

7. The contemporary use of ornamental poultry - racial diversity and variability

The topic of today's lecture is The contemporary use of ornamental poultry - racial diversity and variability. The lecture is part of Module 4: Precision Livestock Farming, that is a part of the ISAGREED project. This presentation was supported by Erasmus+ KA2 Cooperation Partnerships Grant "Innovation of the content and structure of study programmes in the field of management of animal genetic and food resources using digitalization".

As part of the lecture, we will first present the classification of poultry breeds. Next, we will move on to the general characteristics of the so-called ornamental breeds, and then we will present the selected ornamental breeds in more detail.

One of the possible criteria for classifying poultry breeds is their production purpose. For laying breeds, the primary production is eggs. For meat breeds, it is meat production. We also have dual-purpose breeds that are used for egg production as well as meat. With the so-called ornamental breeds, the priority is not production - direct material benefit, but they are bred for their specific exterior features and characteristics.

These include, for example, a specific type of plumage, different color patterns, the presence of a beard, comb, wattles, distinctly feathered feet, and the like. These specific traits can be considered breeding traits, usually specified in the so-called breeding standard. These features are genetically determined. Currently, some specific genes and their mutations responsible for these specific phenotypic manifestations are already known, for example, the gene KRT75, which is associated with frizzle plumage, and HOXC8, which causes the presence of a crest on the head.

Curly or frizzle plumage is quite common in ornamental poultry. It occurs, for example, in the Polish, Cochin, Plymouth Rock, Japanese, and Silkies. From the point of view of genetic determination, it is a phenotype that is incompletely dominant over standard plumage, so it never occurs in all individuals within the breed.

Now we will introduce several selected interesting breeds of ornamental poultry in more detail.

Silkie. It belongs to the most popular ornamental breeds of poultry. The breed originates from Asia. The miniature form was bred in the Netherlands. It is characterized by atypically fluffy feathers resembling "hairs," which are very soft to the touch, reminiscent of silk, from which the breed's name is derived, or satin. Special features include black-colored skin and bones, blue earlobes, and five toes on each foot. They come in many color variants (most often in shades of white, yellow, orange, and black). Roosters weigh between 1 and 2 kg, hens up to 1.4 kilograms, and miniature forms weigh around 0.5 kg. A calm and friendly temperament characterizes silkies. They can be easily tamed, so keeping them as companion pets is possible.

Wyandotte. This medium-heavy, dual-purpose breed was bred in the USA for meat and egg production. Named after the Wyandotte Indian tribe, it has been known since about 1880. The mother country of the miniature form is Germany. A robust body structure characterizes Wyandottes. The weight of roosters is up to 3.5 kg, hens up to 3 kg, and in miniature forms, around 1 kg. The feathers do not stick to the body and generally round out the body curves even more. There are many color variants - for example, white, blue, red, and various mottled and brindled forms. The first color variant was silver with black trim. The breed is characterized by

a calm temperament and good maternal qualities. It is suitable for keeping outdoors, for example, in the garden. It also gets along well with other types of poultry. The laying is around 180 eggs weighing approximately 55 g each year.

Barbu d'Uccle Chicken. This is a Belgian breed of so-called bantam or light chickens. It was first introduced in 1905. These are small animals with an average weight of roosters around 750 g and hens 650 g. The birds are characterized by beards protruding from the cheeks and chin and heavily feathered feet. There are up to 28 different color variants. In the past, the most common coloring was millefleur. Hence, sometimes this breed was called according to this color as millefleur chicken.

Faverolles Chicken. The breed was bred in France at the turn of the 19th and 20th centuries. Currently, there are three types of Faverolles chicken (original French, English, and German), which differ in body structure and plumage color. These are medium to heavier animals, weighing up to 5 kg for roosters and around 4 kg for hens. Good meat yield is also related to this breed. Chickens also grow quickly. There are several color variants, the most common being salmon color. They have feathered heads with prominent beard and feathered feet with five toes. They accept more demanding conditions and temperature fluctuations well. They are also suitable as pets thanks to their calm, trouble-free behavior.

