THE ASSESSMENT OF ANIMAL MAINTENANCE IN ECOLOGICAL FARMHOLDS IN POLAND IN THE VIEW OF DOMESTIC REQUIREMENTS[1]

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SUMMARY

The aim of the work is the assessment of animal maintenance conditions, feeding and prophylaxis in certified ecological farmholds on the basis of questionnaire testing. Basing on the results obtained it can be stated that considerable part of the farmholds meet most of criteria. Livestock population amounted average 1,36 large heads per the parity hectare, but per 1m^2 of the area accessible for animals was mostly much smaller. Most of those buildings possess windows and gravity ventilation. Each animal was kept on bedding, yet not all of them had an access to water and most animals were tied. Every farmhold fed animals basing on this own fodder. Veterinary assistance depended on the basic treatments.

Keywords: ecological farmholds, assessment of animal maintenance, domestic requirements

INTRODUCTION

In the recent years there has been observed higher social awareness regarding the needs of health protection through the consumption of high quality and healthy food. This can be proved by ecological agriculture as sustainable system of food production. The latter one has been undergoing dynamic development in Poland, which can be proved by considerably increased number ecological farmholds, as well as the areas of arable land for example, until 2005 there was recorded 6 times higher number of the mentioned farmholds in comparison to 2000. In 2000 there were 388 of them, while in 2005 the number of ecological farmholds ranged 2050 [1].

The conversion of traditional farmholds into ecological ones means, however, meeting certain requirements. This refers both to plant and animal production [2]. Ecological farmholds breeding animals have to meet appropriate criteria to ensure animal welfare, as well as the protection of natural environment. According to legal acts being in force in our country, significant criteria are, first of all, animal origin, maintenance conditions, including animal housing, feeding and veterinary assistance [3,4,6].

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MATERIAL AND METHODS

The material for investigation was the results obtained on the basis of directed interviews which involved the farmers running certified ecological farmholds. The total number of questionnaires sent was 120. On average, 2 questionnaires were sent back from each voivodship, which resulted in statistical questionnaire return ranging 27,5%. Eventually, complex questionnaire investigation involved 33 certified ecological farmholds and referred to such data as agriculturally developed land, including the arable one, livestock population, animal maintenance conditions, prophylaxis and the ways of veterinary treatment.

RESULTS

The investigations proved that livestock population in those farmholds amounts average 1.36 SD per parity hectare. Taking into account all the farmholds, 46.2% of them kept the number of animals ranging from 0.5–1.5 SD per parity hectare, while 34% of the respondents possessed smaller number of animals, i.e. 0.006–0.46 SD per parity hectare and 19.2% more, i.e. 1.67–2.95 SD per parity hectare.

Nearly each farmhold dealt with breeding and rearing of dairy cows and laying hens. In 12 farmholds there were fatteners, and, occasionally, other species of animals. The number of cows ranged from 1 to 4 heads, in 5 farmholds there were kept 5–16 heads and in 1 farmhold there were found 40 animals. In the case of fatteners the number of animals did not exceed 14 heads and only in 1 farmhold there were 80 fatteners. The highest number of farmholds possessed from 10 to 50 laying hens and only in 3 farmholds there were 100, 300 and 340 hens. In the case of the latter farmhold this is a local breed – green-legged partridge. Broilers were recorded in 2 farmholds, about 30 heads in each, and in 6 farmholds there were rabbits numbering from 3 to 60 heads. Average number of animals, calculated over 1 farmhold, proved that the highest number belongs to sheep – 72 heads, about 53 heads – for laying hens, while the lower number features horses – about 7, and cows – about 5 heads (Fig. 1).

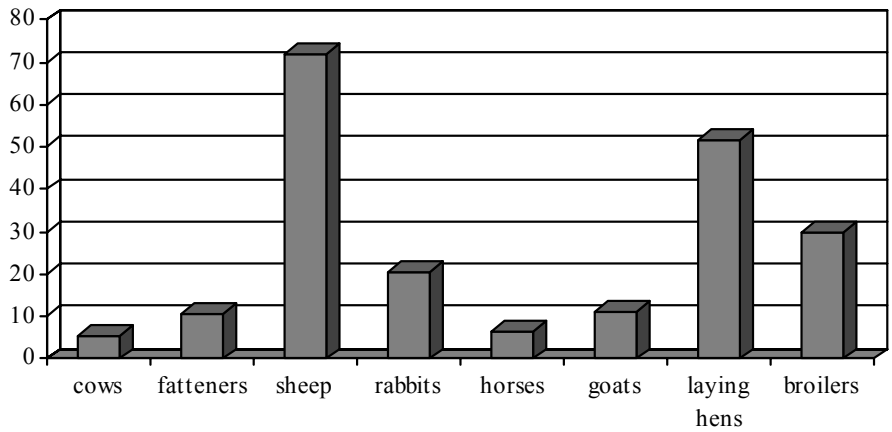

Figure 1. Average number of animal in ecological farmholds

Ecological farmholds also possess other animals, though in much smaller number. Apart from the animals mentioned above, there were recorded calves, heifers, bulls, geese and bees, with cattle providing for the largest part (Tab. 1).

