

MORPHOLOGICAL CHARACTERISTICS OF DALMATIAN TURKEY – PRELIMINARY RESULTS –

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Dalmatian turkey is a local, archaic form which has been traditionally reared on the area of Dalmatian hinterland. This local form has quite specific phenotypic characteristics and it is very suitable for extensive production system in small flocks where turkeys are kept and fed outdoor the most part of the year. Since everyday increase in turkey's hybrids in this area decrease the number of the Dalmatian turkey, we find necessary to determine their average population size and morphological characteristics. That will present the first steps towards its' full phenotypic and genotypic identification as a possible autochthonous breed. From this reason we collected data from 26 breeders with 3 to 20 breeding animals in flocks. Also we performed morphological measurements (determination of feather colour, body mass and average body and head measures) on 10 flocks (2 females and 1 male in each flock). Average body mass of turkey hens was 4.3 ± 0.7 kg, and of turkey cocks was 7.2 ± 1.2 kg. The plumage colours were predominantly black, bronze, grey or white-palm, rarely mottled black.

Key words: Dalmatian turkey; autochthonous form; phenotypic characteristics; body measures

МОРФОЛОШКИ КАРАКТЕРИСТИКИ НА ДАЛМАТИНСКАТА МИСИРКА – ПРЕЛИМИНАРНИ РЕЗУЛТАТИ –

Далматинската мисирка е локална, архаична форма која традиционално се одгледува во областа на далматинското приморје. Оваа локална форма има доста специфични фенотипски карактеристики и е многу погодна за екстензивен производствен систем на мали јата каде мисирките се чуваат и хранат на отворено во најголем дел од годината. Од причина што секојдневниот пораст на хибридни мисирки во оваа област го намалил бројот на далматинската мисирка, најдовме за неопходно да ја утврдиме просечната големина на оваа популација и нејзините морфолошки карактеристики. Тоа ќе ги даде првите чекори кон целосна фенотипска и генотипска идентификација на оваа мисирка како можен автохтон вид. Од оваа причина собравме податоци од 26 одгледувачи со 3 до 20 расплодни птици во јатото. Исто така вршевме морфолошки мерења (одредување боја на пердувот, телесна маса и просечни димензии на телото и главата) на 10 јата (2 женки и 1 мажјак во секое јато). Просечната телесна маса на женските птици беше $4,3 \pm 0,7$ kg, а кај мисирите изнесуваше $7,2 \pm 1,2$ kg. Бојата на пердувот беше претежно црна, бронзена, сива или бела, ретко прошарана со црна.

Клучни зборови: далматинска мисирка; автохтона форма; фенотипски карактеристики; телесни мерки

INTRODUCTION

At the beginning of 2009, a project “Dalmatian turkey – phenotypic parameters and ecological characteristics of the area” has been started (Ekert

Kabalin et al., 2009). Dalmatian turkey (Pictures 1 and 2) is an archaic form of poultry which has been traditionally reared on the area of Dalmatian hinterland. This local form has quite specific phenotypic characteristics and it is very suitable for

the extensive production system in small flocks where turkeys are kept and feed outdoor the most part of the year. Since everyday increase in turkey's hybrids in this area decrease the number of the Dalmatian turkey, we find necessary to determine their average population size and morphological characteristics. From this reason, the Ministry of Agriculture, Fisheries and Rural Development of the Republic of Croatia, as well as the State Institute for Nature Protection and the National Park Krka decided to give financial support for this project.



Picture 1: Dalmatian turkeys



Picture 2: Dalmatian turkeys in their native surrounding (photo by A. Grgas, 2009)

Poultry breeds that are included in the Croatian National Register of Autochthonous Breeds are hens the Hrvatica and the Zagorje turkey (Ministry of Agriculture, Fisheries and Rural Development, 1998, 2003, 2006, 2007). Their value lies in the fact that they are components of the Croatian heritage and in that way included into historical and cultural development of certain regions, but

