

SEASONAL PATTERN OF WILD BOAR'S DIET IN WESTERN POLAND – RESEARCH IN THE ZIELONKA GAME INVESTIGATION CENTRE

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Abstract. The stomach content of 74 wild boars harvested in the Zielonka Game Investigation Centre in 2005-2007 were analyzed. According to the hunting management schedule and the cycles of forest and farmland food occurrence, three research seasons were selected and compared with respect to the trophic behaviour of wild boar. As many authors claimed, the animals extraordinarily tended to eat mainly the feed supplied to the forest. Such a disruption in the natural use of the food niche in the forest environment, resulting from an irrational feeding policy, interferes with the natural trophic role of this species.

Key words: wild boar (*Sus scrofa* L.), behaviour, diet composition, feeding effect

INTRODUCTION

Wild boar (*Sus scrofa* L.) currently forms the most reproductive and numerous big game population in Poland. Many adaptive features of this species – mainly the food opportunism, resistance to a seasonal lack of food and extreme weather conditions, and a high rate of juvenile survivorship – resulted in dramatic increases in the size of its populations, which were already repeatedly described. A favourable factor is a radically intensified agricultural production, which, in summer and autumn, provides wild boar with unprecedented availability of food that is rich in protein and of high caloric value. Moreover, the abundance of food and shelter in the farmland undoubtedly result in a seasonal widening of the refuge area which by the harvest time also includes crop fields.

METHODS

Wild boar's diet composition was analysed based on the content of the stomachs supplied by the hunters who shot the animals in the Zielonka Game Investigation Centre (Zielonka GIC). Frozen or fresh stomachs were transported to the Department of Forest Management in Poznań. They were weighed on an electronic scale accurate to one gram (1 g), and the results were recorded in description sheets (Fig. 1). After weighing, the stomachs were cut along the greater curvature from the cardia to the pylorus so that after pulling the stomach wall aside an accurate drawing of the visible food layers could be made.



Fig. 1. Weighing a stomach
Rys. 1. Ważenie żołądka

Each of the distinguished and visible fractions was then separated and weighed. The following data were recorded in the description sheets regarding each fraction: type of the content, number of 'meals', weight, colour, smell, composition (initially determined). Some foods, including the larvae of insects, vertebrates and carrion, were collected and weighed. Samples of 100 g were collected from each fraction, and used later for identifying the species or a group of plants or animals eaten by the animal. To this end, a laboratory magnifying glass with a magnification of ten times was used. The numbered preparations were fixed in a 4% solution of formalin in jars. Some of the samples were given to experts for a precise identification. Nevertheless, all the fractions which were put into a container to rinse them out were examined with a magnifying glass. With 24 samples (autumn and winter 2006/07), it was possible to determine the content of skeleton pieces in the soil (sand), by employing sedimentation combined with rinsing the material out several times.

The seasonal pattern of various foods in wild boar's environment stimulates the trophic behaviour of this herbivorous and omnivorous species. Therefore, considering

earlier research works and the present observations, the samples were divided into three groups which were separately described and corresponded to the following periods:

- 1) autumn and winter 2005/06,
- 2) spring and summer 2006,
- 3) autumn and winter 2006/07.

RESULTS

Table 1. Dating and number of the examined stomachs
Tabela 1. Datowanie i frekwencja badanych żołądków

Research season Wyróżnione okresy badań	Dating Datowanie	Age class Number of individuals, n Klasy wieku Liczba osobników, n			Total Razem
		1	2	3	
		1. Autumn, winter 2005/06 1. Jesień-zima 2005/06	September-December January-February wrzesień-grudzień styczeń-luty	12	
2. Spring, summer 2006 2. Wiosna-lato 2006	April-August kwiecień-sierpień	–	20	2	22
3. Autumn, winter 2006/07 3. Jesień-zima 2006/07	September-December January-February wrzesień-grudzień styczeń-luty	14	4	6	24
Total Razem		26	37	11	74

Age class 1 – piglets, wild boars younger than 12 months.

Age class 2 – yearlings, wild boars aged between 12 and 24 months.

Age class 3 – adults, wild boars aged over 2 years.

Klasa wieku 1 – warchlaki, dziki do 12 miesiąca życia.

Klasa wieku 2 – przelatki, dziki od 12 do 24 miesiąca życia.

