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THREATENED CATTLE BREEDS IN CROATIA (Role and preservation)

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Introduction

In Croatia there are about 383.000 cows. Out of these 77% are Simmentals, 5.1% are Brown cows and 4.1% are Holstein-Friesian. The remaining 13.8% are breeds and crossbreeds, the types in the process of changing from less productive into more productive types. They have a secondary role in the commercial production. The group consists of these breeds, i. types: the Podolic (Slavonia — Srijem), the Istrian cattle, Buša, and the Grey cattle in Dalmatia. In the process of changes for more productive breeds the following breeds and types have completely disappered: Pinzgauer, Tuxer-Zillertaler, Murbodner, the cattle from Krk and others.

Istrian cattle

The Istrian cattle derives its name from the Istrian peninsula in the west of the Republic of Croatia. There are two theories of its origin. P o v š e (1894.), M i š o n and J a r d a s (1950) consider that cattle of Buje was imported at the end of 18th century from Italian provinces Romagna and Puglia. On the other hand, the Italian paper »Appunti zooteccnici« (Inspectorate of Pula, 1945; cit. C a p u t et al., 1989) describes the origin of Istrian cattle differently. According to these paper Istrian cattle is an autochthonous cattle which came to Istria with the Roman legions in the first centuries. It is also possible that Istrian cattle was brought to Istria from the south of Russia and Besarabia in 452, by Atila's hordes. We are inclined to accept the latter theory, and we also consider that during a longer period of time a special type of cattle was created, with small blood influence by Italian breeds (Romagnola and Maremmana).

According to L a z a r (1981) Istrian cattle is closely related to American Longhorn. It is possible that the Longhorn arrived in the Iberian peninsula from Asia via the Balkans and the North Mediterranean, and during Spanish immigration was introduced to Central America in 16th century.

The Istrian cattle should have light to dark grey coat, black tongue and palate, but light snout and sometimes rings (around the eyes). They have very long and decorative horns (over 1 m in old oxen). Animals show high heat tolerance and resistence to diseasses. Due to their moderation in nutrition its food is consists of pasture, browsing, dry leaves, straw and maize.

Istrian cattle is a dual purpose breed (work and meat). Its draught power is excellent. Two cows or oxen are normally used for drawing and plowing. Cows have brisk temperament and great readiness to obey.

Since 1973, when B o h m et al. published their study »Blood groups of cattle breeds in Yugoslavia«, only L a z a r (1981) has investigated the genetic polymorphism of milk and plasma protein of Istrian cattle. Our recent results (Table 2.) are in agreement with those obtained by B o h m et al. (1973).

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Tab. 1. — Body measurements of Istrian cows
Tjelesne mjere krava istarskog goveda

	Body weight	Heiht at withers	Height of croup	Circumf. of chest	Depth of chest	Width of chest	Body length
	kg	cm	cm	cm	cm	cm	cm
$\bar{x}$	630	139.3	142.6	204	72.3	50.3	162
s	54	5.3	5.5	9.7	3.3	4.9	9.1

According to the tuberculization list in 1988 there were only 797 cows and heifers in calves of Istrian type of cattle (judged by the exterior). As the number of this breed of cattle was suddendly decreasing, the project of Istrian cattle genes collection formation was carried out in 1988, combining 4 herds, each herd with 30 cows and 2 bulls. Up to now, one herd has been formed in Buzet. Besides, Stock Breeder's Association of Istrian Cattle (SUIG) has been constituted.

Tab. 2. — Phenotypes distribution and gene frequency of transferin and hemoglobin in Istrian cattle
Raspored fenotipova i frekvencija gena transferina i hemoglobina u istrarskog goveda

TRANSFERIN							
Number		Phenotype frequency			Gene frequency		
n	AA	DD	AD	AE	A	D	E
32	2	13	13	4	0.328	0.609	0.063

HEMOGLOBIN					
	Phenotype frequency			Gene frequency	
n	AA	AB	BB	A	B
32	32	—	—	1.00	0.00

The main reason for preserving the Istrian cattle is maintaining breed variety and ensureing its importance for cattle breeding in the future. It might become a commercial breed in the future if some plans in crossbreeding the Simmental, Charolais and Hereford breeds are realized.

Slavonian Podolic cattle

The Slavonian Podolic (Podolian) cattle in the regions of Croatia certainly has congenial history of origin as have other types of the Podolian cattle in the Panonian valley. We are inclined to the theory of migration of this cattle from Podolia and Volhinia (Soviet Union) to the Balkans and Italy with peoples migration.

The Slavonian Podolic cattle is a variety of Grey steppe cattle and it is very closely related to the Hungarian grey steppe cattle. According to Brinzej and Rastija (1974) the Slavonian variety of the Podolian cattle is

considerably smaller than the Hungarian variety. The withers height of mature cows is on average 127.5 cm, the lenght of body is 152 cm and the depth of chest is 69 cm. The average body weight of the Slavonian Podolic cows is 465 kg. The coat colour of this cattle is light to dark grey. The animals also have very long horns.

