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Deviations of exterior characters from breeding standards of chicken – part II: miniature and ornamental breeds

Abstract

The work is aimed at evaluating exterior features, advantages and shortcomings in comparison with breeding standards in 5 breeds of ornamental and diminutive poultry. A total of 296 individuals of the Brahma Bantam (BB), Silkie Chicken (SE), Pekin Bantam (PB), Orpington Bantam (OP) and Sultan Chicken (SL) breeds, were evaluated at 9 exhibitions in 5 positions according to a valid Standards. Most exterior deficiencies were recorded in the top three positions. In the first position – Breeding and sexual expression, the most common mistakes were lower weight (BB 34.5 %, and SL 26.5 %), too long torso (BB 37.1 %, and OB 31.3 %) as well as higher weight in SE (34.1 %). In the second position – Head, the most shortcomings were noted in the BB, and SE breeds, these were mainly non-standard feathering of the facial part in BB (30.2 %), non-standard shape of the comb in BB (25.9 %), and SE (19.3 %) as well as the overall formation of the head in the SE (23.9 %). In the third position - Body shape, deficiencies were noted in OB (31.3 %), PB (26.9 %), and the most deficiencies in tail plumage were in OB (23.7 %), and SE (22.7 %) as well as atypical torso shape in BB (24.1 %) and SE (22.7 %). Within these three positions, individuals with knockout defects also appeared, but this was only an isolated occurrence. In the fourth position - Feathers, it was mainly an uneven distribution of colour on the flight feathers at SE (17.1 %), and OB (21.9 %) and sparse plumage at PB (15.4 %), OB (15.6 %), and SL (14.7 %). For the fifth position - Readiness for the exhibition, care of the breeder, it was a lack of preparation and dirty feathers at BB (1.7 %) and SL (5.2 %). The most serious deficiencies of the breed traits were found in 1st and 3rd position, which has a major impact on their further breeding value or culling. As part of the selection of the most suitable representatives of the breed with an assessment of their exterior at exhibitions, it is possible to create a breeding with the highest quality exterior signs with the appropriate performance. The data obtained from poultry valuation cards show that the assessment of poultry is one of the important criteria for their introduction into the holding and further reproduction in order to eliminate individuals with morphological deviations from the breeding standard, who can pass on these defects to future generations.

Keywords: chicken, standard, exterior, body weight, Silkie Chicken, Bantam

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Introduction

Small breeds of hens belong to the oldest breeds of gallinaceous poultry. The weight of these breeds varies between 500 – 1300 g. We divide them into 2 large groups, into own small breeds, and diminutive breeds. When breeding own small breeds, the emphasis was primarily on their exterior. Own small breeds are not represented among breeds of normal size. Diminutive breeds are a reduction of individual utility types, but also ornamental breeds, differing from them mostly only in size and body weight. In some cases, they also have a more variegated coloring, and a more pronounced drawing of feathers. Diminutive breeds, unlike own small hens, have better utility characteristics. Several breeds of diminutive with laying type of utility, have become ornamental breeds due to low laying and weight. The breeding standards of these treatments coincide with the standards of breeds of normal size, except for size parameters.[1]

A set of standards of individual breeds for given animal species can be found in poultry standards. Ornamental poultry breeds have certain typical breeding features, that distinguish them from other breeds. An important breeding feature of some breeds of ornamental poultry is, for example, the five-fingered. In crested breeds, the crest is characteristic, which in roosters has the shape of a helmet, and in hens it is round. In other breeds, these are the mustache (plumage of the lower part of the face or neck), the plumage of the feet, the vultures of heel or the cuff (long, backward-facing pens).[2] The peculiarities of feathers still include: the absence of a tail, short legs, extremely elongated tail feathers, curly or silky feathers, possibly hyperpigmentation of feathers, skin, comb, lobes, beak and some internal organs.[3]

The determination of the breeding value of diminutive and ornamental breeds of hens is always problematic as breeders focus more on their overall appearance than on their performance.[1] The aim of this work was to study and compare exterior features in selected ornamental and diminutive breeds of hens according to current standards of poultry breeds at small animal exhibitions.