Klasa wieku 3 – wycinki, dziki ponaddwuletnie.

Interpretation of the autumn and winter 2005/06 results

In season 2005/06 oak produced moderate amounts of nuts, which resulted in a fairly high rate of acorns in wild boar's diet: they comprised 52% of the forest food among the piglets, 90% among the yearlings and 96% among the adults (Tables 2, 3, 4, Fig. 2). The acorns made up one third of the overall examined food content of the piglets, 40% of the yearlings and 50% of the adults. The second largest fraction was the vegetative and storage parts of the forest floor plants, with the highest weight (30%) found among the piglets. The stomachs of five wild boars revealed large quantities of the fruits of black cherry, being a common species in Zielonka GIC's forests; one of the piglets ate as much as 730 g. However, the sweet stone fruits of the black cherry should

Table 2. Stomach content analyses of 28 wild boars harvested in autumn and winter 2005/06
 Tabela 2. Wyniki analiz pokarmowych 28 żołądków dzików pozyskanych w sezonie jesienno-zimowym 2005/06

Type and source of food by the type and age class Rodzaj i pochodzenie żeru w zestawach i według klas wieku	Fraction weight Ciężar frakcji g	Fraction weight as a percentage of the food type weight Udział względny frakcji w zestawie %	Fraction weight as a percentage for the age class Udział względny frakcji w grupie wiekowej %	Number of stom- achs with a given fraction Liczba żołądków z udziałem frakcji n
1	2	3	4	5
Piglets – Warchlaki				
Farmland food – Żer polny				
Beet Buraki	2 827	88.5	32.2	3
Maize Kukurydza	52	1.6	0.6	1
Apple and pear fruit Owoc jabłoni i gruszy	314	9.9	3.6	3
Total Razem	3 193	100	36.4	
Forest food – Żer leśny				
Acorns Żołędzie	2 876	52.0	32.8	10
Forest floor plants Rośliny runa	1 337	24.1	15.2	11
Bird cherry fruit Czeremcha owoc	1 320	23.9	15.1	5
Total Razem	5 533	100	63.1	
Animal food – Żer zwierzęcy				
Insects: larvae of flies, pine sawfly pupae Owady: larwy komarnic, muchówek bobówka borecznika	21	45.6	0.2	6
Annelids Pierścienice	8	17.4	0.1	2
Edible snail Winniczek	10	21.8	0.1	1
Rodents Gryzonie	7	15.2	0.1	1
Total Razem	46	100	0.5	
Piglets in total Razem warchlaki	8 772		100	

Table 2 – cont. / Tabela 2 – cd.

	1	2	3	4	5
Yearlings – Przelatki					
Farmland food – Żer polny					
Beet Buraki		8 259	66.6	33.7	4
Maize Kukurydza		1 359	10.5	5.6	6
Barley Jęczmień		2 740	21.7	11.2	3
Apple and pear fruit Owoc jabłoni i gruszy		159	1.2	0.6	3
Total Razem		12 517	100	51.1	
Forest food – Żer leśny					
Acorns Żołędzie		9 756	89.9	39.8	8
Forest floor plants, litter of Scots pine Rośliny runa, igliwie sosny		1 097	10.1	4.5	11
Total Razem		10 853	100	44.3	
Animal food – Żer zwierzęcy					
Carriion (roe-deer, unidenti- fied) Padlina (sarna i nn)		434	38.6	1.8	2
Larvae of flies Larwy muchówek		685	61.0	2.8	6
Rodents Gryzonie		4	0.4	-	1
Total Razem		1 123	100	4.6	
Yearlings in total Razem przelatki		24 493		100	
Adults – Wycinki					
Farmland food – Żer polny					
Beet root Korzenie buraków		1 327	100	48.2	2
Total Razem		1 327	100	48.2	
Forest food – Żer leśny					
Acorns Żołędzie		1 369	96.5	49.7	3

Table 2 – cont. / Tabela 2 – cd.

