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Biometric Characteristics of the Wild Boar (*Sus scrofa* L.) from North-Eastern Poland

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Good indicators of individual quality of animals are body weight and measurements. They provide information on the growth and development of wild boars, as well as on the quality of the habitat. In order to determine the growth and differences between males and females, 167 carcasses of wild boars of both sexes and at a different age, harvested in north-eastern Poland, were measured. It was found that the average carcass weight was: piglets – 21.23 kg, one-year-old boars – 35.05 kg, older boars – 68.84 kg. Statistical differences were found between some traits of males and females. In the group of young boars the carcasses of males were by ca. 4 kg heavier and by ca. 4.5 cm longer than those of females. In the group of one-year-old boars the carcasses of males were by over 4 kg heavier and by ca. 3 cm longer. There was a significant correlation between carcass weight and measurements in wild boars from particular age groups. The coefficients of correlation between carcass weight, trunk length, height at withers and height at sacrum varied from $r=0.88$ to $r=0.93$.

Keywords: wild boar, *Sus scrofa*, carcass weight, carcass measurements

Introduction

The wild boar belongs to the family *Suidae*, suborder *Artiodactyla*. The subspecies status of the wild boar inhabiting Poland requires further investigations, especially that the ranges of the extent of many forms described on the basis of differences in body weight and coloring have not been determined yet. The general map of wild boar subspecies distribution in Europe shows that two subspecies can be found in Poland: *Sus scrofa scrofa* L. – the Central European wild boar, in lowlands and *Sus scrofa attila* Thomas – the Romanian (Carpathian-Balkan) wild boar, in the south (Haber 1969). According to Fruziński (1993), also *Sus scrofa falz-feini* Matche has its habitats in north-eastern Poland. This is the so called Polish wild boar, i.e. an ecological form of the Central European wild boar. The nominative species *S. s. scrofa* L., native to Germany, is characterized by a smaller size and can be met in western and Central Europe (Pucek 1984).

Wild boars can easily adapt to changing environmental conditions, but they prefer forest complexes with marshlands. In many regions wild boars use also fields under cultivation as their feeding ground. The diverse

living environment of wild boars affects their behavior and development. Good indicators of their individual quality are biometric measurements. They provide information on the growth and development of wild boars, as well as on the quality of the environment and feeding ground.

The aim of the present studies was to determine the biometric indicators of growth and differences between males and females in three age groups of wild boars harvested in north-eastern Poland.

Material and methods

The study was conducted in the Forest Division Miłomłyn, located in north-eastern Poland, western part of the Warmia and Mazury Province, included in the Breeding Region "Łasy Taborskie", near the city of Olsztyn (20°30'E; 53°47'N) (Fig. 1). According to Kondracki (2001), the investigation area belongs to Central Europe, Province of the Central European Lowland, Subprovince of the Southern Baltic Lake District, Macroregion of the East Pomeranian Lake District, Mesoregion of the Ilawa Lake District. The Forest Division



Figure 1. Location of the investigation data

Miłomłyn covers an area of 19 173.72 ha; forests occupy 93.1% of this area.

Table 1 presents the types of forest habitats in the Forest Division Miłomłyn, including the hunting grounds where wild boar shooting was carried out. Table 2 shows the percentages of particular forest types in the Forest Division Miłomłyn.

Table 1. Types of forest habitats (%) in the Forest Division Miłomłyn

| Type of habitat | Percentage | Type of habitat | Percentage |
|--------------------------------|------------|---------------------|------------|
| fresh coniferous forest | 10,2 | mixed fresh forest | 28,1 |
| humid coniferous forest | 0,4 | mixed humid forest | 1,4 |
| marshy coniferous forest | 0,2 | mixed marshy forest | 0,5 |
| mixed fresh coniferous forest | 35,0 | fresh forest | 17,2 |
| mixed humid coniferous forest | 1,4 | humid forest | 0,6 |
| mixed marshy coniferous forest | 1,1 | wet leafy forest | 2,7 |
| | | wet ash forest | 1,2 |