Material and methods

Selection of chicken breeds

Due to the high number of chicken breeds and extensive definitions of their standards, five breeds were selected for this study. They are those most often presented at exhibitions and represent the most valuable breeding core of the whole group. Our study included: Brahma Bantam (BB), Silkie Chicken (SE), Pekin Bantam (PB), Orpington Bantam (OB), Sultan Chicken (SL). The exterior of 296 chickens of selected miniature and ornamental breeds was judged at 9 Slovak exhibitions during the years 2019 and 2021. Of the 296 chickens represent 116 of BB, 88 of SE, 26 of PB, 32 of OB and 34 of SL (Table 1).

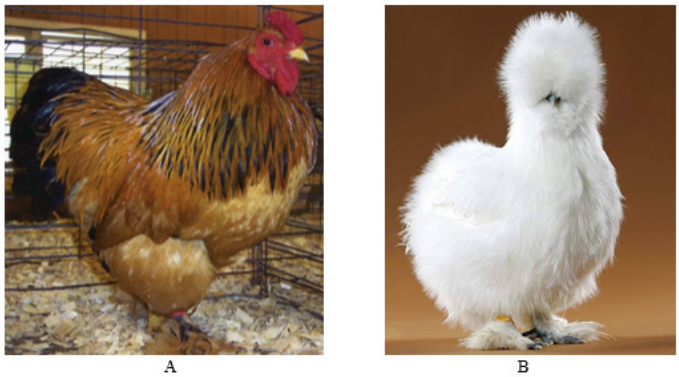
Table 1 Number of selected miniature and ornamental assessed at individual exhibitions

Exhibition/year	BB	SE	PB	OB	SL
Poprad, 2019	16	8	4	4	4
Košice, 2020	12	10	3	-	-
Veľké Kostoľany, 2020	-	8	-	7	-
Námestovo, 2019	8	-	4	9	2
Žilina, 2019	4	4	7	-	2
Nitra, 2019	50	44	5	10	18
Námestovo, 2020	6	6	-	-	2
Námestovo, 2021	12	-	-	-	2
Žilina, 2021	8	8	3	2	4
Breed together (pcs)	116	88	26	32	34

Legend: BB, brahma bantam; SE, silkie chicken; PB, pekin bantam; OB, orpington bantam; SL, sultan chicken

Standard of selected chicken's breeds

Brahma Bantam (BB) (Figure 1A), it has a strikingly massive body, multiplied by abundant soft plumage and feathered legs. The dwarf Brahmas are an old breed. The dwarf Brahmas are bred in nine recognized color varieties: white black columbia, white-blue columbia, yellow-black columbia, yellow-blue columbia, silver – banded, partridge – banded, blue partridge banded, blue silver banded orange back with black Isabella, banded blue – in the recognition procedure. The comb is small, triple or pea shaped. The dwarf Brahma chickens are among the largest known dwarf chickens. The weight of the breed is in the range from 1200 to 1400 g. Despite being larger than other bantam breeds, the hens lay smaller eggs. One of the best-known features of the breed is the feather on the legs. The bantam Brahmas are very calm and docile birds. Knock-out defects in breeding traits include non-standard size, low posture, narrow breasts, nonfeathered middle fingers, auricles of white color, large, protruding, thick comb, and a color other than prescribed drawing.[4]



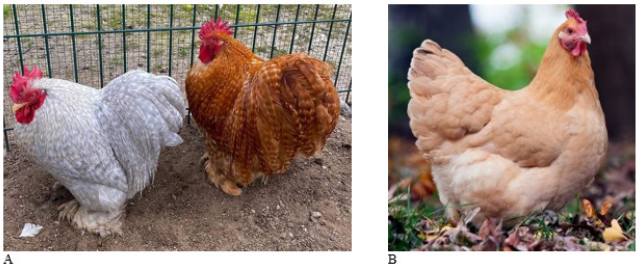
A B

Figure 1 Brahma Bantam (A) and Silkie Chicken (B).

