Teka Kom. Ochr. Kszt. Środ. Przyr., 2004, I, 130-138

WHITEBACKS – THE NATIVE CATTLE OF THE POLESIE REGION

Zygmunt Litwińczuk, Piotr Stanek, Witold Chabuz, Przemysław Jankowski

Katedra Hodowli Bydła
Akademia Rolnicza, ul. Akademicka 13, 20-950 Lublin
e-mail: zhbyd@ursus.ar.lublin.pl

Summary. Regarding the specificity of the conditions prevailing at Polesie the main aim of livestock rearing and breeding in this region should be production of high quality foods (milk, meat, eggs) based on the natural feed resources (so called safe food). Another and still important task for this region is the restitution and conservation of the genetic resource natural for the Polesie breeds and varieties of farm animal. The whitebacks, kept in the eastern part of Poland within the living memory, show some specific qualities, the main being their adaptation to the most popular cattle pedigree at Polesie. These characteristics appreciated so highly by farmers let maintain single animals of this breed at some small farms on the Bug river by now. In the 1990's the Department of Cattle Breeding, University of Agriculture in Lublin established a project for this cattle restitution and its genetic resource protection and thanks to these efforts in 2003 the Ministry of Agriculture acknowledged whitebacks to be the Polish native cattle pedigree, which resulted in breeding registers opening. As a consequence, in 2004 FAO registered this cattle at the world list of breeds with genetic resource conserved. And so, there are no objections to the whitebacks rebreeding at their centuries-old grounds, that is the Polesie region.

Key words: Polesie Lubelskie, resources genetics animals, whitebacks

POLESIE SPECIFICITY AND QUALITIES

Polesie is a specific region as against the rest of this country. There are considerably more permanent grasslands, bogs and peat-lands, while less arable land. The present afforestation, corresponding with the Polish mean, has undisputable conditions for the potential growth due to substantial percentage of fallows and barren lands subjected to the natural plant succession. Attractiveness of the Polesie is also high due to numerous objects of special tourist-touring-cognitive qualities, among others the Polesie and Szacki National Park, landscape parks, natural reserves, natural-didactic paths, natural monuments and pecularities. Taking these facts into account, it should be assumed that this region is mainly predisposed to serve as a recreation and health resort, so the plant and animal production in the local farms should fall into this line and be appro-

priately profiled [Andrzejewski and Weigle 1994, Nowicki 1997, Dobrowolski and Harasimiuk 2002].

Considering the specificity of the Polesie conditions, the dominant aim of the livestock raising and breeding in this region is expected to be production of high quality food products (milk, meat, eggs) based on natural feed resources (so called safe food). An equally important task for this region seems to be the restitution and protection of the genetic resources of the native Polesie breeds as well as other farm animals varieties, e.g. red cattle and **whitebacks**, kopczyk podlaski horse, **ostroucha** and pulawska pig, green-legged hen, **wrzosówka** and **świniarka** sheep [Moczarski 1907, Malicki and Litwińczuk 2002].

NATIVE BREEDS AS A CULTURAL HERITAGE ELEMENT

The English breeders say: „the power of nation is attested by a number of animal breeds accomplished". They ensure maintenance of many valuable features like strong conformation, longevity, high fertility, easy parturitions, immunity to diseases, only few nutrient requirements, good adaptation to the local conditions, good quality of the products manufactured. At present this very last feature seems to be vital as the food obtained through the intensive breeding does not always appear to be safe and healthy. In Europe the local and regional products are in demand being healthy and the extensive local animal pedigrees provide such food [Nitkowski 1904, Report ... 1935/36].

The works from the last decade [Sasimowski E. 1983, Wężyk and Cywa-Benko 1992, Nowacka 1993, Andrzejewski and Weigle 1994, FAO programme... 1996, Litwińczuk 2003a, b, Litwińczuk *et al.* 2003] clearly emphasized the function of native breeds in the maintenance of biodiversity of the rural areas of high natural qualities (e.g. protected areas, park envelopes etc.) through the promotion of the local breeds grazing to protect habitats of great natural worth. A good example is The Grazing Animal Project commenced in 1998 in Great Britain and supported by The English Nature – a non-governmental organization engaged in nature protection. In numerous countries (including Poland) many organizations occupied with the nature conservation are the active partners in the animal native pedigrees protection, e.g. The Polish Ornithological Society, which supports (also financial aid) the breeding of Polish red cattle in the Narew river-basin, where the cattle is grazed at the meadows in the Narew overflow-arms that are valuable breeding grounds for birds.

