CARCASS CHARACTERISTICS OF THE FIRST FARROWING GILTS IN RELATION TO SIZE OF WEANED LITTER*

CHARAKTERYSTYKA TUSZY LOSZEK PO ODCHOWANIU PIERWSZEGO MIOTU W POWIĄZANIU Z WIELKOŚCIĄ MIOTU

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ABSTRACT

The aim of the study was an evaluation of carcass slaughter value of first farrowing gilts depending on the number of weaned piglets.

The number of born and weaned piglets did not have a negative influence on gilt's slaughter value. Carcasses of first farrowing gilts characterised with a low fatness, large loin eye area and high lean content. Results of ham dissection of first farrowing gilts point high usefulness of this material to long maturing hams production in a view of the fact they have required weight, appropriate lean content and low fatness.

KEYWORDS: pigs, primiparous gilts, carcass value

STRESZCZENIE

Celem badań była ocena wartości rzeźnej loszek jednorazówek w zależności od liczby urodzonych i wykarmionych prosiąt. Wielkość miotu nie miała ujemnego wpływu na wartość rzeźną. Tusze loszek po odchowaniu pierwszego miotu charakteryzowały się odpowiednio niskim otłuszczeniem, dużym okiem polędwicy i wysoką mięsnością. Wyniki szczegółowej dysekcji szynki wskazują na dużą ich przydatność do produkcji szynek długodojrzewających ze względu na odpowiednie proporcje zawartości mięsa i niskiej zawartości tłuszczu.

SŁOWA KLUCZOWE: świnie, loszki jednorazówki, wartość rzeźna

STRESZCZENIE SZCZEGÓŁOWE

Celem badań była ocena wartości rzeźnej tuszy loszek jednorazówek w zależności od liczby odchowanych prosiąt. Badaniami objęto 70 loszek, które podzielono na 3 grupy A, B, C (n = 17; n = 42 i n = 11) w zależności od liczby prosiąt w miocie: do 8 prosiąt (A), 9-10 prosiąt (B) i powyżej 10 prosiąt (C). Masa ciała loszek jednorazówek przy uboju w poszczególnych grupach była zbliżona: w grupie A – 151.97 kg wobec 152.02 kg w grupie B i 156.73 kg w grupie C. Otłuszczenie tusz w grupie C było najmniejsze 21.8 mm, a w grupach A i B wynosiło 22.0 mm. Powierzchnia przekroju polędwicy zwiększała się dość proporcjonalnie i wynosiła od 52.83 cm^2 w grupie A do 57.11 cm^2 w grupie C, nie wykazano istotnych różnic. Mięsność tusz mierzona ULTRA-FOM 100 była zbliżona we wszystkich grupach (51.65% do 53.27%). Masa szyki w grupie A najlżejszych loszek wynosiła 13.13 kg, w grupie B – 13.05 kg i w grupie C – 13.34 kg. Surowiec pozyskiwany od loszek jednorazówek może być szczególnie przydatny do produkcji szynek trwałych peklowanych na sucho. Nie wykazano żadnych istotnych różnic w cechach tuszy między porównywanymi grupami loch w zależności od liczby odchowanych prosiąt.

INTRODUCTION

Production of raw material new assortment obtained from slaughtering the gilts after first farrowing needs an evaluation of variable factors which may affect the slaughter value. One of the elements which may have an impact on the carcass characteristic, its musculature and fatness may be the number of born and milked piglets. It is connected with an energy output on the milk production during lactation. In general, energy and nutrient components output needed to milk the piglets exceed the amount of components supplied from eaten feed so it leads to body weight loss during lactation. In some way, this phenomenon may be compared to the results of undernourishment and restricted feeding in the first phase of compensatory growth. According to Therkildsen et al. [12] the restricted feeding increased meat proportion. Therefore, the increased lean content and lowered fat content in carcass of the first farrowing gilts may be expected.

The aim of the study was an evaluation of carcass slaughter value of first farrowing gilts depending on the number of weaned piglets.

MATERIAL AND METHODS

The study was carried out on 70 crossbred gilts F_1 (Polish Landrace x Polish Large White) – so called first farrowing gilts.

After pregnancy, farrowing, piglets weaning (21 days of lactation) and dry period (14 days) gilts were slaughtered. First farrowing gilts were divided into 3 groups in accordance to different number of piglets in the litter: till 8 piglets (A; n=17), 9-10 piglets (B; n=42) and more than 10 piglets (C; n=11).

Carcass lean content evaluation was made with an ULTRA-FOM 100 after slaughtering. To evaluate the carcass musculature and fatness, a carcass cutting was made in accordance to the rules applied in meat industry [10]. The backfat thickness, loin eye area and ham dissection were done.