Source: Photo A;[4] Photo B.[5]

Silkie chicken (SE): (Figure 1B), is a stocky chicken with a rounded body shape with a gently rising back line and a medium-high posture. It has a soft, fluffy feather appearance. It has been compared to silk, and to fur. This characteristic leaves silkies unable to fly.[6] Silkies appear in two distinct varieties: bearded and non-bearded. Bearded silkies have an extra tuft of feathers under the beak area that covers the earlobes. They also are separated according to color. Colors of Silkie recognized for competitive showing include black, blue, splash, lavender, grey, partridge, and white. The standards of perfection call for all Silkies to have a small walnut-shaped comb, black or bluish skin, bones, grayish-black meat dark, and turquoise-blue earlobes. In addition to these defining characteristics, Silkies have five toes on each foot A well-developed crest is directed backwards. The transversely running ridge is blue-red in color. The weight of the rooster is 1.1–2.0 kg, and the hens 0.9–1.4 kg. Silkies lay a fair number of eggs, ranging from white to cream or light tan, but production is often interrupted due to their extreme tendency to go broody. A silkie hen can produce 100 eggs in an ideal year. Their capacity for incubation, which has been selectively bred out of most fowl bred especially for egg production, is often exploited by poultry keepers by allowing Silkies to raise the offspring of other birds.[7] Knock-out defects of breeding features include too narrow and long body, weak, un silky, hard plumage, underdeveloped feathers, weakly separated fingers on the legs, nonfeathered legs, other coloring of the skin, feathers, legs and comb, growths on the comb, lack of groove on the comb and a significantly lightened eye color.[8]

Pekin bantam (PB): (Figure 2 A), has been a popular ornamental breed for a while due to its large size and fluffy appearance. Characteristic features of the exterior are consistent with the large form of the breed.[1] The most distinctive feature of the Pekin Bantam is the excessive plumage that covers leg and foot. They are rather round-shaped, and their carriage tilts forward, with the head slightly closer to the ground than their elaborate tail feathers. This 'tilt' is a key characteristic of the Pekin. The bird on the whole, though the tail especially, should be abundantly feathered, and well rounded. The cockerels often have longer feathers that protrude outwards from their feet. In addition to the natures with the normal structure of the plumage, they also breed natures with curly plumage.[9] The weight of the rooster is 0.8–1.3 kg, and the hens 0.6–1.0 kg. The breed is bred in 26 color variations.[1] Colors include black, blue, buff, cuckoo, barred, lavender, partridge, white, birchen, silver partridge, and salmon. The skin beneath the feathers is yellow. Knock-out defects in breeding features include narrow body shape, flat and narrow breasts, long tail, weak plumage of the legs, white auricles and a color different from that the prescribed drawing.[9]



A B

Figure 2 Pekin Bantam (A) and Orpington Bantam (B) .

Source: Photo A;[12] Photo B.[10]

Orpington bantam (OB): (Figure 2 B), are hens with a square body frame, with a rich, non-curly plumage that enhances their voluminous body. Characteristic features of the exterior are consistent with the large form of the breed.[1] The head is wide, a simple comb is medium in size. The eyes are most often orange-red. They have full and deep breasts, a short and wide back that passes into a short, medium-set tail. The legs are short and strong. The first bred color character was black, today it is bred in eleven color variations, most often in yellow and black. The weight of the rooster is 2.0 kg, and the hens 1.6 kg. Knock-out defects in breeding traits include too narrow body, cushions on the back, too long or invisible dorsal line, high and flat breasts, incorrect posture, long, low-borne, pointed or very open tail, narrow feathers and a color or drawing other than that of the standard.[10,11]