In a previous study G a š p e r t et al. (1990) noted a different transferins gens frequency ($Tf_A = 0.346$, $Tf_B = 0.365$, $Tf_E = 0.289$) in the Slavonian Podolic cattle in comparison with other varieties of the Podolian cattle. The authors concluded that created doubt about the breed purity of the exsisting herd of the Slavonian Podolian cattle.

Today it is becoming totally extinct in Croatia. The breeders around the Danube still posses cows numbering a few tens.

In our project of the threatened breeds gene collection formation, which was carried out in 1988, we formed one herd of 20 cows and 2 bulls of the Panonian Podolian cattle.

Buša

According to the archaelogical deposits the Buša cattle seems to have existed in the Balkans since the neolytic age. Today's Buša was probably created by crossbreeding the autochthonous brachyceros cattle and short-horned cattle that the Croats brought with them when migrating to these areas.

The Buša cattle was first time described by A d a m e t z (1892, 1898), as a brachiceros cattle, small in stature.

There are many varieties of Buša breed in Yugoslavia. One of them is Buša from Lika in Croatia. This is the largest variety of Buša in Yugoslavia but still the smallest cattle in Croatia. According to O g r i z e k (1941), Š m a l c e l j and R a k o (1955) Buša from Croatia is 108 to 114 cm high at withers. The body weight of the cows ranges from 180 to 250 kg. An important characteristic of the breed is its plain colour; the coat can be light, the colour of wheat, yellowish-brown, dark brown or black. The head is narrow and oblong, and the horns are small and typically brachiceros.

The Buša breed is a dual purpose breed (milk/meat), but the milk yield is very poor. Cows produce only 1000 to 2000 kg of milk with 4.5% butter fat. Due to the small body weight its fattening capability is also very poor.

In the area of Lika and Dalmatia Buša has been improved with grey and brown cattle. This is the reason why Buša can be found today only in the remotest parts of Lika and Dalmatian Zagora.

We think that total extinction of Buša would be a great loss because of the genotype disappearance which has not been investigated so far by adequate selection methods and thus its importance cannot be properly evaluated. Our opinion is that Buša has its place in the selection programmes for mountainous areas with poor vegetation and bad climatic conditions to which it is very well adapted. Owing to its modest needs Buša can contribute considerably in extremely extensive cattle-breeding.

Grey cattle in Dalmatia

Until the beginning of 20th century only Buša was breed in Dalmatia as autochthonous cattle. Up to World War II Buša was constantly improved with the Oberinntal cattle and sporadically with the Montafon cattle. After the war the grey cattle with combined traits (a cross-breed of Buša and the Oberinntal) was selected as the most adequate for that area.

The grey cattle of Dalmatia is rather similar to the Oberinntal cattle, except for being slightly smaller and giving less milk. The cows are 122 cm high on average and weight 275 kg. They produce 1800—2000 kg of milk with 4% of fat. Their coat is plain, mainly grey but they can also be various shades of yellow and brown. Around the snout and eyes the pigmentation is lighter in colour. The horns are short and light, the hooves are very strong and elastic, which is very important in the karst region where the cattle move. They easily bear high summer temperatures as well as the cold in winter.

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UGROŽENE PASMINE GOVEDA U HRVATSKOJ
(značenje i zaštita)

Sažetak

U Hrvatskoj je 13,8% krava koje pripadaju pasminama, subpasminama i križancima koji su u procesu izgradnje u produktivnije životinje. Imaju sekundarno-komercijalno značenje. Glavninu ovih goveda čine: Istarsko govedo, Slavonsko-Srijemski podolac, buša i sivo govedo Dalmacije.

Istarsko govedo je autohtono. Vjerojatno nastalo migracijom podolskog goveda sa istoka i križanjem s primitivnim govedom u našim krajevima i talijanskim podolskim posminama.

U okviru projekta »Genetski polimorfizni i zbirke gena domaćih životinja u Hrvatskoj« u toku je istraživanje stanja, eksterijera, genetskih polimorfizama i formiranje zbirki »in situ« i »ex situ«.

Slavonski podolac je izrazito ugrožen. U okviru programa zaštite pod kontrolom je par desetaka grla. Srodan je mađarskom sivom stepskom govedu. U njegovom održavanju nužno je suradnja s Mađarskom u okviru DAGENE (Dannubian Assosiation).

Lički tip buše jedini u Hrvatskoj u naglom je nestajanju. Zbog svojih specifičnih pasminskih obilježja, zavređuje da se iskoristi u alternativnim oblicima uzgojnog programa u Hrvatskoj.

Najuspjelije oplemenjivanje buše u Hrvatskoj postignuto je formiranjem sivog goveda u Dalmaciji. Ova subpasmina posve odgovara uvjetima krša i ima značajnu ulogu u budućim programima ekstenzivne proizvodnje mlijeka i mesa u nas.

U okviru programa zaštite ugroženih pasmina goveda u Hrvatskoj navedene četiri pasmine odnosno subpasmine treba sačuvati.

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