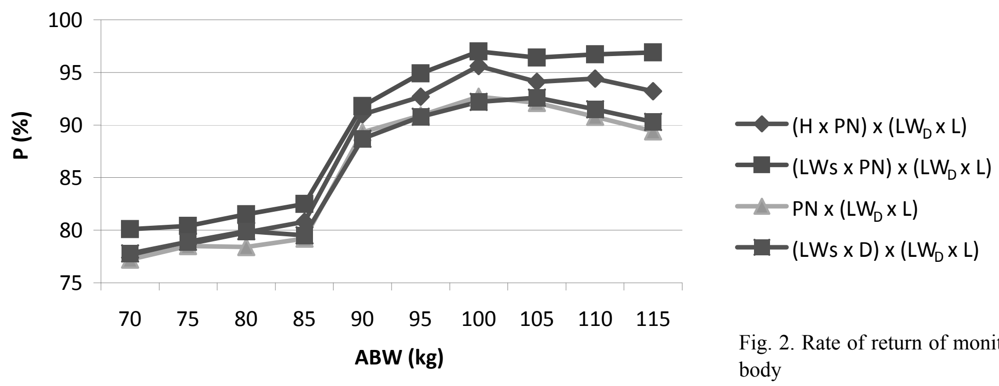


Fig. 2. Rate of return of monitored genotypes with regard to body

Table 6. Course of costs and sales with regard to attained body weight in (H x PN) x (LW_D x L) and (LW_s x PN) x (LW_D x L) genotype

ABW	(H x PN) x (LW_D x L)						(LW_s x PN) x (LW_D x L)					
	FP	FC	TC	LMP	MP	**P**	FP	FC	TC	LMP	MP	**P**
kg	CZK/head	CZK/head	CZK/head	%	kg	%	CZK/head	CZK/head	CZK/head	%	kg	%
30	1406	36	1442				1400	36	1436			
35	1465	73	1538				1453	71	1524			
40	1527	109	1636				1512	107	1619			
45	1592	145	1737				1574	142	1716			
50	1659	182	1841				1639	178	1817			
55	1730	218	1948				1706	213	1920			
60	1804	254	2058				1777	249	2026			
65	1883	291	2174				1851	285	2135			
70	1966	327	2293	57.7	1774	**77.4**	1927	320	2248	58.3	1800	**80.1**
75	2051	363	2415	57.7	1901	**78.7**	2010	356	2366	57.9	1901	**80.4**
80	2140	400	2539	57.6	2028	**79.8**	2095	391	2487	57.5	2028	**81.5**
85	2231	436	2667	57.5	2154	**80.8**	2184	427	2611	57.1	2154	**82.5**
90	2328	472	2800	57.2	2549	**91.0**	2275	462	2738	56.8	2512	**91.8**
95	2428	509	2937	56.8	2721	**92.7**	2369	498	2867	56.4	2721	**94.9**
100	2528	545	3073	56.4	2938	**95.6**	2467	534	3000	56.0	2909	**97.0**
105	2632	581	3213	55.8	3024	**94.1**	2567	569	3136	55.7	3024	**96.4**
110	2738	618	3355	55.2	3168	**94.4**	2670	605	3275	55.3	3168	**96.7**
115	2847	654	3501	54.4	3262	**93.2**	2776	640	3416	55.0	3312	**96.9**

Table 7. Course of costs and sales with regard to attained body weight in PN x (LW_D x L) and (LWs x D) x (LW_D x L) genotype