One of the significant elements of the conservation is to use the native breeds in hard environmental conditions, e.g. poor pastures (mountain, wet areas) keeping traditional production systems. Return to the old production systems relinquished in the intensive animal breeding is likely to broaden the rural folklore and tourist values and as a result may be an important component of the economic development of the region, e.g. grey Hungarian cattle, buffaloes, Mangalica pigs at the Hungarian steppe. Many native breeds are characterized by great fertility and fecundity that can be used in the trade production as a really significant element (particularly females) at intercrosses [Nowacka 1993, Litwińczuk 2003b].

Many old pedigrees recognized even for centuries, are markedly inferior to the „modern breeds" with respect to numerous utility attributes, like milk quantity, daily body weight gain or earlier slaughter maturity. Yet, they have advantages over the new

breeds concerning milk and meat quality as well as frequently just a few needs concerning the climatic conditions or feed and their resistance to diseases. At the same time these old pedigrees constitute important cultural heritage of some region and a valuable „gene bank" [Goszczyński *et al.* 1994, Kośmicki 1998].

HISTORY OF WHITEBACKS

The name „Whitebacks" appeared as early as in Gunthner's work from 1853 (Remarks on the cattle breeding – Tarnów). Klecki [1903] mentioned the term „powiślańskie" and „nadwiślańskie" cattle. In the account on the survey made in 1899 by the Agricultural Division to check the state of cattle breeding in the Poland Kingdom and elaborated by St. Chaniewski, in the description of the Polish cattle of the Warsaw Province we find a mention about the „powiślańskie" cattle. In the Agricultural Encyclopaedia issued in 1972 in Warsaw owing to the endeavours and outlay of the Ministry of Industry and Agriculture, T. Chłapowski in his paper „The Cattle" writes: „on the Powiśle between the Prussian boundary and Warsaw you can meet a cattle breed reminding some żóławska breed, milk cattle of splendid exterior" [Nitkowski 1904, Pruski 1967, Litwińczuk 2003b]. The name nadwiślańskie cattle or nadwiślańskie whitebacks appear in the years 1903-1906 in the works by Nitkowski [Litwińczuk *et al.* 2003].

It follows from Słowińska's work published in 1919 that whitebacks and żóławki were also kept occasionally in Lithuania and The White Russia, where they constituted about 10% of stock [Pająk 1968].