1	2	3	4	5
Forest floor plants Rośliny runa	49	3.5	1.8	2
Total Razem	1 418	100	51.5	
Animal food – Żer zwierzęcy				
Larvae of flies Larwy muchówek	10	100	0.3	2
Total Razem	10	100	0.3	
Adults in total Razem wycinki	2 755		100	

Table 3. Food types in the overall food weight in autumn and winter 2005/06

Tabela 3. Udział zestawów pokarmowych w ogólnej masie żeru w sezonie jesienno-zimowym 2005/06

Food type Zestaw pokarmu	Overall weight of samples Masa ogółem w próbach g	Weight as a percentage of the overall weight Udział w ogólnej masie %	Number of samples per food type Liczba prób w zestawie n
Forest food Pokarm leśny	17 804	49.4	25
Farmland food Pokarm polny	17 037	47.3	14
Animal food Pokarm zwierzęcy	1 179	3.3	19
Total Razem	36 020	100	

be considered only as a local and seasonal food component, emphasizing the omnivorous character of wild boar. A similar role may be ascribed to the fruits of pear tree and apple tree wildings, with the highest weight (3.6%) among the piglets. These fruits were considered the farmland food, as the animals found them under the trees in the fields adjacent to the forest. As a consequence of winter feeding – supplying beetroot, maize and barley to the forest – there was so much farmland food in wild boar stomachs that this type of food accounted for only two percentage points less than the forest food in the overall diet composition (47.3% and 49.4%, respectively). The yearlings and adults ate similar quantities of the feed – 51% and 48%, respectively, and it constituted only 36% of the piglets' diet composition (Tables 2, 3, 4).

As for the animal food, various development stages of insects were most common, and some carrion, a snail, pieces of a rodent, and annelids were also found. A small fraction (under 1%) of this type of food is typical of Zielonka GIC wild boar's diet, but in the examined group of animals the percentage weight of the animal food was

Table 4. Food types per age class in autumn and winter 2005/06

Tabela 4. Udział wyróżnionych zestawów pokarmowych w poszczególnych klasach wieku w sezonie jesienno-zimowym 2005/06

Food type Zestaw pokarmu	Piglets Age class 1 Warchlaki I klasa wieku		Yearlings Age class 2 Przelatki II klasa wieku		Adults Age class 3 Wycinki III klasa wieku		Total Razem	
	g	%	g	%	g	%	g	%
	Forest food Pokarm leśny	5 533	63.1	10 853	44.3	1 418	51.5	17 804
Farmland food Pokarm polny	3 193	36.4	12 517	51.1	1 327	48.2	17 037	47.3
Animal food Pokarm zwierzęcy	46	0.5	1 123	4.6	10	0.3	1 179	3.3
Total Razem	8 772	100	24 493	100	2 755	100	36 020	100

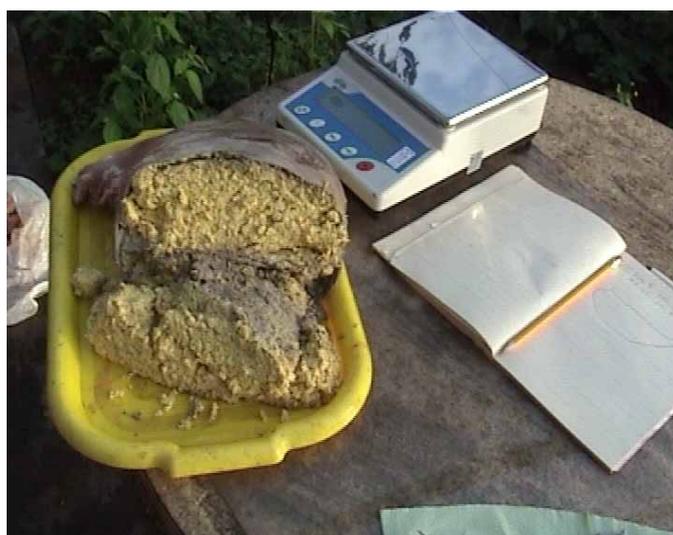


Fig. 2. Cross-section of a stomach

Rys. 2. Widok zawartości żołądka w przekroju

extraordinarily high, i.e. 3.3%. The quantities of the larvae of flies were found to be above the average in the stomachs of the yearlings in individual cases (240 g and 390 g); in one case 350 g of the muscular tissue of roe-deer carrion was found. The larvae of insects were not scattered throughout a stomach but clustered as a clearly separate fraction, which indicates that the wild boars intentionally searched for them in the row humus layer ('zero' soil layer). According to forest entomologists, during the warm and long autumn of 2005, the larvae of these insects occurred in large numbers in places with a thick raw humus layer.