Sultan chicken (SL): (Figure 3), have a great deal of decorative plumage, including large, puffy crests, beards, long tails, and profuse foot feathering. Their small, V-shaped combs are almost entirely hidden under feathering. The skull is bulging, forming a base for the crest. The crest is round and dense, formed by longer lips, periodically ray-like. The beak is short, strongly hooked, the chin is expressive and rich, divided into a round chin that covers the throat and a sideburn that covers the auricle and face. The torso is horizontal. Relatively short legs are feathered on the outside. In a rooster, the tail is wide, carried high. Sultans are also one of a minority of breeds to have five toes on each foot. The breed has only one recognized color – white. They belong to flightless breeds weighing 1.5-2.0 kg in roosters and 1.0-1.5 kg in hens. Knock-out defects in breeding traits include a rough constitution, or too angular body shape, too high posture, too little developed or oblique crest, lack of feathering of the legs and lack of cuff formation, missing fifth finger, blue skin, overhanging eye arches.[13]

A B

Figure 3 Sultan Chicken.

Source: Photo A-B.[14]

Assessment of chickens

Poultry at exhibitions are evaluated by trained reviewers with sufficient theoretical and practical experience and completed training. The evaluation of poultry takes place even before the start of the exhibition without public access. Everyone is compared in detail with the appropriate standard. For the correct assessment of a particular individual, its body structure and individual body proportions and details, knowledge of the specifics of individual poultry breeds, the coloring and drawings of their plumage, the current trend of breeding the respective breeds and the direction of poultry breeding are necessary.[1,15]

As part of the evaluation of the exterior of poultry, the assessor evaluates not only the advantages, but also the shortcomings of the evaluated individuals, as well as makes recommendations within individual positions. Each evaluated individual is assigned an award card, which indicates the cage number, ring number, hatching year, sex, breed, coloring, rating in individual positions (advantages, recommendations, and errors), point and verbal evaluation, possible award, date of exhibition, stamp of the exhibition, and judge (Figure 4).[16]

Poultry are evaluated at exhibitions in five evaluated positions:

a. Breed type and sexual expression (framework, constitution, condition, skeleton).

b. Head (beak, comb, lobes, auricle, eyes, face).

c. Body shape (torso, neck, wings, legs, tail).

d. Feathers (color, drawing, structure, feathered ornaments).

e. Readiness for the exhibition, care of the breeder.

Slovak Breeders' Association
POULTRY VALUATION SHEET

Exhibition
Date

Cage No	Breed/Colour character		Points	Evaluation
	Sex	Weight		
	Ring number	Vintage		

Advantages	**Recommendations**	**Defects**
Breed type and sexual expression /framework, constitution, fitness, skeleton/		
Head – /beak, comb, lobes, auricle, eyes, face/		
Body shape – /torso, neck, wings, legs, tail/		
Feathers – /colour, drawing, structure, feathered ornaments/		
Readiness for the exhibition, care of the breeder		
EX: excellent – 97 or more pts; E: excellent – 96 pts;VG: very good – 95, 94, 93 pts; G: good – 92, 91 pts		S: satisfactory – 90, 89, 88, 87, 86 pts; D: discarded – 0 pts; NR: not rated – 0 pts
Exhibition stamp	Stamp of the assessor	Prize awarded

Figure 4 Poultry Valuation Card.

Legend: Abbreviations and corresponding intervals of rating points on valuation sheet: EX, excellent; – 97 or more pts; E,excellent; – 96 points; VG, very good; – 95, 94, 93 pts; G, good; – 92, 91 pts; S, satisfactory; – 90, 89, 88, 87, 86 pts; D, discarded; – 0 pts; NR, not rated — 0 pts

Source: SZCH.[16]

The assessor may give a rating of most excellent (over 97 points), excellent (96 points), very good (93-95 points), good (91-92 points), satisfactory (86-90 points), rejected and unrated (consistently 0 points)(16).

