

6. Organisation of breeding work. The role of breeders' associations and state organisations. Methods of state influence on the efficiency of livestock production

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1. Introduction

Providing good quality food is one of the fundamental goals of modern societies.

The organization of livestock breeding, as in other sectors of the economy, is an important factor in its effectiveness and the achievement of the objectives of the action.

The development of new technologies such as artificial insemination or genomic evaluation of animals has changed the range of breeding from the local - national level to the international - global level.

The requirements of the Common Agricultural Policy implemented in the European Union stimulate the implementation of common rules in the field of farm animal husbandry in the Member States.

The production of food of animal origin is one of the pillars of ensuring food security. In 2021, the value of animal production and animal products in the EU-28 amounted to EUR 170 billion, which was 40% of global agricultural production. 58% of European farms have animals.

In Poland, in 2021, the share of animal production in the value of global agricultural production was 48.7%, and the share of animal production in the commodity structure of agricultural production in 2021 was 58.9%.

Organizations dealing with livestock breeding must conduct their activities taking into account social expectations on the one hand, market requirements on the other hand and the effectiveness of the actions taken on the third hand.

2. Legal regulations

In Poland, the principles of animal husbandry and breeding work are regulated by two basic legal acts.

These are:

- ACT of 10 December 2020 on the organization of farm animal breeding and reproduction (Journal of Laws of 2021, item 36),

and

- Regulation (EU) 2016/1012 of the European Parliament and of the Council of 8 June 2016 on zootechnical and genealogical conditions for the breeding, trade and entry into the Union of pure-bred breeding animals and hybrid breeding animals and their germinal products Union territory and amending Regulation (EU) No 652/2014, Council Directives 89/608/EEC and 90/425/EEC and repealing certain acts in the field of animal husbandry.

The Act of 10 December 2020 on the organization of farm animal breeding and reproduction implements the provisions of the European Union (EU) contained in Regulation (EU) No. 2016/1012 on animal husbandry.

It regulates the methods of breeding cattle, pigs, sheep, goats and horses, and other animal species listed in the Act, recognized as farm animals.

In particular, this Act regulates matters in the field of:

- breeding farm animals,
- preservation of genetic resources of livestock,
- evaluation of their value in use,
- genetic evaluation,
- keeping herd books,
- breeding registers and registers,
- control over the breeding and reproduction of these animals.

3. Selected terms related to the issues of animal husbandry organization

The Act recognizes a total of 27 species of animals as farm animals, for which the provisions of the Act on organization and breeding apply in Poland.

In the light of the provisions of the Act, the group of livestock includes:

- cattle, pigs, sheep, goats and equines,
- deer - animals of the following species: red deer (*Cervus elaphus*), sika deer (*Cervus nippon*) and fallow deer (*Dama dama*), / kept in farm conditions to obtain meat or skins, if they come from breeding or closed breeding referred to in the regulations hunting law, or breeding or farm breeding /,
- poultry - birds of the following species: hen (*Gallus gallus*), duck (*Anas platyrhynchos*), muscovy duck (*Cairina moschata*), goose (*Anser anser*), garbonose goose (*Anser cygnoides*), turkey (*Meleagris gallopavo*), Japanese quail (*Coturnix japonica*), guinea fowl (*Numida meleagris*) and ostrich (*Struthio camelus*) /when kept under farm conditions/,
- fur animals - animals of the following species: common fox (*Vulpes vulpes*), arctic fox (*Alopex lagopus*), American mink (*Neovison vison*), polecat (*Mustela putorius*), raccoon dog (*Nyctereutes procyonoides*), nutria (*Myocastor coypus*), chinchilla (*Chinchilla lanigera*) and rabbit (*Oryctolagus cuniculus*), /maintained for the production of raw material for the fur, meat and textile industry/,
- species: alpaca (*Vicugna pacos*), mulberry silkworm (*Bombyx mori*) and honey bee (*Apis mellifera*).

The Act introduced a definition of terms related to the organization of animal husbandry, including:

- animal husbandry - a set of procedures aimed at improving the hereditary assumptions (genotype) of farm animals, which include the evaluation of the utility value and genetic evaluation of farm animals, selection and selection of individuals for mating, carried out in conditions of proper husbandry.