Table 2. Tree species structure (%) in the Forest Division Miłomłyn

| Dominant species | Percentage | Dominant species | Percentage |
|---|------------|-------------------------------------|------------|
| Scotch pine (<i>Pinus silvestris</i>) | 72,4 | Hornbeam (<i>Carpinus sp.</i>) | 0,2 |
| Larch (<i>Larix sp.</i>) | 0,9 | Birch (<i>Betula sp.</i>) | 5,3 |
| Norway spruce (<i>Picea abies</i>) | 1,4 | Alder (<i>Alnus sp.</i>) | 4,5 |
| European beech (<i>Fagus sylvatica</i>) | 10,8 | Aspen (<i>Populus tremula</i>) | 0,1 |
| Oak (<i>Quercus sp.</i>) | 3,7 | Linden (<i>Tilia sp.</i>) | 0,3 |
| European ash (<i>Fraxinus excelsior</i>) | 0,3 | Poplar (<i>Populus sp.</i>) | 0,1 |

The study was conducted during two hunting seasons: 1998/1999 and 1999/2000. The experimental material were 167 carcasses of wild boars shot in the course of planned shooting. The animals were eviscerated and their carcasses (with skin) were delivered to the cold storage plant. Their sex: male (n=79), female (n=88) and age were determined there. Age was determined on the basis of the level of development and dentition. The boars were divided into three age groups: group 1 – piglets (n=44), group 2 – one-year-old boars (n=89), group 3 – older boars (n=34).

After evisceration the carcasses were weighed and their measurements were taken with a measure tape and measuring staff:

- carcass length – from the edge of the upper lip, along the central part of the head and backbone to the tail setting (base),
- height at withers – from the highest point of the withers to the central point of the forefoot and to the tip of the outer hoof (the forefeet were perpendicular to the carcass),
- height at sacrum – from the highest point of the hind part of the backbone, along the hind leg to the tip of the hoof,
- chest girth – behind the withers and shoulders,
- chest width – along the tangent behind the shoulders,
- forechest depth – from the withers to the lower edge of the brisket just behind the elbows,
- head length – from the end of the snout tip to the nape crest (occipital crest),
- head circumference – behind the ears, perpendicular to the lower edge of the mandible.

Two of the above measurements were used for calculating the longitudinal conformation index (I) of wild boars, according to the formula (Drozd 1996):

$$I = (\text{carcass length} / \text{chest girth}) \times 100$$

The numerical data were analyzed statistically to determine:

- statistical characteristics of the traits analyzed (\bar{x} , s),
- significance of differences between the mean values of the traits examined in particular age and sex groups (tests F and D),
- coefficients of simple correlation between traits in particular age groups.

Results

Periodical changes in carcass weight

Figure 2 presents the curves of growth in the average carcass weight, observed in young and one-year-old boars in successive months of the shooting season. The carcass weight of piglets was increasing

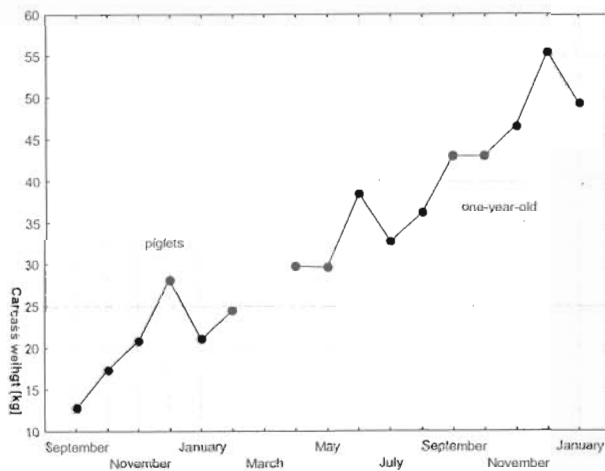


Figure 2. Carcass weight of young boars in particular months

systematically from September to December. The highest growth dynamics was noted in November and December. The young boars shot at that time were characterized by body weight of 28 kg. Its decrease to 24 kg was observed in February. A dynamic increase in the carcass weight of piglets results from their development and access to food resources in autumn, both in forest complexes and fields. A relatively high weight increase (on average up to 30 kg) was noted from February to April. In successive months the carcass weights of one-year-old boars was gradually growing, to exceed 55 kg in December. In January it decreased by ca. 10%, in comparison with the previous month.