Table 1. The number of farmholds possessing other animals (physical heads)

Animals	Number of households	Range	Average
Cattle:			
Calves	8	1–7	4,1
Heifers	7	1–6	2,7
Bulls	6	1–5	2,0
Sows	1	1	1
Geese	3	3–6000	2024,7
Bees	1 apiary	60 (beehive)	60 (beehive)

Part of the respondents, i.e. 37.9% confirmed that they planned to increase livestock population, 6.9% farmers were going to decrease it, while 55.2% wanted to maintain the already existing of animals in their farmholds. The area of barn building amounts 70–2400 m^2 and the area of buildings for animals 40–2400 m^2. Stocking density in 14% ecological farmholds corresponds to appropriate number of animals per 1m^2 of building area, while in the remaining ones stocking density is too low (79%) or too high (7%).

The barn in the highest percent of ecological farmholds were built 20–36 years ago (57.1%). New buildings (3–14 years old) constitute 10.7%, those 40–65 years old – 17.9% and the ones built before Second World War (70–100 years old) provide for 14.3%. Those barns were built from bricks – 72,7%, wood – 6.1%, while the remaining ones (21.2%) from other materials such as: hollow bricks, suporex, stone, gas concrete, calcium-silicate bricks. In 1 farmhold, apart from a brick building, there was a wooden roof shelter for animals.

Nearly all buildings possess windows (96.8%). Gravity ventilation is in 75% buildings and the remaining ones featured mechanical ventilation (9.4%) and the mixed type (15.6%) – Fig. 2. In each barn animals were kept on bedding and regular access to water have 73.3% of animals, while in 55.6% of farmholds animals are tied, though some farmholds introduced both tied and loose animal keeping system. Animals can use an outside run in 86.7% of farmholds and 96.7% use pastures. Besides, in farmholds breeding dairy cows, hand milking takes place in 66.7% of them and the remaining ones apply mechanical milking system.

Examination results regarding animal feeding showed that nearly all farmholds use feeding stuff produced solely by them. That kind of food mainly consist of: corn mixtures, corn waste, leguminous plants, crushed meal, grass hay, grass silage, root crops (potatoes, fodder beet, carrot, parsley) and other, e.g. fodder pumpkin. In 4 farmholds they use 10–15% purchased feeding stuff like: concentrates, premixes, dehydrated forage, rape crushed meal, crops, linseed. Among feeding stuff supplements salt-lick is most commonly used – nearly 79% of farmholds, as well as fodder chalk (31.6%) and other: eco-minerals, eco-concentrate, eco-premix and vitamins. Herb extract and charcoal also belong to eagerly used supplements.

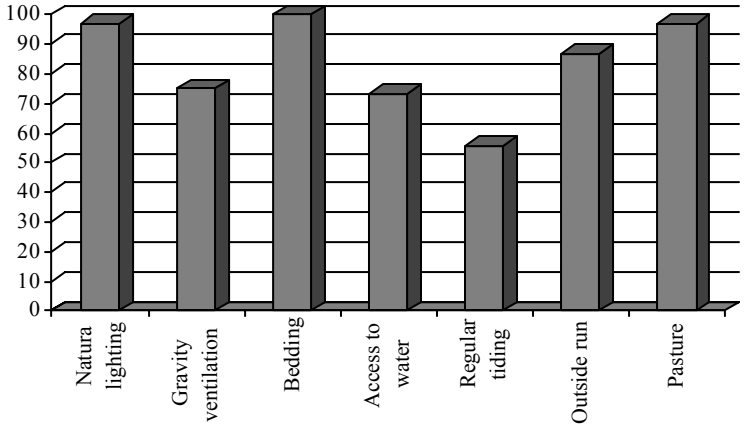

Figure 2. The conditions of animal maintenance in ecological farmholds (%)

On the basis of the investigation it is possible to state that veterinary assistance consisted in the treatments like hoof paring, sheep disinfestations and obligatory vaccination. Most respondents claimed there was no need to introduce any pharmacological means as animal state of health and productivity mainly depend on feeding and providing the possibility of animal being on the go on fresh air. Some farmers use balm in cows to cure udder inflammation. As far as antibiotics were considered, only one respondent stated that he used antibiotics if needed. Milk production by cows in ecological farmholds showed relatively different level, from 2500 to 9750 litres per year (Tab. 2). Hen laying ranged from 50% to 95%.

