



## CONSERVATION OF POLISH RED CATTLE

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### ABSTRACT

Polish Red cattle are the most conserved breed of cattle in Poland. The current population of Polish Red cows is estimated to be approximately 30000, of which only 1321 animals accounted for the active population in the year 2005. Of these, approximately 500 cows (spread over 60 farms) are included in the genetic resources conservation programme. This survey was conducted among 100 breeders of Polish Red cattle, 94 of them were from the Małopolska region. Average area of surveyed farms was 44.2 ha, but this value was overstated by 3 farms with areas of 700, 260 and 160 ha respectively. However, the overwhelming majority of farms (84%) were small ones with area of less than 20 ha. Also, majority of all farms (79%) had less than 20 Polish Red cows. Among the farms availing the "Conservation of Local Farm Animal Breeds" package, the overwhelming majority (92%) had up to 10 cows only. And cattle were the only animal species reared in majority of farms (63) most of which (92%) also had other cattle breeds (mainly Polish Holstein-Friesian of Black-and-White and Red-and-White variety). The farms surveyed represent the future of Polish Red cattle breeding in Poland which are largely dependent on government subsidies. In case subsidies were lifted or even limited, as many as 80% of the farmers were of the opinion to abandon Polish Red cows in favour of breeds that are more efficient and economically profitable.

**Key words:** Polish Red cattle, breeding, conservation

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### INTRODUCTION

The diversity of animal breeds used in agriculture is diminishing at an alarming rate. Until recently, there were over 6000 breeds of farm animals worldwide, with their adaptations to different environmental conditions. In the early 20th century, there were approximately 230 breeds of cattle in Western Europe, of which 70 have already gone extinct and further 53 are threatened. In fact, approximately 30 populations are included in the Conservation Breeding Programme. The market situation concerning animal use is not conducive for the maintenance of biodiversity. There has long been a tendency of increased use of high-producing animals that are genetically adapted to intensive production (Reklewski, 2005). There is often a debate that is going on for quite sometime now as to who is right - environmentalists or those striving for a steady increase in

food production, whatever the consequences? The latter often forget to account for the social and environmental costs related to economic activity, leaving them to the next generations to deal with. Native breeds are being replaced by modern varieties that produce more milk and eggs and achieve higher weight gains. There are only a few highly specialized, single-purpose breeds compared with the wealth and variety of local breeds. The only worldwide breed that can compete with high-producing single-purpose cattle is Simmental cattle. However, although in Europe this breed is regarded as dual-purpose, selection in many countries of the world has made Simmental cattle specialized in either milk or beef production (Flückinger, 1998; Reklewski and Sakowski, 2002). High-producing single-purpose animals that achieve record-breaking and unnaturally high results represent the ubiquitous trend towards big things and the need for quick profits at low costs. Because native breeds

are not suitable for intensive breeding under large-scale commercial conditions, they became unprofitable to keep when farmers started to move beyond subsistence farming. Since increased productivity of animals is often accompanied by increasing incidence of disease, it is important to protect the old native breeds of animals against extinction. The old native breeds have preserved many valuable traits such as strong build, longevity, high fertility, easy parturition, disease resistance, good product quality, low nutritional requirements, and good adaptation to local conditions (Szarek et al., 2004).

## MATERIALS AND METHODS

In 2006, a survey was conducted among some Polish Red cattle breeders who received funding as part of "Conservation of Local Farm Animal Breeds" programme (one of the packages of the Agri-Environmental Programme under Rural Development Plan) or were potential beneficiaries. The aim of this survey was to evaluate the current situation of Polish Red cattle breeding in Poland and to find out whether the Conservation of local farm animal breeds can help to conserve or even develop Polish Red cattle breeding in Poland. The results of the survey also aimed to provide guidelines for Polish Red cattle farmers who did not take part in the conservation programme for local farm animal breeds and are eligible to join the programme.

The survey was conducted among 100 breeders of Polish Red cattle, 94 of which were from the Małopolska region (Fig. 1). Farms that had at least 4 Polish Red cows were included in the survey.