Carcass weight and measurements

The average carcass weight was: piglets – 21.23 kg, one-year-old boars – 35.05 kg, older boars – 68.84 kg. The differences were statistically highly significant (Table 3).

An increase in carcass weight resulted in the changes of their measurements (Table 3). A considerable increase in carcass length was noted. The average carcass length in particular age groups was the following: piglets - 96.91 cm, one-year-old boars – 115.66 cm, older boars – 140.44 cm. Their height at withers was also increasing with age, from ca. 59 cm in young boars, 70 cm in one-year-old ones, to over 84 cm in older boars. The average height at sacrum in the youngest boars was ca. 61 cm, in older ones - 72 cm and in the oldest - ca. 84 cm. The differences between the mean values of the traits examined in three age groups were confirmed statistically.

An analysis of carcass proportions on the basis of the longitudinal conformation index (Table 4) shows that young and one-year-old boars are characterized by a considerable increase in trunk length in relation

Table 3. Biometric characteristics of wild boars from different age groups

| specification | statistics | piglets | one-year-old boars | older boars |
|------------------------------|------------|--------------------|---------------------|---------------------|
| Carcass weight [kg] | x | 21.23 ^A | 35.05 ^B | 68.84 ^C |
| | s | 6.11 | 9.70 | 14.39 |
| Carcass length [cm] | x | 96.91 ^A | 115.66 ^B | 140.44 ^C |
| | s | 10.27 | 8.84 | 7.42 |
| Height: [cm] - at withers | x | 59.14 ^A | 69.84 ^B | 84.31 ^C |
| | s | 6.91 | 5.39 | 5.92 |
| - at sacrum | x | 61.22 ^A | 71.59 ^B | 83.98 ^C |
| | s | 6.74 | 5.04 | 4.59 |
| Chest girth [cm] | x | 75.09 ^A | 87.40 ^B | 111.24 ^C |
| | s | 8.41 | 9.29 | 8.55 |
| Forechest depth [cm] | x | 25.81 ^A | 30.53 ^B | 41.18 ^C |
| | s | 3.33 | 3.23 | 11.01 |
| Chest width [cm] | x | 19.25 ^A | 22.88 ^B | 29.78 ^C |
| | s | 2.32 | 3.02 | 3.24 |
| Head length [cm] | x | 28.89 ^A | 34.51 ^B | 42.50 ^C |
| | s | 3.80 | 2.85 | 3.13 |
| Head circumference [cm] | x | 49.52 ^A | 54.43 ^B | 68.67 ^C |
| | s | 6.02 | 5.96 | 4.93 |

A, B, C - $P < 0.01$

Table 4. Value of the longitudinal conformation index

| specification | Index value |
|--------------------|-------------|
| young boars | 129.05 |
| one-year-old boars | 132.33 |
| older boars | 126.24 |

to chest girth, whereas older boars – by better developed chests in relation to carcass length.

Carcass weight and measurements in males and females

The differences in carcass weight and measurements between males and females were also analyzed in the studies (Table 5). The carcasses of male piglets were by ca. 5 kg heavier than these of female – this difference was statistically significant. A similar, but not confirmed statistical difference in carcass weight was observed between one-year old male and female wild boars (Table 5).

An analysis of carcass measurements in males and females shows that the carcasses of piglets male were by 4.5 cm longer than those of females. Carcass length in one-year-old male boars was 117 cm. The carcasses of females were by 2 cm shorter. The carcasses of old-