ABW	PN x (LW_D x L)						(LW_s x D) x (LW_D x L)					
	FP	FC	TC	LMP	MP	**P**	FP	FC	TC	LMP	MP	**P**
kg	CZK/head	CZK/head	CZK/head	%	kg	%	CZK/head	CZK/head	CZK/head	%	kg	%
30	1412	38	1450				1394	38	1432			
35	1474	75	1549				1444	75	1520			
40	1539	113	1652				1500	113	1613			
45	1606	151	1757				1562	151	1713			
50	1677	189	1866				1630	189	1819			
55	1751	226	1977				1701	226	1927			
60	1827	264	2091				1777	264	2041			
65	1907	302	2209				1857	302	2159			
70	1992	339	2332	58.4	1800	**77.2**	1942	340	2282	57.9	1774	**77.8**
75	2081	377	2458	58.2	1929	**78.5**	2031	377	2408	57.5	1901	**78.9**
80	2172	415	2587	57.9	2028	**78.4**	2122	415	2537	57.1	2028	**79.9**
85	2266	453	2719	57.5	2154	**79.2**	2216	453	2669	56.6	2123	**79.5**
90	2363	490	2854	57.1	2549	**89.3**	2313	490	2804	56.0	2487	**88.7**
95	2467	528	2995	56.6	2721	**90.9**	2411	528	2939	55.5	2668	**90.8**
100	2573	566	3138	56.0	2909	**92.7**	2511	566	3077	54.8	2836	**92.2**
105	2682	603	3285	55.3	3024	**92.1**	2614	604	3218	54.2	2978	**92.6**
110	2797	641	3438	54.6	3120	**90.8**	2717	641	3358	53.5	3072	**91.5**
115	2914	679	3593	53.8	3212	**89.4**	2820	679	3499	52.7	3161	**90.3**

the body weight is equal to 115 kg, which represents a difference of 8%. It is important that cross-breeding in the monitored combinations reaches a maximum from 100 kg body weight and higher. It decreases with further increasing weight, with the exception of the genotype using LWs x PN boars in the sire position. In this combination the yield capacity which may be used for pig fattening at higher slaughter weights practically does not change.

CONCLUSION

Based upon the station tests results of four sub-populations of hybrid pigs with various sires in the terminal position and with focus on the economics of their fattening, it may be stated that nowadays, due to high input prices and low selling prices the meat production, is unprofitable. In this respect the selected combinations showed, under the same feeding conditions for a fattening period between 85 and 90 days, an average daily gain of 890–943 g in feed conversion of 2.48–2.68 kg, meat conversion of 4.77–5.08 kg and meatiness of 54.2–55.8%.

Breeders and production farm management must therefore determine a suitable hybrid combination to achieve better results in pig fattening. This may be determined by station tests of hybrid pigs, which provide information concerning the course of parameters of the production yield capacity. It especially includes knowledge of the course and inflection point of conversion of feed and lean meat, which may be considered the most significant item of costs per unit of production. At the same time, a curve of the growth intensity of pigs, which influences the amount of fix costs, must be determined.

If we know these facts, pig selling prices in the slaughter houses may be optimized using minimum penalization for weight and meatiness, and then by determination of the optimum slaughter weight of pigs with regard to the payment mask.

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Vliv terminální otcovské pozice při tvorbě finálních hybridů prasat na ekonomiku výkrmu.

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Volba vhodného genotypu pro užitkové chovy je zásadním krokem chovatele a producenta prasat. K prověření výkonnosti a vhodnosti různých genotypů hospodářských zvířat, tedy i prasat, slouží testy populací.

Cílem práce bylo porovnání produkční užitkovosti vybraných genotypů hybridních prasat pomocí staničního testu uskutečněného v testační stanici prasat ČZU Praha. Jednalo se o čtyři kombinace křížení po 72 jedincích vyrovnaného poměru pohlaví, kde v AB pozici byla zastoupena plemena (ČBU x ČL) a v terminální otcovské pozici byli použiti kanci plemen PN, H x PN, BO x PN a BO x D. U všech prasat, krmených adlibitně, byl pravidelně sledován průběh ukazatelů charakterizujících produkční užitkovost. Po jejich realizaci byly stanoveny základní ekonomické ukazatele testačního výkrmu.

Prokázalo se, že při stejné žravosti za období 85–90 dní dosáhly sledované genotypy průměrného denního přírůstku 890–943 g při konverzi krmiva, resp. masa 2,48–2,68, resp. 4,77–5,08 kg a zmasilosti 54,2–55,8 %. Byl prokázán průkazný vliv genotypu na konverzi krmiva a masa a na zmasilost. S ohledem na dosažené výsledky lze konstatovat, že v současné době nelze z důvodu vysokých cen vstupů a nízké realizace při současné užitkovosti prasat rentabilně realizovat výkrm. Na výši rentability se prioritně podílí výše reprodukční užitkovosti, realizační cena prasat a cena obilovin.

prase; křížení; genotyp; užitkovost; ekonomika

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