Poultry are evaluated according to the European Poultry Standard (EE standard). The EE standard is a database of all standards that have been approved by the European standard commission poultry (ESC-P). According to ESC, poultry are assessed by a combined assessment consisting of verbal commentary, and the resulting scoring.[17]

Statistical analysis

The individual positions of ornamental and diminutive poultry, as well as their advantages, recommendations and mistakes, were summarized from the valuation tickets of the evaluated individuals. The statistical analysis was performed using Microsoft Excel 2007 software. To compare the differences of individual positions between different breeds of ornamental hens, the Chi square test ($\chi 2$ test) with the level of significance level at $\alpha=0.05$ was used.

Results and discussion

The breeding of ornamental and diminutive poultry has several advantages over the classic breeds, such as less demands on breeding space and lower feed consumption. Its breeding value is not so much in the performance related to egg production or in the high weight,

but especially in their unique appearance. Determining the breeding value of such individuals is always difficult and therefore an expert assessment of the exterior is important to avoid further errors that may be transmitted to offspring.[18]

The evaluated features of the exterior in 296 poultry individuals from 9 exhibitions show shortcomings, especially in position 1st Breeding and sexual expression (framework, constitution, condition, skeleton), as well as in position 2nd Head (beak, crest, lobes, auricle, eyes, face) and 3rd Body shape (torso, neck, wings, legs, tail). Table 2 shows that for all the breeds evaluated, we noted a lower as well as higher body weight than is given by the standard, the most rated individuals with a lower weight were in the BB breed (34.5 %). We came to a similar result with a higher weight rating (BB, 30.2 %). For the BB breed, we also found the highest number of other exterior defects, such as a long torso at 37.1 %, a smaller body frame at 21.6 %, and a weakly muscular torso at 12.8 %. The lowest variations in weight from the standard, as well as the number of other exterior defects, were noted in the PB breed (lower weight recorded in 5 evaluated individuals – 19.2%, higher weight in 4 evaluated individuals – 15.3%). Of the knockout errors, a low posture was noted in one BB individual (0.9 %), and a small body frame in two individuals from the BB, PB, and OB breeds in selected evaluated breeds.

According to Hussen and Hassan,[19] individuals with a smaller body frame within the breed under consideration often have a lower final weight, which was also confirmed in our study. The lower weight can be caused by various stress factors in breeding facilities. Poor nutrition with poor transition, and nutritional composition of compound feed for individual stages of growth are among the main stress factors that lead to reduced weight, and impaired overall fitness. Other stressors affecting animal growth and health include parasitic and other infectious diseases, temperature changes or frequent changes in breeding facilities.

The most shortcomings in the 2nd position - Head (beak, comb, lobes, auricle, eyes, face) were noted in the BB and SE breeds (Table 2), these are primarily the shape and size of the head, the size of the lobes and the shape of the comb. When comparing the two breeds, more flaws were noted in the BB breed. In addition to the already mentioned BB deficiencies, there is also insufficient plumage in the facial part (30.2 %). The 10 evaluated individuals of the BB breed also had a non-standard beak shape (8.6 %), which was not recorded in the other breeds evaluated. Of the knockout errors, too large a comb (BB-3.4 % and PB – 7.2 %), and a thick comb (SE – 3.4 %) were noted.

Table 2 Evaluation of the percentage of specific defects and knockout defects in the 1st position - Breed type and sexual expression (framework, constitution, condition, skeleton), and 2nd position - Head (beak, comb, lobes, auricles, eyes, face)