DISCUSSION

Animal production constitutes an integral part of any ecological farmhold. The number of animals has to be closely related to their accessible area. This correlation aims at avoiding overgraze and pasture erosion, as well as using manure to prevent negative consequences on the part of the environment, including soil contamination and water pollution, both surface and underground ones [3,4]. Stocking density should, therefore, amount 0.5–1.5 SD/partition hectare. Moreover, appropriate selection of animal species and breeds, animal origin, maintenance conditions including minimum area, proper treatment of animals, as well as feeding, prophylaxis and medical treatment are also of considerable importance [3,5,7].

Appropriate selective breeding is intended to ensure satisfactory level of animal production, maintaining, at the same time, diversity of plant production. Animals should, first of all, feature good state of health and be suitable for making use of farm-produced fodder. They also should originate from farmhold own breeding or come from other ecological farmholds. Animals obtained due to genetic engineering or fetus experiments are not accepted.

It is very important for ecological farmholds to provide appropriate feeding and maintenance of animals. Aiming at animal welfare, outside runs and pastures should be accessible and in indoor breeding. Tiding systems or trainers must be obviously excluded. To ensure suitable microclimate in barns lighting (preferable natural lighting) and gravity ventilation should be

introduced. Animals should have regular access to drinking water and fodder. Feeding should be based on ecologically produced fodders. Special requirements are set by prophylaxis and veterinary treatment as conventional methods can be applied only when animal life is endangered, to prevent suffering on in case drugs are not accessible [3,4,5,7].

Analysis of the results proved that most farmholds subjected to investigation meet basic requirements regarding stocking maintenance, feeding and prophylaxis. In more than 46% the number of animals fulfilled advisable norms (0.5–1.5 SD/partition hectare). Yet there are still farmholds of too low or, to lesser degree, too high stocking density, which can lead to disturbances of fodder-fertilizer balance in ecological farmholds. It should be noticed that in the examined farmholds there dominate milk and egg production, to a lesser degree pork production, while other animal production, e.g. goat milk, poultry and rabbit meat provide for the lowest percentage. Only a few farmholds run broiler and fowl production. As it results from our investigation, the area accessible for animals has not been completely used, which can also effect on inside microclimate. This situation results from, among the others, lack of subsidies for animal production.

Animal maintenance conditions are relatively different in particular farmholds, although most requirements are met in this respect. Yet not all the farmholds had adjusted to the respective criteria, namely about 27.7% of farmholds do not provide their animals with regular access to water, 55.6% of farmholds use animal tiding system, as well as not all animals can enjoy outer runs or pastures. The fact that nearly all farmholds use fodder originating from their own production, which, in turn, is according to the respondents a source of animal good state of health and high productivity of animals kept, seems to be quite satisfactory. The mentioned farmers, for the same reason, do not need to use drugs and veterinary assistance consist mainly in basic treatment, i.e. hoof paring, disinfestations and obligatory vaccination.

CONCLUSION

Concluding, it should be stated that increased number of ecological farmholds in Poland can be regarded as quite considerable one. Yet not all farmholds have been converted to meet domestic requirements. Moreover, numerous farmers do not consider it necessary to cooperate with academic or agricultural advisory centres, which would eagerly provide that kind of services. The mentioned cooperation would allow to easier and more rapidly adapt ecological farmholds to home requirements, which would additionally increase the interest in ecological products among the Polish and foreign consumers.

REFERENCES

1. Bartkowiak A., Dobrzański Z., Bartkowiak P., Króliczewska B., 2006: The dynamics of alterations in traditional agriculture aiming at ecological agriculture. Mon. „The chosen problems of effectiveness of restructuring" (ed. C. Glinkowski), Wyd. KREOS, Szczecin-Poznań, 2006, 111–119.
2. Kołacz R., Bodak E., 1999: Dobrostan zwierząt i kryteria jego oceny. Med. Wet. 58, 3, 147–154.
3. Rozporządzenie Rady (WE) nr 1804/1999 z dnia 19 lipca 1999 r. uzupełniająca rozporządzenie (EWG) nr 2092/91 w sprawie produkcji ekologicznej produktów rolnych oraz znakowania produktów rolnych i środków spożywczych w celu włączenia produkcji zwierzęcej.

4. Rozporządzenie Rady nr 2092/91/EWG z dnia 24 czerwca 1991 roku w sprawie produkcji ekologicznej produktów rolnych oraz znakowania produktów rolnych i środków spożywczych (Dz.U.L. 198, 22.7.1991, s. 1), Tekst skonsolidowany, Urząd Oficjalnych Publikacji Wspólnot Europejskich 1991R2092–15/05/2006.
5. Siebeneicher G.E., 1997: Podręcznik rolnictwa ekologicznego dla różnych kierunków i dziedzin. Wyd. PWN, Warszawa, s. 13–49 i 405–490.
6. Ustawa z dnia 20 kwietnia 2004 r. o rolnictwie ekologicznym (Dz. U. Z 2004, nr 93, poz. 898 ze zmianami).
7. www.ekoland.za.pl, z dnia 19.10.2006 r.