Table 5. Characteristics of males and females from different age groups

| specification | statistics | piglets | | one-year-old boars | | older boars | |
|-----------------------------|------------|--------------------|---------|--------------------|---------|--------------------|---------|
| | | males | females | males | females | males | females |
| Carcass weight [kg] | x | 23,52 ^a | 18,73 | 37,26 | 33,24 | 67,91 | 69,67 |
| | S | 5,29 | 6,06 | 9,98 | 9,18 | 15,48 | 13,74 |
| | Min. | 14,00 | 11,00 | 22,00 | 20,00 | 53,00 | 51,00 |
| | Max. | 31,00 | 29,00 | 59,00 | 57,00 | 102,00 | 96,00 |
| Carcass length [cm] | x | 99,10 | 94,50 | 116,97 | 114,58 | 139,59 | 141,20 |
| | S | 8,04 | 11,99 | 9,24 | 8,44 | 8,95 | 5,91 |
| | Min. | 85,30 | 79,00 | 101,50 | 100,00 | 125,00 | 132,30 |
| | Max. | 112,00 | 126,00 | 134,50 | 131,50 | 155,00 | 151,00 |
| Height [cm] - at withers | x | 61,26 ^a | 56,82 | 71,44 ^a | 68,53 | 86,08 | 82,79 |
| | S | 4,37 | 8,42 | 5,25 | 5,20 | 7,65 | 3,59 |
| | Min. | 51,00 | 43,00 | 62,00 | 60,00 | 77,00 | 76,00 |
| | Max. | 69,00 | 72,00 | 82,60 | 81,00 | 101,00 | 88,00 |
| - at sacrum | x | 63,22 ^a | 59,02 | 73,08 ^a | 70,38 | 84,93 | 83,13 |
| | S | 4,25 | 8,26 | 4,68 | 5,05 | 5,89 | 2,93 |
| | Min. | 63,50 | 45,00 | 63,50 | 62,00 | 77,00 | 77,00 |
| | Max. | 71,00 | 74,00 | 83,00 | 82,00 | 97,00 | 87,00 |
| Chest girth [cm] | x | 77,41 | 72,55 | 89,83 ^a | 85,42 | 113,19 | 109,50 |
| | S | 5,64 | 10,21 | 8,92 | 9,19 | 10,21 | 6,58 |
| | Min. | 63,60 | 56,00 | 73,00 | 74,00 | 102,00 | 101,00 |
| | Max. | 86,00 | 90,00 | 114,50 | 113,00 | 133,00 | 123,00 |
| Forechest depth [cm] | x | 26,84 ^a | 24,68 | 31,39 ^a | 29,82 | 42,12 | 40,39 |
| | S | 2,41 | 3,85 | 2,90 | 3,33 | 16,15 | 3,26 |
| | Min. | 22,40 | 18,00 | 25,00 | 25,00 | 34,00 | 35,00 |
| | Max. | 31,50 | 33,00 | 37,20 | 38,10 | 101,00 | 46,00 |
| Chest width [cm] | x | 19,73 | 18,73 | 23,43 | 22,44 | 31,18 ^a | 28,53 |
| | S | 1,80 | 2,73 | 3,04 | 2,96 | 3,97 | 1,74 |
| | Min. | 16,00 | 22,00 | 17,80 | 18,00 | 27,00 | 25,90 |
| | Max. | 24,00 | 24,00 | 30,30 | 30,60 | 38,50 | 33,00 |
| Head length [cm] | x | 29,00 | 28,77 | 34,86 | 34,21 | 42,70 | 42,32 |
| | S | 2,91 | 4,65 | 3,21 | 2,51 | 3,08 | 3,25 |
| | Min. | 24,00 | 21,00 | 29,50 | 29,00 | 37,00 | 34,00 |
| | Max. | 35,00 | 39,00 | 41,80 | 40,50 | 47,20 | 48,00 |
| Head circumference [cm] | x | 50,95 | 47,94 | 55,47 | 53,58 | 67,96 | 69,30 |
| | S | 5,98 | 5,80 | 6,55 | 5,34 | 5,29 | 4,64 |
| | Min. | 37,50 | 39,50 | 30,00 | 46,00 | 59,00 | 62,00 |
| | Max. | 61,00 | 59,00 | 67,00 | 71,00 | 76,50 | 76,00 |

x - P<0,05

er boars were characterized by similar length, i.e. ca. 140 cm. Statistically significant differences between males and females were also found in two other carcass measurements – height at withers and height at sacrum. The differences to the advantage of males were 5 cm and 3 cm respectively. In the group of one-year-old boars the difference was ca. 3 cm in both cases.