Sebright chicken. This is a miniature breed that was bred in 19th-century in England by Sir John Sebright. It is a breed with a small body frame. The roosters weigh around 600 g, for hens a little less. The two most common color variants are gold and silver. The plumage looks like lace with a black-framed pattern. They are active, independent animals with a gentle, friendly nature that can be easily tamed. A particular disadvantage can be their greater susceptibility to various diseases.

Phoenix chicken. This German breed with typical long tail feathers was created using the Japanese Onagadori breed. However, only roosters have a conspicuous long tail. There are two variants - standard roosters with a weight of around 2.5 kg and bantam with a weight of around 700 g. These birds have a calm temperament, but expecting higher demands on breeding conditions is necessary. It is essential to constantly maintain the cleanliness of the environment to avoid pollution and damage to the long tail feathers. Phoenixes also fly well, so keeping them in a covered aviary is recommended.

Brahma Chicken. It was bred in the USA based on individuals imported from China. Until 1930, it was the most widespread breed used for meat production in the USA. A robust, broad, and high-carried body is typical for Brahma chicken. They are conspicuous for their rich, soft feathers and feathered feet. The roosters weigh 4.5-5 kg, hens are slightly smaller. There is also a miniature variant with a weight of roosters of 1.2 - 1.4 kg and hens around 1 kg. The most common color variants are light, dark, and buff. The Brahma is a tough, undemanding hen that can be outdoors all year round. They are characterized by a calm temperament and a friendly nature. It belongs to the breeds demanding good nutrition. They will not reach the desired body frame and weight without quality feed rich in protein.

Hamburg chicken. A breed with not exactly known origin. England and the northern coast of Western Europe are mentioned, but sometimes also Germany and the Netherlands. In any case, Hamburg chicken has a long history - their first mention dates back to 1700. At first, they were bred mainly for the purpose of egg production. This is a breed of small to medium body frame. We recognize more than ten color variants. Drawings can be divided into three groups - the

most famous are dotted, then striped, and solid. The striped birds are said to be the smallest, the spotted ones are medium, and the largest are solid. The most famous Hamburg hens in the Czech Republic are silver and black dotted. Hamburg chickens do not tolerate low winter temperatures well, so adjusting the winter housing accordingly is necessary. It is also necessary to take into account that they fly relatively well, so it is better to cover the coop. Hamburg chickens are very active and alert, sometimes with a tendency to run away - so they are not very suitable as pets (especially for children).

Polish chicken. This is a European breed of crested hen known for its remarkable crest of feathers. The earliest reports of these birds come from the Netherlands; however, their exact origin is unknown, sometimes Poland is also mentioned. The main breeding feature of these light-type hens is a large crest, which can be white, black, or colored like the rest of the body. Polish chicken is a small to medium-body frame breed, with a somewhat higher body and a longer, well-feathered, partially spread tail. There is also a miniature (bantam) form. There are many color variants, the most common being white, cream and black. Polish hens are active and curious, sometimes more timidity is indicated, which may be related to partially limited vision due to the prominent crest, animals can thus easily be frightened away in certain, unfamiliar situations.

Lastly, we will introduce the **Cochin chicken**. This is a large breed deriving its origin from poultry brought from China to Europe and North America. They belong to the heaviest breeds of chickens in the world, while roosters can reach a weight of almost 6 kg. The feet are so heavily feathered that they are not visible at all. For this reason, it is necessary to pay attention to the breeding environment - regularly clean the coop and the connected areas to avoid contamination and damage to the feathers on the feet. There are many color variants, from pure white to black, blue, and partridge. Yellow-toned variants are often bred for exhibitions, but there is a risk of fading. Therefore, breeders try to keep them in shaded areas. Although Cochins are kept mainly as an ornamental breed, they have a relatively good productivity in terms of egg production, they can lay up to 180 eggs per year. Breeding focused primarily on meat production is not profitable, as their meat is rough, dry, and therefore not very tasty compared to other breeds. It also takes longer for them to reach the required slaughter weight. Cochins are calm, flightless, easy to tame, and are considered one of the friendliest breeds. Breeders state that they belong to quiet breeds. Another positive feature is weather resistance and good maternal qualities.

At this moment I would like to thank you for your attention. If you have any questions, you can use the email listed here.