Interpretation of the spring and summer 2006 results

After the winter, the wild boars apparently started to feed in the crop fields. From 22 examined wild boars, only two had small quantity of only forest food (nettle, the leaves of other forest plants, forest fruits and grubs), because they were shot in the evening, i.e. before their main feeding time. The forest foods comprised mainly the nettle, grasses, some forest floor dicotyledons which were difficult to identify, small quantities of acorns, rhizomes and rootlets of perennial plants, and a fruit of wild pear. In total, they accounted for 7.7% of the food composition of the examined group of animals (Table 5, 6, 7). The farmland food accounted for 92% of the overall food weight, and was fairly varied. In most part – 57% among the yearlings and 100% among the adults – this type of food comprised the ears of rye, wheat, oats and barley. Most of the ears were eaten at the stage of milk and wax maturity, but some mature and dry ears were also found, eaten probably in the stubble fields just after the harvest. However, it was found that some ears with grain have been fully ground and some only swallowed – regardless of the age and the teeth condition of the wild boars, which was curious and difficult to explain; in some stomachs there were large portions of whole ears that seemed to have been swallowed in haste.

Table 5. Stomach content analyses of 22 wild boars harvested in spring and summer 2006
Tabela 5. Wyniki analiz pokarmowych 22 żołądków dzików pozyskanych w sezonie wiosenno-letnim 2006

Type and source of food by the type and age class Rodzaj i pochodzenie żeru w zestawach i według klas wieku	Fraction weight Ciężar frakcji g	Fraction weight as a percentage of the food type weight Udział względny frakcji w zestawie %	Fraction weight as a percentage for the age class Udział względny frakcji w grupie wiekowej %	Number of stomachs with a given fraction Liczba żołądków z udziałem frakcji n
1	2	3	4	5
Yearlings – Przelatki				
Farmland food – Żer polny				
Cereals, green parts, spring Zboża, zielonka, wiosna	2 778	9.7	8.8	2
Cereals, seeds, seeding Zboża ziarna zasiew	7 170	25	22.7	7
Cereals, ears of rye, wheat, oats, barley Zboża, kłosa: żyto, pszenica, owies, jęczmień	18 066	63.1	57.1	10
Apples, green parts of meadow and farmland plants Jabłka, zielonka łąkowo-polna	630	2.2	2	4
Total Razem	28 644	100	90.5	

Table 5 – cont. / Tabela 5 – cd.

	1	2	3	4	5
Forest food – Żer leśny					
Grasses, forest floor plants Trawy, runo		1 208	41.3	3.8	3
Wild pears Dzikie gruszki		824	28.2	2.6	2
Rhizomes, rootlets, acorns Kłącza, korzonki, żołądzie		894	30.5	2.8	1
Total Razem		2 926	100	9.3	
Animal food – Żer zwierzęcy					
Larvae of flies, snails, grubs Larwy muchówek, ślimaki, pędraki		37	100	0.1	4
Total Razem		37	100	0.1	4
Sand – Piasek		32	100	0.1	6
Yearlings in total Razem przelatki		31 639	100	100	
Adults – Wycinki					
Farmland food – Żer polny					
Cereals, ears of rye, barley Zboże, kłosy żyta i jęczmień		6 328	100	100	2
Adults in total Razem wycinki		6 328	100	100	

Table 6. Food types in the overall food weight in spring and summer 2006

Tabela 6. Udział zestawów pokarmowych w ogólnej masie żeru w sezonie wiosenno-letnim 2006

Food type Zestaw pokarmu	Overall weight of samples Masa ogółem w próbach g	Weight as a percentage of the overall weight Udział w masie ogólnej %	Number of samples per food type Liczba prób w zestawie n
Forest food Pokarm leśny	2 926	7.7	6
Farmland food Pokarm polny	34 972	92.1	20
Animal food Pokarm zwierzęcy	37	0.1	4
Mineral fraction Frakcja mineralna	32	0.1	6
Total Razem	37 967	100.00	

Table 7. Food types per age class in spring and summer 2006

Tabela 7. Udział wyróżnionych grup pokarmu w poszczególnych klasach wieku w sezonie wiosenno-letnim 2006

