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YOUNG BOARS TESTS AND SELECTION CRITERIA IN THE VIEW OF GROWTH, FEED UTILIZATION AND MEATINESS

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Summary

It is important to know the properties decisive for produce and for breeding effects in swines. The investigation have performed with the goal that created the proposes for young boars selection in the test on for possibility of growth, feed-utilizations and meat mass in the body which was measured with ultrasound apparatus. 58 young boars in the weight from 30-100 kg were single tested every 7 days on the property of growth, feed-utilizations, and their meatness and at the last control measurement (100 kg, respectively) with ultrasound apparatus SCANER 480 VET. We were investigated also, the relations among bodys mass utilizations of feed and the factors of meatness to the goal that established the criteries for the selection young boars . Average-old in the beginnings of test was 89 days, and was differention among young boars from 61-106 days, and body-mass 30.34 kg with the differention among boars from 26-36 kg and on the testing average oldies as 164.48 days among from 129-190 days, and the weight-body in the finish of test 100.38 kg among boars from 93-109 kg.

Key words: selection, growth, meatiness, ultrasound, correlation.

Introduction

Productivity of pigs in a herd can be increased only by using in breeding animals of above average breeding value. In assessing boars the most important is their breeding value and testing young boars for their own production (performance test).Performance test enables the selection of the best quality breeding boars and because of shorter generation interval faster genetic improvement of the her in the particular period. The most important production characteristics in the test are the daily gain, food utilization per day,

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food conversion, thickness of back fat and area of MLD. The paper indicates genetic potential and possibility of selesting young boars of the Swedish Landrace regarding essential production characteristics.

Material and Methods

The test included 58 young boars (SL) weighing about 30kg at the start of testing and about 100kg at the end. During the tests the boars were fed ad lib. on fodder mixtures with 17% of crude protein up to 60 kg of weight and with 15% of crude protein to 100kg of weight. The age at the start and and the end of testing, daily gain, food consuption per day, food conversion, and the length of trunk from atlas to the tail root were taken, while the thickness of the back fat and area of MLD were measured by means of the (ultrasound apparatus) SCANER 480 VET on position P2 (Molenaar, 1985; Zhang et al, 1993 a,b). The data were statistically analysed (Snedecor and Cochran, 1979).

Results and Discussion

The results of the production indicators of the tested young boars are given in Table 1, 2 and Graph 1.

Table 1. - PRODUCTION CHARACTERISTICS OF THE YOUNG BOARS OF THE SWEDISH LANDRACE IN PERFOMANCE TEST

Item	Xmin	Xmax	X	SD
Initial age(days)	61	106	89.034	8.5
Final age (day)	129	190	164.483	10.9
Initial body weight (kg)	26	36	30.336	2.5
Final body weight (kg)	93	109	100.381	3.7
Daily gain (g)			928	
Daily food consumption (kg)			2.274	
Food conversion (kg)			2.450	
Body length (cm)	110	130	119.569	3.8
Back fat thickness (cm)	0.49	178	1.05	0.3
Area MLD (cm^2)	30.04	48.15	38.33	4.3

The results obtained can be compared with some production results of other breeds raised in Croatia (Senčić et al., 1990) and with 2 selection lines (Molenaar, 1985):

Item	Average					
	LW	GL	BL	DL	Line 1	Line 2
Daily gain (g)	905	880	883	882	867	947
Daily food consumption (kg)	2.06	2.12	2.21	2.01	2.04	2.39
Food conversion (kg)	2.28	2.41	2.50	2.29	-	-
Back fat thickness (cm)	1.7	1.7	1.9	1.2	1.0	1.3
Area MLD (cm^2)	-	-	-	-	44.3	44.1

LW-Large White, GL-German Landrace,
BL-Belgian Landrace, DL-Danish Landrace

From the table it can be seen that boars SL gained daily slightly less than the best boars Line 2; they had the highest food conversion like boars BL, the thinnest back fat and smaller MLD area like boars Line 1.

On the basis of the indicators from Table 1 we were able to select the boars meeting the established criteria. The criteria for the selection were the arithmetic mean. As regards growth rate we have selected boars 164 days old or younger haevier than 100 kg in the end of the test period and those which had daily gain more than 0.982 kg. There were 10 boars (17.2%) which satisfied such criterion. In the other case we have selected boars with the body length of 120 cm or more, backfat thickness less than 1.05 cm and MLD area more than 38.3 cm^2. There were six boars of that kind or 10.3 percent.

Table 2 shows comparative production results for all the boars in the performance test as well as those selected according to the established criteria.

Table 2. - COMPARATIVE PRODUCTION RESULTS OF ALL THE BOARS AND THOSE SELECTED IN THE PERFORMANCE TEST

Item	All boards In test	Selected boars	Difference
Initial age (days)	164.83	153.5	-11.33
Final body weight (kg)	100.38	103.6	+3.219
Daily gain (kg)	0.928	1.026	+0.098
Daily food consuption (kg)	2.274	2.380	+0.106
Food conversion (kg)	2.450	2.350	-0.100
Body length (cm)	119.569	123.667	+4.098
Back fat thickness (cm)	1.05	0.78	-0.27
Area MLD (cm^2)	38.33	45.64	+7.31

Graph 1. - COMPARATIVE PRESENTATIONE OF AVERAGE BODY WEIGHTS (kg), FOOD COMSUMPTION (kg) AND FOOD CONVERSION (kg) IN WEEKLY CONTROLS