## RESULTS

Polish Red cattle are the most numerous conservation breed of cattle in Poland. It is believed that origin of this breed dates back more than 17,000 years and the breed's picture comes from the region of Lascaux, France. The breed is derived from shorthorn taurine cattle, *Bos taurus brachyceros* (Czaja and Trela, 1994). Polish Red cattle enjoyed their heyday in the interwar period, when breeding work in Poland was managed by 11 Associations of Polish Red cattle breeders. They encompassed 400 herds in large farms and 15,000-20,000 cattle entered in herdbooks in small farms. Polish Red cattle were found all over Poland except Pomerania and Wielkopolska regions. They were most common in Białystok, Polesie, Świętokrzyskie and "native" Western Małopolska regions (Konopiński and Bormann, 1931). The population had four varieties; Podgórska, Dolinowa, Śląska and Rawicka. However, after the Second World War these varieties disappeared together with a dramatic decline in the Polish Red cattle population and the use of replacement crossing (Szarek et al., 2004; Ziemiński, 2005). Polish Red cattle are characterized by high protein and solids content of milk, favourable amino acid composition of milk protein, high resistance to harsh environmental conditions, good health and resistance to diseases, very good fertility and viability of calves, longevity and ability to reduce productivity to survive temporary feed deficiency, and rapid regeneration of lost body condition. The standard Polish Red cow of average productivity yields approximately 4000 kg of milk containing 4-4.5% fats and 3.6% proteins, are of normal

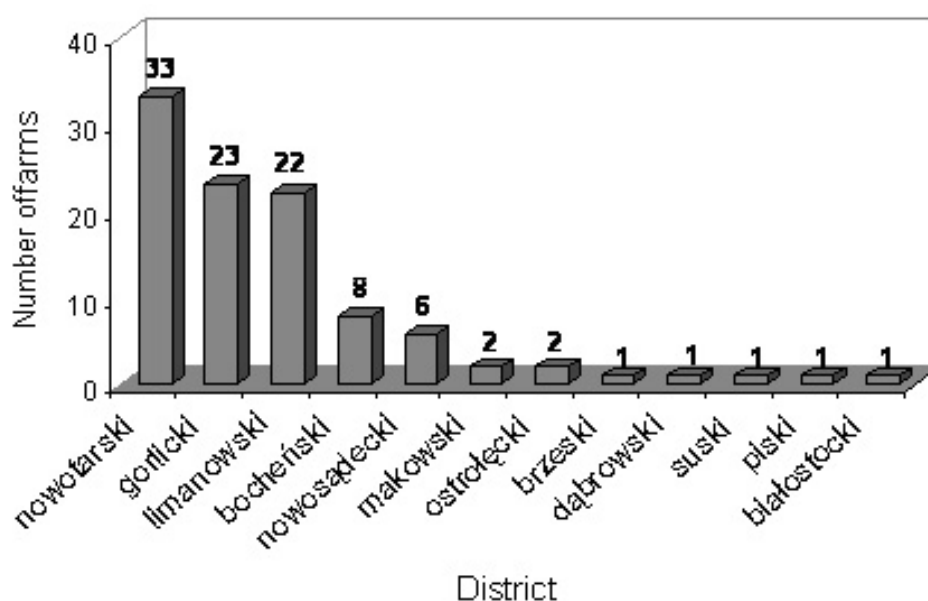


Fig. 1: Number of farms surveyed

build and dual-purpose conformation, with a tendency towards milk production. Their colour is uniform from red to dark red; claws and nostrils dark; horns bright with dark endings. The body weight of an adult cow should be 500 kg, with withers height of 128 cm (Trela et al., 2005).

Towards the late 1960s, the Polish Red cattle population was approximately 2 million, i.e. approximately 18% of the national cattle population. The move towards agricultural intensification, which began in the 1970s, removed red cattle from most of their original area. In 1973, the Ministry of Agriculture issued a directive that drastically limited the region of Polish Red cattle breeding to three sub-mountain districts of the present Małopolskie province. It is estimated that ten years after this directive was issued, the population of a million Polish Red cows shrank to just 40,000, 45,000 and 100,000 cows in the Białystok, Rzeszów and Kraków regions, respectively. Some Polish Red cattle also survived in the Lublin and Katowice regions. To prevent a further decrease in the Polish Red cattle population, the Ministry of Agriculture declared part of the Nowy Targ, Nowy Sącz and Limanów districts as the conservation area for this breed. In 1983, three conservation herds of Polish Red cattle were created in Hańczowa near Gorlice, Popielno and Elk. Only the herd in Popielno has survived until today. Together with 500 cows selected from peasant farms in the Carpathian foothills, large commercial farms in Jodłownik and Szczyrzyc, and several herds in other regions of Poland, they form a genetic reserve (Szarek and Adamczyk, 2005; Żukowski and Trela, 2005).