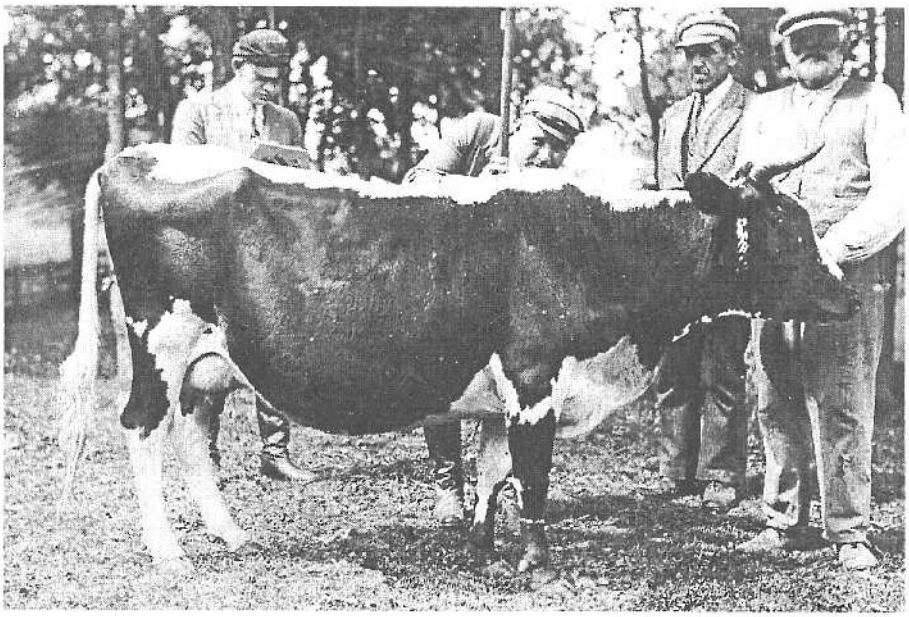
WHITEBACKS AT POLESIE

The Reports of the Agricultural Chamber [1935/36] show that in 1936 at the Polesie region there existed a breeding stock of the local whiteback cattle, which made around 6% of stock heads. The proceedings of the conference on the breeding problems held in 1937 indicate that the Brest and Kobryn districts had a striking number of whitebacks recorded. This cattle was used subject to the rearing conditions. In the north-western part of Polesie, a drier one, they were used rather as milk cattle, whereas in the south-east, a boggy region, they grazed on the wet pastures and were reared for meat.

Alfred Sachs' master's thesis [1935] written at the Faculty of Agriculture, the University of Agriculture in Warsaw in 1935 mentions that in the Brest district in 1931 over 75 of cattle was maintained, over 66 sheep, over 34 horses, about 58 pigs and 300 goats. So the typical herbivorous animals prevailed among the farm animals. The author holds that 5.18 ha of arable land fell on one horse, then 3.83 ha total area (in that about 0.9 ha meadows and pastures)/cow and 2.5 ha/sheep. Summing up, the author says that: „assuming that one mature cow needs for the whole summer at average 0.5-1.0 ha depending on pasture fertility, we know that the number of pastures and meadows is absolutely sufficient, the more so as woods were not considered here and they are often used as pastures. Sheep, as not demanding animals, graze together with cows, often at wet pastures. They are mainly bred for sheepskin coats for local people or for sale in a town. (...) Pig breeding is situated particularly close to towns and is a good source of income for

small holders, where the pigs fed household refuse for a relatively short time can be well cashed".

This characterization shows explicitly that in Polesie over the interwar period there dominated an extensive system of herbivores raising (cattle and sheep) using mainly natural feed resources, in that wet pastures and forest meadows in summer, whereas in winter – hay, poor in mineral components coming form wet, acid peaty meadows. The cattle heads were predominated with cows (65% of total), calves aged up to 1 year (nearly 15%) and heifers – 2 and 3 years old (12%). There were many oxen – over 4 (in that 1.6th aged 3 years and over), that according to the author „are often used as beasts of draught, especially at the south-eastern part of the district, most similar to the wet Polesie, where horses are rare and oxen are used as draft animals. On the other hand, oxen fatten readily so farmers perceive them as a good income source".



Phot. 1. Whitebacks cow – Polesie, 1935 year (archives)
Fot. 1. Krowa białogrzbieta