•breeding program - it means a series of systematic activities, including registration, selection, breeding and exchange of breeding animals and their biological material used for reproduction, which activities are designed and implemented in order to maintain or improve the desired phenotypic or genetic characteristics in the target population .

•breeders' association - an organization with legal personality, associating, on a voluntary basis, breeders keeping animals of a given species, breed, breeding line or variety within a species or breed.

•breeding operation - means any breeders' association, breeding organisation, private company operating in a closed production system or public body, other than the competent authorities, recognized by the competent authority of a Member State in accordance with Article 4 sec. 3 for the purpose of carrying out a breeding program for hybrid pigs entered in the breeding registers maintained or established by that establishment.

4. The most important entities responsible for the organization of livestock breeding

Entities responsible for the organization of breeding in Poland

(according to the scale of powers and competences)

•Minister responsible for agriculture

Tasks:

- Recognition of breed organizations or other entities as breed societies and breeding operations.
- Approval of breeding programs.
- Issuing permission to keep breeding books and registers to breeders' associations or other entities.
- Imposing and withdrawing measures in case of violations.
- Suspension of an approved breeding program or withdrawal of recognition of a breed society or breeding operation.

•National Animal Breeding Center (KCHZ)

Tasks:

- Conducting official control in the field of:
 - how to keep herd books, herd registers for pigs and registers for other livestock,
 - performance evaluation and genetic evaluation,
 - the method of using funds from budget subsidies granted to entities carrying out tasks in the field of biological progress in animal production.
- Conducting utility value or genetic evaluation of bees and fur herds.
- Running a reference laboratory testing milk as part of the evaluation of the utility value of cattle, sheep and goats.

The National Animal Breeding Center may, after obtaining the consent of the minister responsible for agriculture,

- lend to a breed association, breeding enterprise or other entity keeping a herd book,
- breeding register or register,
- performance evaluation or genetic evaluation,

being on the board of the National Animal Breeding Center, necessary to perform tasks related to keeping a herd book, breeding register or register, as well as performance evaluation or genetic evaluation.

5. Breeder`s associations

Three main entities responsible for organization breeding in Poland

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•Breeders' association

Tasks:

- Implement breeding programs for individual breeds and species,
- A single association should implement at least one breeding programme.
- They conduct the evaluation of the utility value or genetic evaluation of animals.
- They keep breeding books and registers.

The breeders association is:

- breeders' association,
- breeding organization,

- a public entity,
recognized by the competent authority of a Member State, in the case of Poland, the Minister of Agriculture and Rural Development.

Breeders associations are:

- responsible for the implementation of breeding programs,
- their activities should cover purebred breeding animals entered in herd books,
- each association should be responsible for the implementation of at least one breeding programme.

In the case of pigs, the breeding program is the responsibility of the breeding company (recognized breeders' association, breeding organization, private company operating in a closed production system or public body).

In achieving the objectives of animal breeding, current legislation separates the issues relating to the recognition of breed associations and breeding enterprises and provides for separate procedures for them.

In addition, the rights and obligations are defined:

- breeders,
- breeders' associations,
- breeding enterprises.

Fundamental principles were established:

- equal treatment of breeders by breed associations,
- independence of associations in determining the goals of breeding programs.

The regulation also introduced provisions on official controls performed both by Member States and at EU level by the Commission. Their implementation is aimed at ensuring a harmonized approach to trade in breeding animals and their biological material, as well as certain breeding programs that are not only complex in structure, but also cross-border and international in nature.

The minister competent for agriculture is competent to recognize and refuse recognition as a breed society or a breeding enterprise on the terms set out in Chapter II, Section 1 of Regulation 2016/1012.

Recognition and refusal of recognition shall be made by way of a decision.