The current population of Polish Red cows is estimated to be approximately 30,000, of which only 1321 animals accounted for the active population in the year 2005. Of these, approximately 500 cows (spread over 60 farms) are included in the genetic resources conservation programme. At present, the breeding of Polish Red cattle is covered by two programmes: the Breed Genetic Improvement Programme and the Genetic Resources Conservation Programme. The objective of the first programme is the genetic improvement of dairy traits, type and conformation so as to improve the Polish Red cattle population in terms of milk productivity. The following traits that increase production profitability are being improved: milk yield, protein yield, fat yield, type and conformation traits, with special focus on udder and leg conformation, as well as functional traits (fertility, resistance to mastitis, longevity). The improvement is carried out using Angler cattle and the genetic resources of other European red breeds.

The aim of the genetic resources conservation programme is to restore and maintain the old type population of Polish Red cattle and to preserve the existing genetic variation. Breeding work is aimed at maintaining typical traits of the breed such as very

good adaptation to harsh environmental conditions, high resistance to disease and good health, very good fertility, easy calving, high vitality and easy rearing of calves, and high biological value of milk. The genetic resources conservation programme was initiated on the basis of the Popielno herd and selected herds from the Małopolskie province (Szczyrzyc and Jodłownik). Cows were selected for the programme based on purpose, type and the smallest possible proportion of Danish Red and Angler breeds in the genotype. In 2001, the rest of the Hańczowa conservation herd was included in the programme. The new owner of the herd is the Hucul Horse Stud in Gładyszów. In 1999, the farm animal genetic resources conservation programme and breeding programme were designed and approved by the Ministry of Agriculture and Rural Development. During 1999 to 2004, the programme was funded as part of subsidies for entities providing services for agriculture, based on an annual directive of the Ministry of Agriculture. The directive limits the maximum number of cows to be included in the genetic resources conservation programme and also states the rate of subsidy. During 2005-2006, the programme was supported by the European Agricultural Guidance and Guarantee Fund (EAGGF). The Agri-Environmental Programme includes the "Conservation of Local Farm Animal Breeds". The Agri-Environmental Programme is a form of financial support provided to farmers by the European Union. This programme differs from the other assistance programmes in that it stresses on nature and rural landscape conservation. The exceptional natural and landscape value of Polish rural areas that has been preserved thanks to the use of traditional farming methods are being increasingly recognized in Europe and can become, in addition to the high quality of food produced in Poland, the pride of the Polish countryside.

Data regarding farm area are shown in Fig. 2. Although the area of the surveyed averaged 44.2 ha, this value was overstated by 3 farms with areas of 700, 260 and 160 ha, respectively. However, the overwhelming majority of farms (84%) were less than 20 ha in area. Of the farms surveyed, the majority (79%) had less than 20 Polish Red cows (Fig. 3). Among the farms using the "Conservation of Local Farm Animal Breeds" package, most (92%) had up to 10 cows (Fig. 4).

Cattle were the only species of animals in majority of farms (63) most of which (92%) also had other cattle breeds (mainly Polish Holstein-Friesian of Black-and-White and Red-and-White variety). Other common animal species reared on these farms were poultry (21 farms), horses (16 farms), pigs (15 farms) and sheep (4 farms). It was also noted that 82 farms had tie-in stalls and the rest used the loose housing system. These were mostly family farms that did not increase the stock of their cows, but thanks to funding from the "Conservation of Local Farm Animal Breeds" package, some of them