Breeds of chicken	**BB**	**SE**	**PB**	**OB**	**SL**	**P**
n	**116**	**88**	**26**	**32**	**34**	
Defects % (number of individuals) in 1st position						
Lower weight	34.5 (40)	2.3 (2)	19.2 (5)	21.9 (7)	26.5 (9)	*P<0.05*
Higher weight	30.2 (35)	34.1 (30)	15.3 (4)	15.6 (5)	14.7 (5)	*P<0.05*
Small body frame	21.6 (25)	4.5 (4)	-	21.9 (7)	11.8 (4)	NS
Long torso	37.1(43)	23.9 (21)	19.2 (5)	31.3 (10)	11.8 (4)	*P<0.05*
Weakly muscular torso	12.8 (11)	4.5 (4)	7.7 (2)	6.3 (2)	-	NS
Knock-out defects % (number of individuals) in 1st position						
Small body frame	1.7 (2)	-	7.7 (2)	6.3 (2)	-	NS
Low posture	0.9 (1)	-	-	-	-	NS
Defects % (number of individuals) in 2nd position						
Feathering of the facial part	30.2 (35)	-	-	-	5.9 (2)	NS
Comb shape	25.9 (30)	19.3 (17)	15.3 (4)	12.5 (4)	11.8 (4)	*P<0.05*
Head size	17.2 (20)	23.9 (21)	7.7 (2)	12.5 (4)	5.9 (2)	*P<0.05*
Lobe size	21.6 (25)	29.5 (26)	7.7 (2)	6.3 (2)	11.8 (4)	*P<0.05*
Beak shape	8.6 (10)	-	-	-	-	NS
Head	24.1 (28)	36.4 (32)	23.1 (6)	21.9 (7)	23.5 (8)	*P<0.05*
Knock-out defects % (number of individuals) in 2nd position						
Large comb	3.4 (4)	-	7.7 (2)	-	-	NS
Coarse comb	-	3.4 (3)	-	-	-	NS

Legend: BB, brahma bantam; SE, silkie chicken; PB, pekin bantam; OB, orpington bantam; SL, sultan chicken

Source: Table processed based on valuation tickets.

According to Slovak Breeders Association, the most common defects in the third position in small ornamental breeds of treatments include the shape of the body and torso with the way of holding and carrying as determined by the standard. Especially in ornamental breeds with a raised tail, there is a non-standard posture with the folding of the dorsal line into the so-called carp shape.[20] We noted a similar incidence of errors in the evaluated breeds in 3rd position - Body shape (torso, neck, wings, limbs, tail) in the breeds evaluated by us (Table 3).

The most shortcomings in terms of number were found in the BB breed (body shape – 23.3 %; torso shape – 24.1 %; tail carrying – 28.4 % and poor posture – 19.8 %). The SE breed showed more deficiencies in tail plumage (22.7 %) and torso shape (22.7 %). Of the knockout errors, deviations in the shape and size of the torso (PB, OB, and SL) as well as in tail length in SE, and SL were the most noted.

In the fourth position, the color of the plumage, drawing, structure and feathered ornaments are evaluated. Despite the timing of the exhibitions that take place in the autumn-winter period, many

individuals do not have a completed feather exchange, which can reduce their overall score. Also, young individuals often lack the saturation of coloration and shine of feathers, which is shown only after the feathers have been replaced.[21] Of the plumage errors in the evaluated breeds, the whitest spots on flight feather were in the SE (17.1 %). Sparse plumage was the most common shortcoming in poultry breeds (PB 15.4 %, SL 14.7 % and SE 4.5 %) (Table 3). Insufficient preparation for the exhibition and dirty feathers were the most common mistakes recorded in the 5th position - Readiness for the exhibition, care of the breeder in the BB (1.7 %), and SL (5.9 %) breeds. Within the last two positions, knock-out errors were not identified.

Table 3 Evaluation of the percentage of specific defects and knockout defects in the 3rd position – Body shape (torso, neck, wings, limbs, tail), 4th position – Feathers (color, drawing, structure, feathered ornaments), and 5th position – Readiness for the exhibition, care of the breeder