Correlation between carcass weight and measurements

Table 6a presents the coefficients of simple correlation between carcass weight and measurements in piglets. Height at withers and height at sacrum are significantly correlated with carcass weight ($r = 0.88$). A high correlation was also found between carcass weight and chest measurements in piglets (r from 0.75 to 0.91). Carcass length is closely correlated with height at withers and height at sacrum ($r = 0.93$).

In the group of one-year-old boars the correlation coefficients are slightly lower (Table 6b). Particular attention should be paid to the correlations between carcass weight and its length, height at withers and

height at sacrum (r from 0.85 to 0.89). The lowest correlation between carcass weight and measurements was observed in the oldest boars (Table 6c). In this group carcass weight was significantly correlated with chest girth ($r = 0.82$) and head circumference ($r = 0.84$).

Discussion

Carcass weight of wild boars changes over the year. Its intensive increase can be observed in the youngest animals, during the first several months after birth. The curves of growth in carcass weight presented by Fruziński and Skubis (1999) show that young boars reach the highest weight in November. Considerable weight gains noted in autumn are connected with easy access to food resources and good utilization of mother's milk at the end of lactation. In the group of one-year-old boars the highest weight gains were observed in November, and then at the end of winter (in February). The results of the present studies are consistent with the data in the literature. In north-eastern Poland intensive growth of piglets, up to one year of age, takes place until November and December. In the following year one-year-old boars reach their maximum weights in December.

According to the literature data (Drozd 1996) on body weight of wild boars, its average values are the following: piglets – ca. 26 kg, one-year-old boars – over 51 kg, older boars – ca. 77 kg. The wild boars examined in the present studies were characterized by relatively low weights, i.e. ca. 21, 35 and 69 kg respectively. The body weights of young and one-year-old boars shot in the Lublin Upland, Roztocze (mid-eastern Poland,) and in western Poland (Drozd 1996, Fruziński and Skubis 1999) turned out to be much higher, compared with the body weights of wild boars harvested in north-eastern Poland. Miłkowski and Wójcik (1984) reported that the average carcass weight of wild boars from the Białowieża Primeval Forest decreased considerably in the last decade. In their opinion it was caused by improper shooting structure.

A comparison between the results obtained by Drozd (1996) and those of our investigations shows that wild boars from the macroregion of mid-eastern Poland are characterized by longer carcasses than those from north-eastern Poland. The difference in particular age groups is as the following: piglets – ca. 10 cm, one-year-old boars – 12 cm, older boars – ca. 17 cm. The fact that the wild boars harvested in the present studies were smaller and lighter is probably connected with habitat quality. The experimental animals were shot in the hunting ground where the forest complex constitutes 93% of the total area (Forest Division Miłomłyn). Moreover, the tree species struc-

Table 6. Coefficients of simple correlation (*r*) between some traits of young boars (a), one-year-old boars (b) and older boars (c)