Obtained results were statistically analysed [11]. The significant differences between the compared gilts groups A, B, C were verified by the Duncan test.

RESULTS AND DISCUSSION

Carcass tissue composition is changing with the age of animals [2]. In pigs, daily protein deposition starts decreasing after achieving particular age and fat tissue deposition starts dominating. It is a typical phenomenon in pigs fattened to achieve high body weight at slaughter [1, 7] This phenomenon does not appear so strongly in first farrowing gilts because the energy and nutrient components output after piglets delivering are so high that lead to body weight loss, especially fat [3, 5, 6, 9]. Therefore, musculature of gilt carcasses after piglets weaning, despite the fact they are older than standard fatteners, should be high and fatness low. It is confirmed by the carcass characteristic data in Table 1.

Body weight at slaughter amounted: 151.97 kg in A group, 152.02 kg in B group and 156.73 kg in C group. Hot carcass weight was comparable developed (120.01 kg versus 118.67 kg and 123.42 kg).

Average backfat thickness in group C was 21.8 cm, in groups A and B 22.0 cm. Loin eye area was from 52.83 cm^2 in

Table 1. Results of carcass characterictics of primiparous gilts
Tabela 1. Charakterystyka tuszy loszek jednorazówek

Ttait	Litter size		
	up to 8 piglets **Group A**	9-10 Group B	above 10 piglets Group C
Number, n	17	42	11
Body weight before slaughter, kg	151.97 ± 17.94	152.02 ± 15.90	156.73 ± 13.13
Hot carcass weight, kg	120.01 ± 15.37	118.67 ± 15.90	123.42 ± 10.83
Average backfat thickness from 5 measurements, cm	22.0 ± 0.65	22.0 ± 0.56	21.8 ± 0.59
Loin eye area, cm^2	52.83 ± 7.58	53.85 ± 7.85	57.11 ± 9.15
Carcass lean content, %	52.31 ± 6.79	51.65 ± 5.42	53.27 ± 6.16
Weight ham, kg	13.13 ± 1.80	13.05 ± 1.43	13.34 ± 1.22
- meat, kg	8.82 ± 0.99	8.84 ± 1.06	9.28 ± 0.93
%	67.41 ± 3.18	67.79 ± 3.73	69.70 ± 5.32
- skin, kg	0.64 ± 0.12	0.63 ± 0.09	0.66 ± 0.12
%	4.89 ± 0.49	4.84 ± 0.76	4.94 ± 0.65
- fat external, kg	2.22 ± 0.67	2.15 ± 0.63	1.97 ± 0.89
%	16.59 ± 3.70	16.33 ± 4.12	14.56 ± 5.60
- fat intermuscular, kg	0.48 ± 0.13	0.47 ± 0.14	0.43 ± 0.09
%	3.62 ± 0.74	3.62 ± 0.92	3.20 ± 0.67
- bone, kg	0.98 ± 0.16	0.96 ± 0.12	1.01 ± 0.09
%	7.49 ± 0.87	7.41 ± 1.24	7.60 ± 0.98

group A to 57.11 cm^2 in group C, still the differences between groups were not statistically significant. Carcass lean content analysed with ULTRA-FOM 100 was similar in every tested group and appropriately high (from 51.65% to 53.27%).

Gilt's ham weight in all groups was almost identical. Ham weight in group A was 13.13 kg, in group B 13.05 kg and in group 13.34 kg. According to the international leaders in production of dry cured hams opinions [8], minimal ham weight can not be lower than 9.5 kg. As Kapelańska et al. [4] conclude the raw material obtained from gilts slaughtered after first farrowing may be specially useful in production of long maturing hams.

Ham tissue composition, weight of particular components and their percentage proportions are given in Table 1. The less fatty and most meaty hams were from the heaviest sows group and delivering numerous litters, however, the differences were statistically not significant. Presented results characterising the slaughter value of gilts after weaning the first litter did not reveal any statistically important differences in relation to varied number of born and weaned piglets in litter. These observations are in line with data of study conducted by Kapelanski et al. [5] on relations between lactational body weight loss, litter size and carcass value in primiparous sows. They found that sows body weight loss during lactation period was not proportional to suckling piglet number and lactation loss of body weight per piglet was from 0.60 to 1.25 and 2.14 kg in particular sows group, so they concluded that the contribution of body weight tissue metabolism to milk production differed the lactation of sows.

Summing up, the number of born and weaned piglets did not have a negative influence on gilt's slaughter value. Carcasses of first farrowing gilts characterised with a low fatness, large loin eye area and high lean content. oreover, results of ham dissection of first farrowing gilts point high usefulness of this material to long maturing hams production in a view of the fact they have required weight, appropriate lean content and low fatness.

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