Necessary requirements for the recognition of the animal breeders' association by the minister responsible for agriculture

1. Statute and procedures ensuring equal treatment of breeders
2. Sufficiently large animal population to carry out the breeding program
3. Conducting animal origin compliance checks
4. Appropriate material base and equipment
5. Staff qualifications
6. Legal personality according to the law of a member state
7. Ability to maintain and manage databases

Recognized associations of livestock breeders in Poland

1. Polish Federation of Pedigree Pig Breeders' Associations
2. National Poultry Council
3. Polish Association of Poultry Breeders and Producers
4. Polish Association of Beef Cattle Breeders and Producers
5. Polish Federation of Cattle Breeders and Dairy Producers
6. Polish Association of Pig Breeders and Producers
7. Polish Sheep Association
8. Polish Association of Fur Breeders
9. Sheep and Goat Breeders Association
10. Polish Beekeeping Association
11. Polish Ostrich Breeders Association
12. Polish Horse Breeders Association
13. Polish Association of Deer Breeders

Only one herd book is kept on the territory of the Republic of Poland for the following farm animals:

- each of the species classified as cervids,
- each family or line of poultry within its particular species,
- each of the species classified as fur animals,
- species: alpaca and mulberry silkworm,
- each breeding line of bees.

6. Breeding programs

- breeding programme means a series of systematic activities, including the registration, selection, breeding and exchange of breeding animals and their germinal products, designed and carried out with the aim of maintaining or enhancing desirable phenotypic or genetic characteristics in the target population .

Breeding programs should include the principles of:

- recording,
- selection,
- breeding,
- exchange

of breeding animals and their biological material used for reproduction, which are designed and implemented to maintain or enhance desirable phenotypic or genetic characteristics in the target population.

Breeding programs should be:

- determined separately for each animal breed,
- involve a sufficient number of animals.

In addition, breeding programs should provide for:

- program objectives,
- methods of assessing value in use,
- detailed characteristics and standard of the breed,

- the geographical area where the program will be implemented,
- method of animal identification,
- information on zootechnical certificates.

Necessary requirements for recognition of the breeding program by the minister responsible for agriculture

1. Defined goals of the program:

- improvement,
- protection,
- restitution,
- breed formation.

2. Principles of construction of herd books and registers.

3. Information on the system of evaluation of utility and breeding value.

4. Information on breeding activities commissioned to other entities of the breeding program.

5. Information about the system of animal identification and registration of pedigrees.

6. Information about the geographical scope of the program.

7. Selection process and breeding goals.

8. Name and characteristics of the breed, line or cross.

Breeding programs implemented in Poland in 2023 within the domestic cattle species

The name of the breeders' association /The name of breed of animal for which the breeding program is carried out

•Polish Federation of Cattle Breeders and Dairy Producers /

1. Polish Holstein-Friesian
2. Polish Red
3. Simmental (meat and milk utility type)
4. Jersey
5. Montbeliarde
6. Polish Red and White
7. Polish Black and White
8. Brown Swiss
9. Swedish red

•Polish Association of Beef Cattle Breeders and Producers /

1. Angus
2. Blond d'Aquitaine
3. Charolaise
4. Hereford
5. Limousine
6. Piemontese
7. Salers

8. Simental (meat utility type)
9. Welsh Black
10. Galloway
11. Highland
12. Belgian White and Blue
13. Uckermärker
14. Wagyu

•University of Life Sciences in Lublin /

1. Whiteback

Breeding programs implemented in Poland in 2023 within the domestic pig species

The name of the breeders' association /The name of breed of animal for which the breeding program is carried out

•Polish Association of Pig Breeders and Producers /

1. Great White Polish
2. Polish White Landlock
3. Pulawska
4. Duroc
5. Pietrain
6. Hampshire
7. Great White Father
8. Pig hybrids Duroc and Hampshire
9. Pig hybrids Pietrain and Duroc
10. Pig hybrids Pietrain and Hampshire
11. Pig hybrids Great White Polish and Polish White Landlock
12. Pig hybrids Pulawska and Great White Polish
13. Pig hybrids Pulawska and Polish White Landlock

Breeding programs implemented in Poland in 2023 within Equidae

The name of the breeders' association /The name of breed of animal for which the breeding program is carried out

•Polish Horse Breeders Association /

1. Wielkopolski
2. Malopolski
3. Polish Sport Horse
4. Silesian
5. Polish Coldblood Horse
6. Polish Arden
7. Hutsul
8. Polish Konik
9. Pony
10. Pony and Small Horses