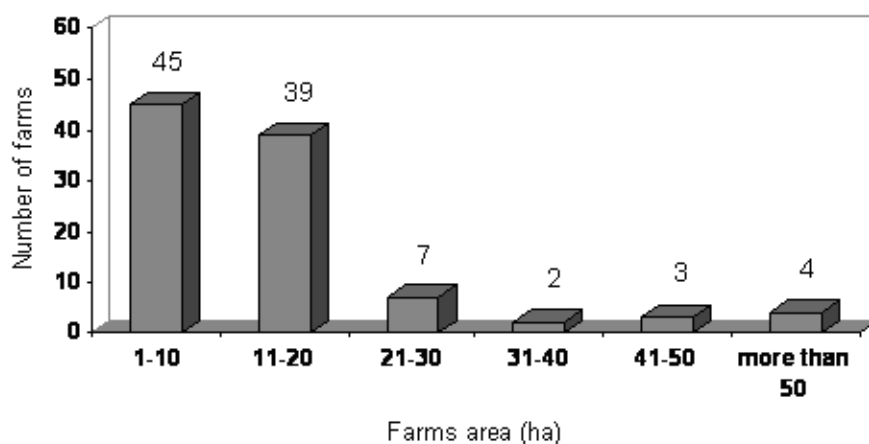


Fig. 2: Area of the surveyed farms

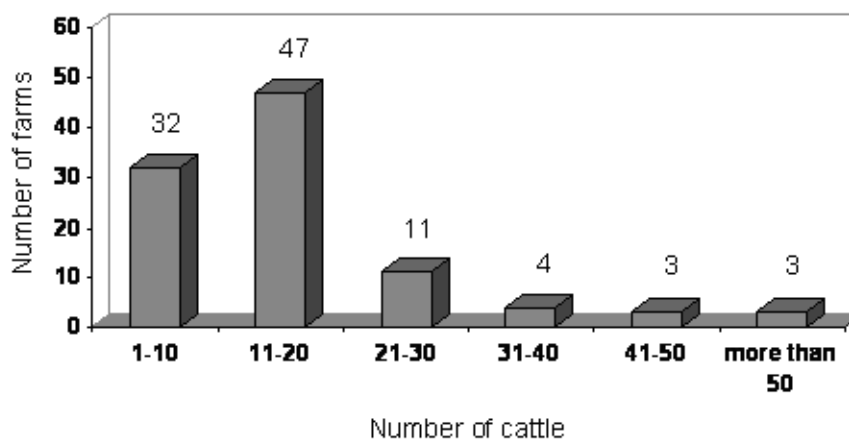


Fig. 3: Numbers of cattle in the surveyed farms

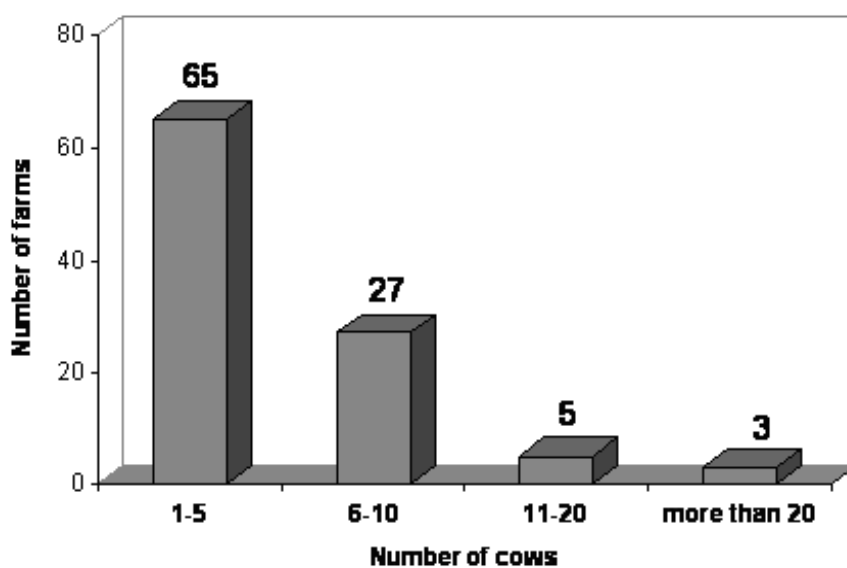


Fig. 4: Polish Red cows included in the "Conservation of Local Farm Animal Breeds" package

became interested in Polish Red cattle breeding. It was also found that in addition to funds provided by the package, 1/3<sup>rd</sup> of the farms made use of other subsidies provided by other Agri-Environmental Packages (such as "Organic Farming" package, code S02 – 32 farms; "Maintenance of extensive meadows" package, code P01 – 2 farms).

The farms surveyed represent the future of Polish Red cattle breeding in Poland which are largely dependent on government subsidies. In case subsidies were lifted or even limited, as many as 80% of the farmers were of the opinion to abandon Polish Red cows in favour of breeds that are more efficient and economically profitable.

## CONCLUSIONS

The launch of the package "Conservation of Local Farm Animal Breeds" as part of Action 4 of the Rural Development Plan (Support for Agri-Environment and Animal Welfare) was justified as it helped to put a halt to the reduction in the number of Polish Red cattle farms and promote the only native Polish breed of cattle. Farms using this package (especially smaller farms) rely largely on subsidies for existence. There are already many farms that rear other, more efficient breeds in addition to Polish Red cows. Therefore, it is heartening that the draft of the European Agricultural Fund for Rural Development for 2007-2013 plans to continue with the existing subsidies for environmental protection and conservation of local animal breeds and even extend them for other breeds and species of animals.

Every year, many species and breeds of animals become extinct thereby decreasing the biodiversity and genetic variation of populations. Thus breeds and species that have a tradition of breeding for many a centuries, a unique genotype and aesthetic and cultural value are being lost. Every effort needs to be made in order to counteract this shocking trend and save those animals whose only fault is that they do not meet the economic demands of our complex reality.

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