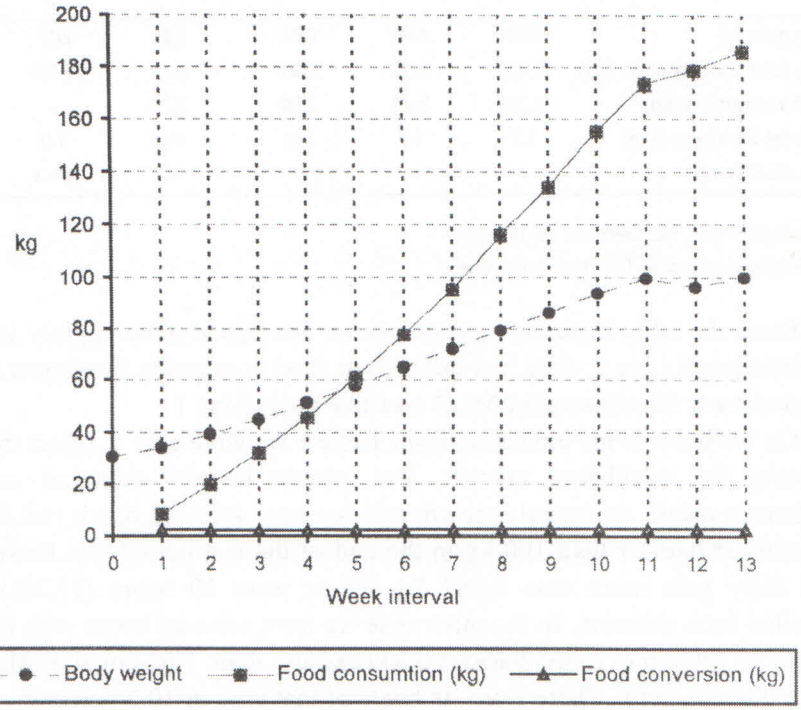

Table 3. - COMPARATIVE PRESENTATIONE OF AVERAGE BODY WEIGHTS (kg), FOOD COMSUMPTION (kg) AND FOOD CONVERSION (kg) IN WEEKLY CONTROLS

Week interval	N	Body weight	Food consumption (kg)	Food conversion (kg)
0	58	30.336		
1	58	34.078	8.612	2.369
2	58	39.178	19.810	2.244
3	58	44.828	32.000	2.168
4	58	51.209	45.672	2.165
5	58	57.843	60.757	2.291
6	58	64.707	77.248	2.431
7	58	71.819	95.345	2.594
8	58	79.076	116.038	2.755
9	56	85.961	134.188	2.766
10	55	93.698	155.205	2.702
11	37	99.511	173.466	2.688
12	4	96.250	178.750	2.829
13	2	100.000	186.000	2.657

Table 2 shows that by applying such methods of selection 1, with heritability (h^2) which is relatively high for these characteristics, improvement in selection is possible. It is interest to show the production results of the only boar satisfying the established criteria.They were the age at the start 61 days, and 138 days at the and of testing, the initial body mass 26.0 kg and final 107 kg, the daily food consumption 2.274 kg, the consuption of food per 1 kg of gain 2.146 kg, the body length 124 cm, the thickness of back fat 0.91 cm and the MLD area 39.45 cm^2.

Conclusion

The test on production characteristics of boars of the SL breed show a high genetic potential in growth apeed and meatiness. A significant variability of production characteristics indicates a possibility of further selection work and success.

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TESTIRANJE NERASTIĆA I KRITERIJ ZA NJIHOVO ODABIRANJE S OBZIROM NA RAST, ISKORIŠTAVANJE HRANE I MESNATOST

Sažetak

U istraživanjima je bilo 58 nerastića (SL) tjelesne mase na početku testa oko 30 kg a pri završetku testa oko 100 kg. Tijekom testa nerastovi su hranjeni ad libitum. Osim pokazatelja: dob na početku i završetku testa, tjelesne mase na početku i završetka testa, dnevnog prirasta, utroška hrane po danu, konverzije hrane, dužine trupa od atlasa do korjena repa izmjerena je

debljina leđne slanine I površina MLD pomoću ultrazvučnog aparata SCANER 480 VET na poziciji P2 (2). Podaci su statistički obrađeni i analizirani (4).

Na osnovi pokazatelja bili smo u mogućnosti da odaberemo nerastove koji su zadovoljili postavljene kriterije. Kriterij za odabiranje bila je aritmerička sredina za dob i tjelesnu masu na kraju testa te dnevni prirast kao pokazatelj brzine rasta, a dužina trupa, debljina leđne slanine i površina MLD za mesnatost.

S obzirom na osobine brzine rasta odabrali smo 10 nerastova ili 17.2%, a s obzirom na osobine mesnatosti 6 nerastova ili 10.3%.Proizvodni rezultati nerasta koji je jedini zadovoljio ovim postavljenim kriterijima su: dob na početku testa – 61 dan, na kraju testa – 138 dana, masa tijela na početku 26.0 kg a na kraju testa 107 kg, dnevno je priraštao 1.052 kg, dnevno je pojeo 2.274 kg hrane, utrošio 2.146 kg hrane za kg prirasta, dužina tijela mu je bila 124 cm, debljina leđne slanine 0.91 cm a površina MLD 39.45 cm^2.

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