•Polish Horse Racing Club /

1. Arabian
2. Thoroughbreds

•Association of Breeders and Users of Trotters /

1. Trotter horse

•Polish Society of Shetland Ponies in Imno /

1. Shetland pony

Breeding programs implemented in Poland in 2023 within the sheep species

The name of the breeders' association /The name of breed of animal for which the breeding program is carried out

Polish Sheep Association /

1. Berrichon Du Cher
2. Ovines de Massifs
3. White-Headed Meat Sheep
4. BCP
5. Podhale Shekel
6. Charollaise
7. Corriedale
8. Blackhead
9. Fresian
10. Ile de France
11. Kamieniecka
12. Leine
13. Polish Merino
14. Polish Merino in Old Type
15. Olkuska
16. Varieties of Uhruska Polish Lowland Sheep
17. Varieties of Żelaźnia Polish Lowland Sheep
18. Polish Mountain Sheep
19. Polish Mountain Sheep of Colored Variety
20. Polish Lowland Sheep
21. Polish Sheep of the Foothills
22. Pomeranian
23. Romanowska
24. Suffolk
25. SCP
26. Swiniarka
27. Wielkopolska
28. Wrzosówka

Breeding programs implemented in Poland in 2023 within the domestic goat species

The name of the breeders' association /The name of breed of animal for which the breeding program is carried out

Polish Sheep Association /

1. Alpine
2. Anglo-Nubian
3. Boer
4. Saanen

Breeding programs implemented in Poland in 2023 within poultry

The name of the breeders' association /The name of breed of animal for which the breeding program is carried out

•National Research Institute of Animal Production /

Genetic Resource Conservation Program Species:

1. Domestic hen
2. Greenlegged partridge (Zielononóżka kuropatwiana) (Z-11 i Zk)
3. Yellow-legged partridge (Żółtonóżka kuropatwiana) (Ż-33)
4. Polbar (Pb)
5. Leghorn (G-99 i H-22)
6. Sussex (S-66)
7. Rhode Island Red (R-11, K-22)
8. Rhode Island White (A-33)

•National Research Institute of Animal Production /

He runs breeding programs and books for 25 families (inter-breed hybrids) of poultry bred in Poland

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•National Poultry Council /

He runs 30 programs and books for families of various poultry species (laying hens, ducks and geese), including a breeding book for geese of the W11 family (the so-called Polish oat goose). The most popular families of laying hens in Poland include: sets: Rosa 1 (S15♀ x R55♂), Rosa 2 (S15♀ x R55♂) x R55♂, Rosa 3 (S15♀ x R55♂) x N88♂, Rosa 4 (S15♀ x R55♂) x P55♂, Rosa 5 (P55♀ x N88♂). They come from four breeds of hens: Barred Rock (P55), New Hampshire (N-88), Rhode Island Red (R-55) and Sussex (S-15, S-11).

An example of a breeding programme

Program for the evaluation and breeding of Polish Holstein-Friesian bulls of the Masovian Center for Animal Breeding and Reproduction Sp. z o. o. in Łowicz (drawing)

7. Summary

1. In Poland, three entities play a fundamental role in the organization of animal husbandry:

- The minister responsible for agriculture,
- National Center for Animal Breeding,
- Animal Breeders Associations.

2. Under current legislation, Breeders' Associations play a key role in breeding. Their main tasks are:

- implementation of animal husbandry programs,
- keeping breeding books and registers,
- carrying out usability assessment,
- conducting genetic evaluation of animals.

3. The tasks of the National Center for Animal Breeding are:

- control of the manner of keeping herd books,
- usability assessment control,
- assessment of the utility value of fur animals,
- operation of a reference laboratory for milk evaluation.

4. At the "top" of entities involved in the organization of breeding is the Minister competent for agriculture. Its competences include:

- recognition of breeders' associations,
- approval of breeding programmes,
- issuing permits to keep breeding books and registers.

5. Currently, 27 species of farm animals are covered by the provisions on the organization of breeding in the country.

6. There are currently 147 breeding programs in the country for key species, including:

- cattle - 24,
- pigs - 13,
- equines - 15,
- sheep - 29,
- goats - 4,
- poultry - 62.

Thank you for your attention!