Breeds of chicken	**BB**	**SE**	**PB**	**OB**	**SL**	**P**
n	**116**	**88**	**26**	**32**	**34**	
Defects % (number of individuals) in 3rd position						
Body shape	23.3 (27)	25.0 (22)	26.9 (7)	31.3 (10)	20.6 (7)	*P<0.05*
Colors of legs	11.2 (13)	-	7.7 (2)	12.5 (4)	11.8 (4)	NS
Nonfeathered tail	8.6 (10)	22.7 (20)	23.7 (6)	12.5 (4)	17.6 (6)	*P<0.05*
Tail carrying	28.4 (33)	19.3 (17)	19.2 (5)	21.9 (7)	11.8 (4)	*P<0.05*
Framework	24.1 (28)	22.7 (20)	7.7 (2)	18.8 (6)	11.8 (4)	*P<0.05*
Length of legs	11.2 (13)	12.5 (11)	19.2 (5)	12.5 (4)	11.8 (4)	*P<0.05*
Length of	14.7 (17)	7.9 (7)	-	15.6 (5)	14.7 (5)	NS
Poor posture	19.8 (23)	10.2 (9)	7.7 (2)	6.3 (2)	5.9 (2)	NS
Knock-out defects % (number of individuals) in 3rd position						
Length of tail	-	2.3 (2)	-	6.3 (2)	-	NS
Shape and size of torso	-	-	7.7 (2)	6.3 (2)	14.7 (5)	NS
Missing cuffs	-	-	-	-	5.9 (2)	NS
Defects % (number of individuals) in 4th position						
White spots on flight feather	-	17.1 (15)	-	21.9 (7)	-	NS
Sparse plumage	-	4.5 (4)	15.4 (4)	15.6 (5)	14.7 (5)	NS
Defects % (number of individuals) in 5th position						
Insufficient preparation	1.7 (2)	-	-	-	-	NS
Dirty feathers	1.7 (2)	-	-	-	5.9 (2)	NS

Legend: BB, brahma bantam; SE, silkie chicken; PB, pekin bantam; OB, orpington bantam; SL, sultan chicken

Source: Table processed based on valuation tickets.

The most shortcomings in terms of number were found in the BB breed (body shape – 23.3 %; torso shape – 24.1 %; tail carrying – 28.4 % and poor posture – 19.8 %). The SE breed showed more deficiencies in tail plumage (22.7 %) and torso shape (22.7 %). Of the knockout errors, deviations in the shape and size of the torso (PB, OB, and SL) as well as in tail length in SE, and SL were the most noted.

In the fourth position, the color of the plumage, drawing, structure and feathered ornaments are evaluated. Despite the timing of the exhibitions that take place in the autumn-winter period, many individuals do not have a completed feather exchange, which can reduce their overall score. Also, young individuals often lack the saturation of coloration and shine of feathers, which is shown only after the feathers have been replaced.[21] Of the plumage errors in the evaluated breeds, the whitest spots on flight feather were in the SE (17.1 %). Sparse plumage was the most common shortcoming in poultry breeds (PB 15.4 %, SL 14.7 % and SE 4.5 %) (Table 3). Insufficient preparation for the exhibition and dirty feathers were the most common mistakes recorded in the 5th position - Readiness for the exhibition, care of the breeder in the BB (1.7 %), and SL (5.9 %) breeds. Within the last two positions, knock-out errors were not identified.

Conclusion

At nine exhibitions, the breeding standards presented in the current poultry breed Standards were compared in five selected breeds of ornamental and miniature chicken breeds, which were represented by 296 individuals. The most serious deficiencies of the breed traits were found in 1st and 3rd position, which has a major impact on their further breeding value or culling. In diminutive breeds of hens, it is not their performance that matters, but their overall appearance, and therefore, in the next selection, one must not forget about their correct body formation, and overall vitality. As part of the selection of the most suitable representatives of the breed with an assessment of their exterior at exhibitions, it is possible to create a breeding with the highest quality exterior signs with the appropriate performance. The data obtained from poultry valuation cards show that the assessment of poultry is one of the important criteria for their introduction into the holding and further reproduction in order to eliminate individuals with morphological deviations from the breeding standard, who can pass on these defects to future generations.

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Conflicts of interests

Authors declare that there are no conflicts of interest.

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