| Specification | Carcass weight | Carcass length | Height at withers | Height at sacrum | Chest girth | Forechest depth | Chest width | Head length | Head circumference |
|------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| a) piglets | | | | | | | | | |
| Carcass weight | 1,00 | | | | | | | | |
| Carcass length | 0,85 ^{xx} | 1,00 | | | | | | | |
| Height at withers | 0,89 ^{xx} | 0,93 ^{xx} | 1,00 | | | | | | |
| Height at sacrum | 0,88 ^{xx} | 0,93 ^{xx} | 0,99 ^{xx} | 1,00 | | | | | |
| Chest girth | 0,91 ^{xx} | 0,84 ^{xx} | 0,90 ^{xx} | 0,89 ^{xx} | 1,00 | | | | |
| Forechest depth | 0,89 ^{xx} | 0,91 ^{xx} | 0,92 ^{xx} | 0,92 ^{xx} | 0,92 ^{xx} | 1,00 | | | |
| Chest width | 0,75 ^{xx} | 0,66 ^{xx} | 0,71 ^{xx} | 0,71 ^{xx} | 0,89 ^{xx} | 0,71 ^{xx} | 1,00 | | |
| Head length | 0,65 ^{xx} | 0,86 ^{xx} | 0,78 ^{xx} | 0,77 ^{xx} | 0,74 ^{xx} | 0,77 ^{xx} | 0,61 ^{xx} | 1,00 | |
| Head circumference | 0,74 ^{xx} | 0,81 ^{xx} | 0,81 ^{xx} | 0,80 ^{xx} | 0,79 ^{xx} | 0,79 ^{xx} | 0,66 ^{xx} | 0,69 ^{xx} | 1,00 |
| b) one-year-old boars | | | | | | | | | |
| Carcass weight | 1,00 | | | | | | | | |
| Carcass length | 0,92 ^{xx} | 1,00 | | | | | | | |
| Height at withers | 0,94 ^{xx} | 0,86 ^{xx} | 1,00 | | | | | | |
| Height at sacrum | 0,93 ^{xx} | 0,84 ^{xx} | 0,99 ^{xx} | 1,00 | | | | | |
| Chest girth | 0,89 ^{xx} | 0,79 ^{xx} | 0,82 ^{xx} | 0,82 ^{xx} | 1,00 | | | | |
| Forechest depth | 0,87 ^{xx} | 0,82 ^{xx} | 0,84 ^{xx} | 0,85 ^{xx} | 0,93 ^{xx} | 1,00 | | | |
| Chest width | 0,82 ^{xx} | 0,72 ^{xx} | 0,73 ^{xx} | 0,72 ^{xx} | 0,86 ^{xx} | 0,78 ^{xx} | 1,00 | | |
| Head length | 0,78 ^{xx} | 0,78 ^{xx} | 0,73 ^{xx} | 0,71 ^{xx} | 0,72 ^{xx} | 0,74 ^{xx} | 0,66 ^{xx} | 1,00 | |
| Head circumference | 0,83 ^{xx} | 0,73 ^{xx} | 0,74 ^{xx} | 0,74 ^{xx} | 0,86 ^{xx} | 0,80 ^{xx} | 0,82 ^{xx} | 0,70 ^{xx} | 1,00 |
| c) older boars | | | | | | | | | |
| Carcass weight | 1,00 | | | | | | | | |
| Carcass length | 0,75 ^{xx} | 1,00 | | | | | | | |
| Height at withers | 0,58 ^{xx} | 0,63 ^{xx} | 1,00 | | | | | | |
| Height at sacrum | 0,71 ^{xx} | 0,69 ^{xx} | 0,77 ^{xx} | 1,00 | | | | | |
| Chest girth | 0,82 ^{xx} | 0,63 ^{xx} | 0,63 ^{xx} | 0,71 ^{xx} | 1,00 | | | | |
| Forechest depth | 0,35 ^{xx} | 0,21 | 0,14 | 0,12 | 0,52 ^{xx} | 1,00 | | | |
| Chest width | 0,62 ^{xx} | 0,48 ^{xx} | 0,43 ^{xx} | 0,57 ^{xx} | 0,82 ^{xx} | 0,41 ^{xx} | 1,00 | | |
| Head length | 0,54 ^{xx} | 0,63 ^{xx} | 0,61 ^{xx} | 0,69 ^{xx} | 0,54 ^{xx} | 0,16 | 0,38 ^{xx} | 1,00 | |
| Head circumference | 0,84 ^{xx} | 0,67 ^{xx} | 0,50 ^{xx} | 0,63 ^{xx} | 0,74 ^{xx} | 0,40 ^{xx} | 0,53 ^{xx} | 0,60 ^{xx} | 1,00 |

xx - $P < 0.01$

ture shows that the dominant one is pine (72.4%), whereas oaks and beeches constitute ca. 14% only.