Food type Zestaw pokarmu	Piglets Age class 1 Warchlaki I klasa wieku		Yearlings Age class 2 Przelatki II klasa wieku		Adults Age class 3 Wycinki III klasa wieku	
	g	%	g	%	g	%
	Forest food Pokarm leśny	2 926	9.3	–	–	2 926
Farmland food Pokarm polny	28 644	90.5	6 328	100	34 972	92.1
Animal food Pokarm zwierzęcy	37	0.1	–	–	37	0.1
Sand Piasek	32	0.1	–	–	32	0.1
Total Razem	31 639	100	6 328	100	37 967	100

The yearlings fed in the crop fields just after the winter and during the spring seedling period, since as much as 30% of the overall food content comprised the green parts of winter cereals (8%) and the rooted, sprouting seeds of spring cereals, mainly barley and wheat. The amounts of the animal food (the larvae of flies, snails and grubs) and the sand collected while the food content was rinsed out were insignificant (both less than 0.1%). When commenting the spring and summer food composition of the examined population sample, it should be emphasized that in Zielonka GIC the ban on shooting wild boar in summer in the forest, where they are provided with supplementary feed, including maize, is exceptionally well observed.

No maize was found in the examined stomachs, which indicates that it is less attractive than the maturing cereals, or that the examined sample was not representative as it might comprise the animals which only or mostly fed on the farmland food.

Interpretation of the autumn and winter 2006/07 results

What should be pointed out with regard to the following interpretation of the results is that 2006 was the mast year of beech, and some oaks also produced a lot of acorns; nevertheless, the feed was supplied to the forest and hunting dates were scheduled as in the previous season 2005/06. In the overall food content of 46 kg collected from the stomachs of 24 wild boars, the forest food accounted for almost three quarters (72%), the farmland food for over 27%, the animal food for 0.5%, and sand for 0.2% (Tables 8, 9, 10). The evident predominance of the forest food over the farmland one mostly resulted from the abundance of beechnuts on the forest bed. It made up 64% of the overall food content collected from the stomachs of the wild boars of all the age classes altogether. The piglets satisfied half of their food demand with the beechnuts, the yearlings 85% and adults 70%. Despite a high availability of acorns, they made up only 7%, and the underground parts of plants only 1%, of the animals' diet in this period. Also in this

Table 8. Stomach content analyses of 24 wild boars harvested in autumn and winter 2006/07
 Tabela 8. Wyniki analiz pokarmowych 24 żołądków dzików pozyskanych w sezonie jesienno-zimowym 2006/07

Type and source of food by the type and age class Rodzaj i pochodzenie żeru w zestawach i według klas wieku	Fraction weight Ciężar frakcji g	Fraction weight as a percentage of the food type weight Udział względny frakcji w zestawie %	Fraction weight as a percentage for the age class Udział względny frakcji w grupie wiekowej %	Number of stomachs with a given fraction Liczba żołądków z udziałem frakcji n
1	2	3	4	5
Piglets – Warchlaki				
Farmland food – Żer polny				
Beet Buraki	7 542	83.5	31.3	4
Cereals: barley, maize Zboża: jęczmień, kukurydza	1 488	16.5	6.2	3
Total Razem	9 030	100	37.5	
Forest food – Żer leśny				
Beechmast Bukiew	12 815	86.5	53.2	9
Acorns Żołędzie	2 000	13.5	8.3	2
Total Razem	14 815	100	61.5	
Animal food – Żer zwierzęcy				
Carrion, larvae of flies Padlina, larwy komarnic i muchówek	191	100	0.8	7
Total Razem	191		0.8	
Sand – Piasek	61	100	0.2	13
Piglets in total Razem warchlaki	24 097			
Yearlings – Przelatki				
Forest food – Żer leśny				
Beechmast Bukiew	7 572	86.1	85.7	3
Acorns Żołędzie	1 162	13.2	13.2	1
Rootlets, rhizomes Korzonki, kłącza	61	0.7	0.7	1
Total Razem	8 795	100	99.6	

Table 8 – cont. / Tabela 8 – cd.