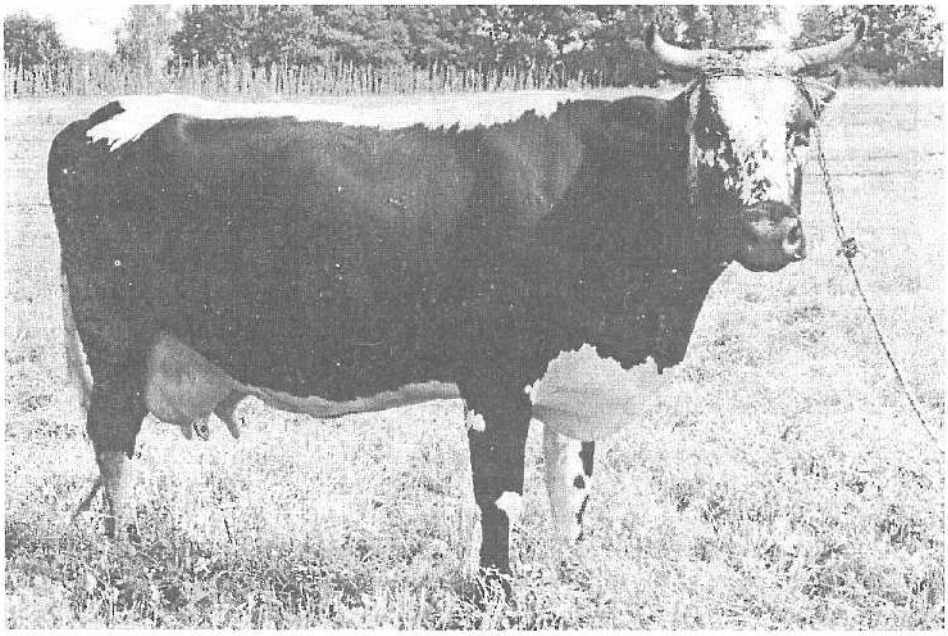
A. Sachs' analysis of breed structure (performed on the basis of animals' hair color and exterior structure) of the cattle kept in the Brest district area exhibited that „various types of crosses (55%) resulting from merged breeds, mainly pied individuals of awkward structure" prevailed in the stock heads. In the population of animals some were recognized as „typically purebred". The first place was taken by whitebacks – 18.67%, in that blacksides – 11.69% and redsides – 6.98% (Phot. 1).

At some communes in the southern part of the district, this breed percentage was substantially higher, e.g. Ołtusz (34% of heads), Moloryta (30.4% of heads), Domaczewo (28.6%), Miedlno (28.4%), Wielkoryte (27.9%). The second numerical force cattle breed maintained in the Brest district during the interwar period was lowland black-white (14.9%). A considerably lower number of the Polish red cattle was recorded (7.9%) and

a few animals of szwyc pedigree. The conference organized in Brest, February 1931 concerning the establishment of the breeding regions settled that the following districts: whole Kobryński, Brest (with two communes exclusion) and the communes Braszenice and Woławal from the Drohiczyński district were assigned for the whitebacks breeding. These resolutions had been valid till the Second World War, while in the postwar Poland and Woławal from the Drohiczyński district, were assigned for the whitebacks breeding. These resolutions had been valid till the Second World War, while in postwar Poland the whitebacks did not find any approval as our native cattle breed as late as 2003.

WHITEBACKS FATE AFTER TIIE SECOND WORLD WAR

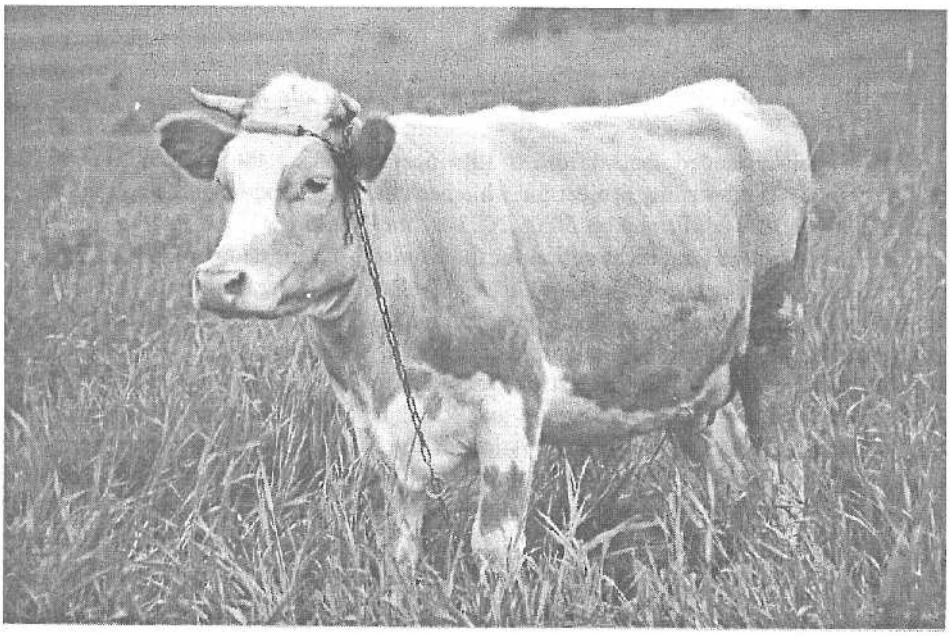
Pająk [1968] from was one of last who was interested in the whitebacks cattle during the 1960's. In his handbook published in 1968 he states: „some number of this cattle still occurs in the Bialystok region and Radom and Ostrow districts of the Kielce region, then in the northern part of Lublin region and north-eastern Warszawa region". Sasimowski [1983] claims that „white backs in Poland were not appreciated or regionalized, yet in the central and north-eastern part of the country they are still found in the mass cattle heads".