Apart from carcass measurements, also the conformation index allows to determine the body structure type. In our studies the so called longitudinal conformation index was calculated. Our results are similar to those obtained by Drozd (1996), concerning wild boars from mid-eastern Poland. This author reported the following values of the longitudinal conformation index in particular age groups: piglets - 129.9, one-year-old boars - 138, older boars - 122.5. In our experiments the above indexes were 129.05, 132.33 and 126.24 respectively. These differences indicate that young and one-year-old wild boars from north-eastern Poland are characterized by a considerable increase in trunk length in relation to chest girth (pike-like shape), whereas older boars - by better developed chests in relation to carcass length (crucian carp-like shape).

The results of research conducted so far indicate sexual dimorphism of wild boars as regards certain traits (Fernandez-Llario and Mateos-Quesada, 1998, Fruziński 1993, Snethlage 1982, Wolf 1995). The data concerning carcass weight and measurements in males and females, obtained in the present investigations, are partly consistent with those found in the literature. As already said, wild boars from north-eastern Poland were lighter than those harvested in other regions, which resulted in differences in carcass measurements. For instance, in our studies the carcasses of piglets male and female were ca. 99 cm and ca. 94.5 cm in length, whereas according to other authors (Fruziński and Skubis 1999) these values were 106.7 cm and 105.5 cm respectively. As reported in the above paper, the carcasses of one-year-old male and female boars were 129.8 cm and 124.2 cm in length, whereas in our experiments - 117 cm and 114.5 cm respectively.

Although both carcass weight and measurements of male and female wild boars from the hunting ground examined were lower, sexual dimorphism was observed in many traits affecting carcass quality.

The literature provides no information about correlations between particular carcass measurements. The correlation between carcass weight and measurements in wild boars, discussed in the present paper, suggests that their conformation characters are also correlated. Special attention should be paid to significant correlations between carcass weight, its length, height at withers and height at sacrum.

Conclusions

1. The average carcass weights of wild boars harvested in the investigation area in the years 1998 – 2000 were: piglets – 21.23 kg, one-year-old boars – 35.05 kg, older boars – 68.84 kg.

2. An analysis of carcass proportions shows that they were changing with age. Piglets and one-year-old boars were characterized by a considerable increase in trunk length in relation to chest girth, whereas older boars – by better-developed chests in relation to carcass length.

3. The males, compared with the females, achieved higher body weights and carcass measurements. In the group of piglets the carcasses of males were by ca. 4 kg heavier and by ca. 4.5 cm longer than those of females. The difference in the height at withers was ca. 5 cm. In the group of one-year-old boars the carcasses of males were by over 4 kg heavier and by ca. 3 cm longer. The difference in the height at withers was ca. 3 cm.

4. There was a significant correlation between carcass weight and measurements. The coefficients of the correlation between carcass weight, trunk length, height at withers and height at sacrum varied from $r=0.88$ to $r=0.93$. Carcass measurements are easy to perform, which makes them a suitable tool for wild boar characteristics.

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БИОМЕТРИЧЕСКАЯ ХАРАКТЕРИСТИКА КАБАНА (*SUS SCROFA* L.) В СЕВЕРНО-ВОСТОЧНОЙ ПОЛЬШЕ

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Резюме

Хорошими коэффициентами качественной оценки онтогенеза животных являются биометрические измерения, которые отражают возраст, онтогенез и являются показателем качества среды. В целях определения возраста и разницы между самцами и самками были проведены измерения 167 шт. тушек кабанов в разном возрасте и разного пола, добытых на территории северно-восточной Польши. Средняя масса туши исследуемых кабанов составляет: подсосунки свыше 21,23 кг, годовалые кабаны около 35,05 кг и кабаны постарше около 69,84 кг. Выявлено статистические различия между некоторыми чертами самцов и самок. Масса тушек подсосунк самцов, в сравнении с самками, была больше на около 4 кг. и тушки длиннее на около 4,5 см. В группе годовалых кабанов тушки самцов, в сравнении с самками, оказались тяжелее на свыше 4 кг и длиннее на около 3 см. Установлено существенную зависимость между массой и размерами туши кабанов. Коэффициент корреляции между массой тушки и длиной туловища, высотой в холке и крестовине составляет $r = 0,93$.

Ключевые слова: кабан, *Sus scrofa*, вес, измерение туши