	1	2	3	4	5
Animal food – Żer zwierzęcy					
Larvae of flies, ground beetle Larwy muchówek, biegacz		21	100	0.2	1
Total Razem		21		0.2	
Sand – Piasek		19	100	0.2	4
Yearlings in total Razem przelatki		8 835			
Adults – Wycinki					
Farmland food – Żer polny					
Beet root Korzenie buraków		3 560	100	27.3	2
Total Razem		3 560		27.3	
Forest food – Żer leśny					
Beechmast Bukiew		9 072	96.2	69.6	4
Forest floor plants Rośliny runa		355	3.8	2.7	1
Total Razem		9 427	100	72.3	
Animal food – Żer zwierzęcy					
Larvae of flies, other Larwy muchówek, inne		27		0.2	2
Total Razem		27		0.2	
Sand – Piasek		22		0.2	5
Adults in total Razem wycinki		13 036			

season, the consequence of feeding the game was that the wild boars to a large extent resigned from searching for the forest food, and satisfied their hunger with the supplied beetroots and grain which accounted for 27% of the food content.

The animal food comprised some pieces of a small rodent, the larvae of insects and ground beetles, and accounted for 0.5% of the total food content. The sand collected from the stomachs made up only 0.2% of the total food content; a similar amount of sand was found in each stomach. It seems self-evident that sand occurs in wild boar's digestive system in a natural manner (rooting, eating the parts of plants near the ground, covered with sand). However, we do not know the tolerance limit of the system for the sand load in crisis conditions, when wild boar can find no food above the surface of the ground and has to root for the underground parts of plants, often finding only starvation-

Table 9. Food types in the overall food weight in autumn and winter 2006/07

Tabela 9. Udział zestawów pokarmowych w ogólnej masie żeru w sezonie jesienno-zimowym 2006/07

Food type Zestaw pokarmu	Overall weight of samples Masa ogółem w próbach g	Weight as a percentage of the overall weight Udział w ogólnej masie %	Number of samples per food type Liczba prób w zestawie n
Pokarm leśny Forest food	33 037	71.9	19
Pokarm polny Farmland food	12 590	27.4	9
Pokarm zwierzęcy Animal food	239	0.5	10
Frakcja mineralna Mineral fraction	102	0.2	23
Razem Total	45 968	100.00	

Table 10. Food types per age class in autumn and winter 2006/07

Tabela 10. Udział wyróżnionych zestawów pokarmu w poszczególnych klasach wieku w sezonie jesienno-zimowym 2006/07

Food type Zestaw pokarmu	Piglets Age class 1 Warchlaki I klasa wieku		Yearlings Age class 2 Przelatki II klasa wieku		Adults Age class 3 Wycinki III klasa wieku		Total Razem	
	g	%	g	%	g	%	g	%
	Forest food Pokarm leśny	14 815	61.5	8 795	99.6	9 427	72.3	33 037
Farmland food Pokarm polny	9 030	37.5	–	–	3 560	27.3	12 590	27.4
Animal food Pokarm zwierzęcy	191	0.8	21	0.2	27	0.2	239	0.5
Sand Piasek	61	0.2	19	0.2	22	0.2	102	0.2
Total Razem	24 097	100	8 835	100	13 036	100	45 968	100

-level quantities of food. The agricultural produce that was supplied to the forest as part of game feeding practices accounted for 27% of the food content of all the stomachs. This type of food made up 37% of the food content of the piglets and 27% of the adults, while none was found in the yearlings' stomachs. As in some stomachs both the forest foods (beechnuts, acorns, forest floor plants) and, for instance, the beetroots alone were found, one may suspect that those wild boars which are mostly attracted by the supplied feed are less eager to look for natural foods than before the feed was supplied.

SYNTHESIS AND DISCUSSION

The analyses of the food content in wild boar stomachs in the selected periods provide an in-depth insight into the trophic position of wild boar in Zielonka GIC's environment. The main results are based on the materials collected and described for three separate research seasons: two autumn and winter periods in seasons 2005/06 and 2006/07, and one spring and summer period in 2006. In total, 74 stomachs were analysed, including 28 from the autumn and winter 2005/06, 22 from the spring and summer 2006, and 24 from the autumn and winter 2006/07. In the research, 26 piglets, 37 yearlings and 11 adults were represented.

The variety and occurrence patterns of the food types indicates that the wild boars in Zielonka GIC treat the forest as a refuge and a place to feed, but only in the periods when there is plenty of natural food. The attachment of wild boar to the forest environment may be also achieved by supplying agricultural produce to the forest, which results in an intense and fast response of the animals.