Phot. 2. Whitebacks black cow, owner Department of Breeding Cattle, Agriculture University of Lublin (Polesie 2003; phot. Przemysław Jankowski)
Fot. 2. Czarno-biała białogrzbicta, własność Katedry Hodowli Bydła AR w Lublinie

Quite recently people presumed the whitebacks bred in the fork of the Vistula and Bug rivers to have been died out in the 1970's. During the studies on beef cattle performed by the Department of Cattle Breeding, AU in Lublin we detected a whiteback type of cows described in handbooks in the Polesie area in 1999. From this time on in the

region on the Bug river, Polesie and on the Biebrza river there have been fixed and recorded over 100 individuals of cattle of this pedigree. On the evaluation of the listed animals' color it was stated that the majority (87.1%) was of black-white color (Phot. 2) and only a few individuals (12.9%) red-white (Phot. 3).



Phot. 3. Whitebacks red cow, owner Department of Breeding Cattle, Agriculture University of Lublin (Polesie 2003; phot. Przemysław Jankowski)
Fot. 3. Czerwono-biała białogrzbieta, własność Katedry Hodowli Bydła AR w Lublinie

The present color structure of „the remainder" whitebacks stock departs significantly from the one presented by A. Sachs for the interwar period at the Brest district. At that time the red sides made over 1/3 of whole whitebacks heads. Currently, however, the animals of this color are encountered occasionally. The red side color is connected (from the genetic point of view) with a recessive gene conditioning this red color and so at various types of random matings it was difficult to retain it.

The cytogenetic examinations [Grzybowski *et al.* 2003] demonstrated that in the studied whitebacks stock there were identified totally 193 alleles of DNA microsatellites. The number of alleles in locus was differentiated and ranged from 2 to (locus ILS005) to 13 alleles (locus TGLA53 and HEL9). There appeared 7.4 alleles in locus at average. As to allele number of DNA microsatellites, the examined stock of the whiteback cattle was characterized by great differentiation. This fact indicates that the remaining animals are distinguishable by high genetic variation and can constitute the initial base for the national project undertaken to restitute this breed as it is conspicuous by some distinct character. In the case of four analysed loci there were identified 8 microsatellite alleles whose size (in basic pairs) were not found within the intervals for literature data. The

following alleles: 109 bp and 115 bp in locus ETH3,139 bp in locus ETH225, 114 bp and 148bp in locus INRA037 and 168 bp, 170 bp and 178 bp in locus TGLA122, are the new alleles referring to the data enclosed in the world data base and concerning other cattle breeds. It may be assumed on these grounds that these alleles are „characteristic" of the whitebacks cattle breed.

REALIZATION OF BREED RESTITUTION PROJECT

These well-grounded facts afforded Litwińczuk [2003a] the possibilities for the elaboration of „The breeding project for whiteback cattle genetic resource conservation" in 2002, which was confirmed on 30.06.2003 by the Working Group for the Conservation of Cattle Genetic Resources acting for the Ministry of Agriculture. Getting ahead of the Project execution the Department of Cattle Breeding, Agricultural University of Lublin commenced purchasing the most valuable individuals for the parent stock located in Polesie, in the Experimental Station AU in Uhrusk, Włodawa district.