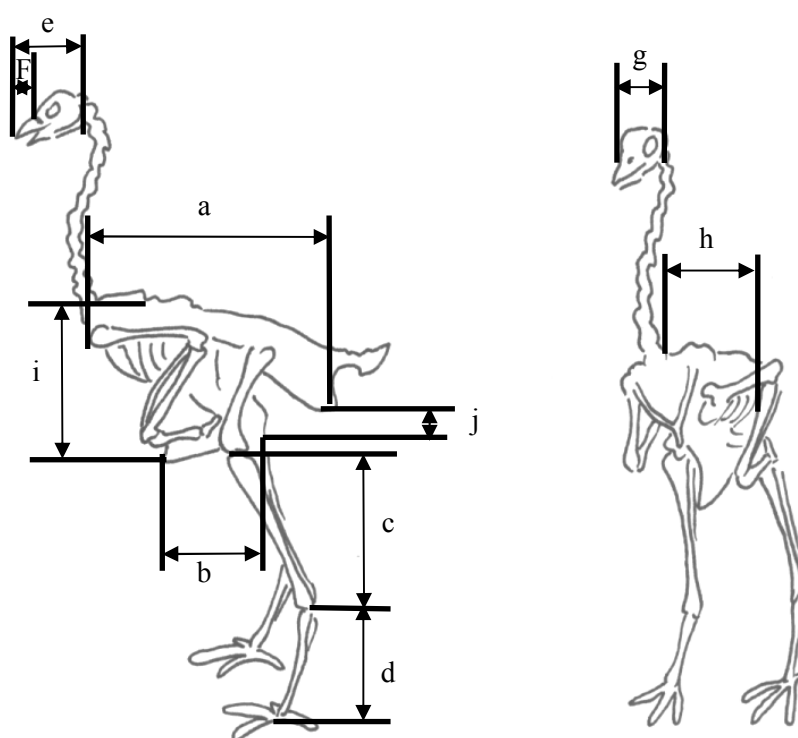
also in production of autochthonous products (Ekert Kabalin and Štoković, 2007; Janječić and Mužić, 2007; State Institute for Natural Protection and Ministry of Culture, 2006, Posavi et al., 2001 and 2002, Sušić et al., 2001). As the process of identification of autochthonous breeds is not finished in the World, as well as in Croatia (FAO, 2007; Kuterovac et al., 2001), in this paper we would like to present the preliminary results of morphological characterization of the Dalmatian turkey. At the same time, this presents the first steps toward characterization of the possible autochthonous breed.

MATERIAL AND METHODS

From the beginning of 2009, breeding data (including keeping, feeding, reproductive season, losses, production and marketing) were collected from 26 families. Morphological measurements of adult, reproductive animals (kept for breeding in the next season) were performed on 30 animals – 2 females and 1 male in each of 10 flocks. Determined morphological characteristics were the plumage colour, the body mass and the average body measures (body length, width and depth of chest, length of sternum, head width and length as well as beak length, length of drumstick and shank and distance between sternum and pubic bone) presented on the Scheme 1. These parameters are measured as described by *Kodinetz* (1940), and later used by *Janječić and Mužić* (2007) in characterization of the Zagorje turkey. Head and body measures were taken by calliper (0.2 mm accuracy) and pelvimeter (0.3 cm accuracy), while the hanging scale was used for the body mass measure with accuracy of 0.01 kg. The basic statistical analysis of the collected data was performed with the Statistica 8.1 software (StatSoft, 2008).

RESULTS AND DISCUSSION

The size of flocks on farms differs from 3 to 20 breeding animals, which means from 20 to 300 fattening animals during a year. Turkeys are of different plumage colour: black, bronze, grey or white-palm, rarely mottled black. They are reared in the extensive way, with outdoor feeding the most part of the year. Average body measures of turkey-hens and turkey-cocks are presented on Table 1.



Scheme 1: Turkey body measures (author: Štoković, I., 2008)

*body length; ^blength of sternum; ^clength of drumstick; ^dlength of shank; ^ehead length; ^fbeak length; ^ghead width; ^hbody width; ⁱdepth of chest; ^j distance between sternum and pubic bone

Table 1

Average body measures of turkey-hens and turkey-cocks

Morphological characteristic	Turkey-hens (<i>n</i> = 29)			Turkey-cocks (<i>n</i> = 19)		
	Mean	±	SD	Mean	±	SD
Body mass	4,26	±	0,67	7,18	±	1,18
Body length	23,71	±	1,95	28,75	±	2,45
Body width	7,38	±	0,68	9,38	±	1,47
Depth of chest	14,90	±	1,02	19,58	±	2,44
Length of sternum	11,95	±	1,51	16,65	±	1,56
Head length	9,62	±	0,30	11,35	±	0,44
Head width	3,68	±	0,11	4,35	±	0,23
Beak length	4,58	±	0,38	5,77	±	0,52
Length of drumstick	17,78	±	0,97	21,10	±	1,71
Length of shank	12,13	±	0,60	15,77	±	1,27
Distance between sternum and pubic bone	6,63	±	0,51	5,89	±	0,51

The main laying season is in late winter and early spring (from February till April), when the turkey-hen lays up to 20 eggs, but some breeders

also use the second laying season during summer (July). As a result, the main hatching season is from the end of March to the beginning of May.

Traditionally the way of hatching was under hen, but in last few years some breeders use incubators. From the end of May young turkeys can be kept and fed outdoor. Animals graze the most part of the year, and the other feeding includes: corn groats, other cereals, by-products of kitchen-garden or orchard (olives, onion, and cabbage). Few first days young turkeys are fed with eggs, followed by commercial or home prepared concentrates (from whey, nettle, clover or rice), and after that they are also fed on open as adult animals. Production on these family farms is mostly oriented to their own needs, or for further family, but also for sale (on market or at home), and they supply restaurants in tourist season as well.

CONCLUSIONS

The first step in preservation of the traditional form is its identification (phenotypic characterization), determination of size and status, followed by genotyping characterization and conservation (FAO, 2007; Štoković et al., 2007a and 2007b). Also, besides financial incentives (Ministry of Agriculture, Fisheries and Rural Development, 2002–2006), it is necessary to contribute to self-preservation of such animals through commercialization of unique and recognizable autochthonous products. We hope that the results of this project will contribute to the bright future for the Dalmatian turkey and their breeders.

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