All the reference papers on wild boar's diet seem to indicate the increase in the trophic synanthropism of wild boar and the widening of its habitat [Lebedeva 1956, Haber 1966, Janda 1958, Kozlo 1975, Briedermann 1976, Andrzejewski and Jezierski 1978, Łabudzki and Wlazelko 1991, Wlazelko and Łabudzki 1992, Cellina et al. 2005].

In summer, the wild boars were definitely attracted by the foods found in the fields adjacent to the forest, and as much as 92% of the overall diet was the agricultural produce. Similarly, in the autumn and winter seasons, despite the availability of attractive natural foods (acorns, beechnuts), a strikingly strong tendency to eat the farmland food was revealed. Supplying sugar beets and grain to the forest – mainly to feed the deer species – made wild boar suddenly depart from natural foods in favour of the supplementary feed that was easily accessible.

In season 2005/06 in particular, over one third (34%) of the food content in the examined stomachs was beetroots – despite the availability on the forest bed of acorns, which are always attractive to wild boar.

This relation was confirmed in the autumn and winter 2006/07 season when a relatively high availability of beechnuts – given Zielonka GIC's conditions – did not dissuade the wild boars from eating the beetroots that had been supplied to the forest. Therefore, the beetroots were quite common in the food content: 53% in the case of the piglets and 27% in the case of the adults. The stomachs of the yearlings killed in this season did not contain beetroots. This seemingly incomprehensible fact may be explained by the ecological characteristics of wild boar: the social ties of a group may be the reason for a uniform behaviour, also with respect to the trophic behaviour. Hence, all members of a pack (group) eat similar foods, and an appropriate sample (random killing) for examining the whole population may not be collected, because the samples representative for all, or most, groups may not be provided. In this case, all the farmland food – the beetroots and some grain – was eaten as the feed supplied to the forest. As it turned out, the supplied agricultural produce was in the research period attractive enough to make up a significant, or sometimes the larger, part of the food content of the examined wild boars. One can therefore conclude that supplying the feed to the forest disturbs the view of the natural trophic niche and is the reason for distorted results of

any food content analysis. Hence, the natural food resources and their use by wild boar should never be assessed if the animals are provided with supplementary feed, a practice being obligatory almost everywhere.

The results of the research on food relations with respect to Zielonka GIC's wild boars can have a research value for most Wielkopolska's hunting grounds as their hunting management policies, forest sites and crop fields are similar. Considering wild boar's diet not only regarding its composition but also the seasonal and conditional food selectivity may result in developing more rational ways of keeping wild boar within the forest boundaries. Supplementary feeding, particularly as part of a management and breeding policy, should be preceded by a careful observation of phenological occurrences, which extend wild boar's food base. Such a consideration may be given to mast years of oak and beech as useful in planning the breeding policy. One should bear in mind that wild boar has an excellent capability to use the natural, plant components of the forest food niche, and any ill-considered breeding interventions – e.g. too early or too concentrated feeding practices – adversely affect the diet composition, the spatial distribution and the rational use of the food resources available in the environment.

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SEZONOWOŚĆ DIETY DZIKÓW W ZACHODNIEJ POLSCE – BADANIA W OŚRODKU HODOWLI ZWIERZYNY „ZIELONKA”

Streszczenie. W latach 2005-2007 na terenach Ośrodka Hodowli Zwierzyny „Zielonka” zostały sporządzone analizy żołądków 74 dzików odstrzelonych w czasie użytkowania łowieckiego. Względny podtytułowany kalendarium gospodarki łowieckiej oraz cyklicznością pojawów żeru leśnego i polnego zadecydowały o wyróżnieniu trzech sezonów badawczych, które porównywano pod względem trofizmu dzika. Potwierdziło się przekonania

nie wielu autorów o nadzwyczajnej skłonności tych zwierząt do korzystania z karmy wykładanej w lesie. Zakłócenia naturalnego sposobu wykorzystywania niszy pokarmowej środowiska leśnego za sprawą nieracjonalnego dokarmiania wynaturzają przyrodzoną rolę troficzną tego gatunku.

Słowa kluczowe: dzik, behawior, skład diety, efekt dokarmiania

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