The following year was a historic moment for this pedigree restitution as on 20.01.2003 the Ministry of Agriculture and Rural Development passed a decision No 16/2003 about the opening and registration of the whitebacks cattle managed by the Department of Cattle Breeding, Agricultural University of Lublin. In summer 2003 the next group of whitebacks was purchased for the parent stock, this time in the Biebrza region, where about 50 animals of this breed were recorded and described. On 31.07.2003 the Minister of Agriculture and Rural Development published a decision No. 210/2003 on „The opening and registration of cows whiteback breed", this register is kept by the Department of Cattle Breeding, Agricultural University of Lublin. From 11.09.2003 in compliance with the Minister's decision this breed has been included into The Breeding Project of Genetic Resources Conservation, which means it is entitled to be subsidized, among others, from the EU funds for agricultural-environmental projects.

In autumn 2003 the cattle of this breed was presented for the first time at the breeding shows (regional and national), where it attracted great interest of both breeders and the mass media. In January 2004 the whitebacks were enrolled into the world list of cattle breeds managed by the FAO. The year 2004 marked the beginning of the actual introduction of the whitebacks restitution project delivering 16 whiteback cows to chosen breeders from the Polesie and Podlasie regions. The project consists in the gratuitous turning a cow over a farmer, who is in turn obliged to give a pregnant heifer to another breeder. This is a way to propagate this breed in the region. The Project accepted and being realized at present provides for the development of 2 breeding regions of this cattle, i.e. at Polesie and in the Biebrza area with ultimate population of minimum 500 cows. At the agricultural structure of small-sized farms situated in the regions with the natural environmental conditions unfavourable for the intensive agricultural production, e.g. the protective zones (The Poleski, Biebrzański and Narwiński National Parks) the whitebacks may be competitive for high-production breeds. Under such conditions the intensive breeds are not likely to show their high utility qualities and as a consequence, do not yield more profitability.

CONCLUSION

The whitebacks maintained at all times in the east Poland region characterized by specific qualities, mainly their adaptation to hard environmental conditions, used to be the most common cattle pedigree in Polesie. These features appreciated highly by farmers let conserve only a few animals of this breed in small farms situated on the Bug river area up till now. The project of this breed restitution and its genetic resources conservation undertaken in the 1990's by the Department of Cattle Breeding, Agricultural University of Lublin accomplished the acknowledgement of the whitebacks by the Ministry of Agriculture the Polish native cattle breed. Then the breeding registers were opened that provided the grounds for this breed enrollment into the world list of breeds with this genetic resources conserved by the FAO in 2004.Therefore, no objections exist to the whitebacks reintroduction into the breeding at their centuries-long grounds, that is Polesie.

REFERENCES

Andrzejewski A., Weigle A., 1994: Polish study of biological diversity. National Foundation of Environmental Protection, UN Programme of Environmental Protection (UNEP), Warszawa, pp.186 (in Polish).

Dobrowolski R., Harasimiuk M., 2002: Geological conditions of relief development in Polesie. Acta Agrophysica, 66, 7-19 (in Polish).

Goszczyński J., Wężyk S., Janiszewska L. 1994: Contemplates on protection methods of live-stock rare population. Przegl. Hod. 10, 2-5 (in Polish).

Gunther H., 1853: Remarks on the cattle breeding. Tarnów, pp. 10 (in Polish).

Grzybowski G., Litwińczuk Z., Gralak B., Prusak B., 2003: Polymorphism DNA microsatellite section in population of Polish Whitebacks cattle. Zesz. Nauk. Przegl. Hod., 68 (1), 25-34 (in Polish).

Klecki F., 1903: Study on horned cattle in Poland. Sprawozdanie Komisji Fizjograficznej Akademii Umiejętności. Kraków, pp. 10-12 (in Polish).

Kośmicki E.1998: Threat of genetic erosion in breeding. Przegl. Hod. 5, 30-31 (in Polish).

Litwińczuk Z., 2003: Breeding programme of protection of Polish Whitebacks cattle resources. Ministerstwo Rolnictwa, pp. 1-23 (in Polish).

Litwińczuk Z., Chabuz W., Stanek P., Jankowski P., Ochap E., 2003: Whitebacks – the old native cattle race. Przegl. Hod. 10, 13-16 (in Polish).

Litwińczuk Z., 2003: Protection of animal genetic resources. Biul. Inf. PAN 8, 39-47 (in Polish).

Malicki I., Litwińczuk Z., 2002: Economical significance of Polesie Lubelskie. Acta Agrophysica, 66, 219-227 (in Polish).

Moczarski Z., 1907: Cattle breeds. Warszawa, pp. 24 (in Polish).

Nitkowski A.,1904: Remarks on Whitebacks cattle breeding. Rolnik i Hodowca 2, 10-12 (in Polish).

Nowacka T.,1993: Protection necessity of old breeds. Przegl. Hod. 2, 7-8 (in Polish).

Nowicki B.,1997: Meanderings of cattle breeding in Poland. Przegl. Hod. 1, 2-3 (in Polish).

Okruszko H., Zawadzki S., 2000: Polesie Lubelskie. Acta Agrophysica 26, 237-244 (in Polish).

Pająk J., 1968: Draft of cattle breeding. Wyd. IV, PWRiL, Warszawa, pp. 226-230 (in Polish).

Prawocheński R., Kączkowski B., 1926: Studies on Whitebacks cattle in Poland. Kraków, pp. 1-30 (in Polish).

FAO Programme of genetic resources protection of live-stock. Instytut Ochrony Środowiska, Centralna Stacja Hodowli Zwierząt, Program Ochrony Środowiska Narodów Zjednoczonych, Warszawa 1996, pp. 104.

Pruski W., 1967: Live-stock breeding in Poland Kingdom in 1815-1918. Volume I, pp. 111-137; Volume II, pp. 41-83; Volume III, pp. 47-128. PWRiL, Warszawa (in Polish).

Sachs A., 1935: Monograph cause to studies on Whitebacks cattle population in Brześć on the Bug District. Praca dyplomowa. SGGW Warszawa, pp. 76 (in Polish).

Sasimowski E., 1983: Draft of detailed animal breeding. PWN, Warszawa, pp. 149-150 (in Polish).

Report of Lublin Agricultural Chamber in 1935/36, pp. 103 (in Polish).

Wężyk S., Cywa-Benko K.,1992: Native breeds don't be lost! Przeg. Hod. 5, 5-6 (in Polish).

BIAŁOGRZBIETY – RODZIME BYDŁO POLESIA

Streszczenie. Biorąc pod uwagę specyfikę warunków panujących w rejonie Polesia, głównym celem hodowli zwierząt domowych powinna być wysokiej jakości żywność (mleko, mięso, jajka), której podstawą są naturalne zasoby paszowe (tzw. bezpieczna żywność). Innym ważnym zadaniem dla tego regionu jest restytucja i zachowanie zasobów genetycznych naturalnych dla poleskich ras i odmian zwierząt gospodarskich. Białogrzbiety, hodowane we wschodniej części Polski od niepamiętnych czasów, wykazują pewne specyficzne cechy, głównie adaptacji do najpopularniejszej rasy na Polesiu. Cechy te, wysoce cenione przez rolników, pozwoliły na utrzymanie pojedynczych przedstawicieli tej rasy w małych gospodarstwach nad Bugiem aż do chwili obecnej.

Podjęty w latach dziewięćdziesiątych ubiegłego stulecia przez Katedrę Hodowli Bydła Akademii Rolniczej w Lublinie program restytucji i ochrony zasobów genetycznych tego bydła doprowadził do uznania przez Ministra Rolnictwa w 2003 roku białogrzbietów jako polskiej rodzimej rasy bydła i otwarcia ksiąg zarodowych, co było podstawą wpisania ich w 2004 roku przez FAO na światową listę ras podlegających ochronie zasobów genetycznych. Nic więc nie stoi na przeszkodzie, aby białogrzbiety powróciły po kilkudziesięciu latach do hodowli na ich odwiecznych terenach, tzn. na Polesiu.

Słowa kluczowe: Polesie Lubelskie, restytucja zasobów genetycznych zwierząt, białogrzbiety