Performance review of cattle breeding and selection work in Croatia (cattle identification and milk recording)

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Introduction

The Croatian Center for Selection and Animal Breeding (HSSC) was established by a Government Regulation in 1994 as an institution for work in selection and animal breeding in agriculture.

HSSC is the legal successor of former forms of cattle breeding associations which were for the first time established in 1913, and this work has been continuing ever since.

The main activities of HSSC are the following:

- collecting the data in a central database of registered livestock of farm animals;
- milk recording and breeding value estimation for registered animals;
- cattle identifying and issuing of documents of parentage (pedigree);
- participating in the management of genetic resources (conservation of endangered breeds);
- planning, establishing and carrying out of breeding programmes;
- cooperating with national and international scientific and other institutions to find new breeding methods and procedures to increase the success performance of the cattle breeding programme;
- organising cattle exhibitions, reviewing and auctioning.

HSSC acts throughout the Republic of Croatia. The main executive organisation forms are district units, which are in charge of data and milk sample collections and all other selection work in the field which is congruent to the national law.

Total number and share of cows under control

The total number of cattle and number of cows being controlled in 1997 is presented in the following table:

Table 1. Total number of cattle and number of cows being controlled.

Year	Total number of cows	Number of cows under control		
		Milk recording and registration		Registration
		Ex-State sector farms	Family farms	
1997	233 207	3 602	37 109	25 096
		65 807 (28.21%)		

Source: Annual Report for 1997.

Cattle breeders of quality breeding animals make agreements with the HSSC volunteers on carrying out selection work in herds where rights and obligations are clearly stated.

Employees of district selection units collect data and send them to the HSSC via original documents or electronic media where they are deposited in a central database. Following the requirements, the data process and results are sent back to the breeders. Once a year, the results of cattle breeding and selection work on a national level, are published in an annual report.

The total number of family farms being controlled is 19 160, but the average size of herd is very small (3.25) as presented in the following table:

Table 2. Number and size of family farms in Croatia.

Total number	Number of cows in herd					
	1-3	4-6	7-9	10-12	13-15	16-more
19 160	12 613	4 731	1 125	391	164	136
%	65.83	21.69	5.87	2.04	0.86	0.71

Source: Annual Report for 1997.

The small size of family farms, dislocated small pieces of land, significantly decreases results of cattle breeding and selection work and increases expenses on controlled cows. This is the reason for recommendation that milk recording should be carried out only by breeders with five or more cows. In smaller herds only parentage (calf information) is registered.

Nevertheless, we are making great efforts to ensure that information on production results reaches all cattle breeders.

The main breeds being controlled in Croatia are presented in the following table:

Table 3. Main breeds being controlled in Croatia.

Breed	Number of cows under control	
	Number	%
Simmental	52 499	79.77
Holstein-Friesian	10 291	15.64
Brown	3 017	4.59
Total	65 807	100

Source: Annual Report for 1997

Milk production in standard lactation (305 days) of herd book cows is presented by breeds in the following table:

Table 4. Average milk production per cow in standard lactation (305 days).

Breed	Standard lactation (305 day)				
	Milk, kg	Fat, kg	Fat %	Protein, kg	Protein %
Simmental	3 740	113	3.82	121	3.28
Holstein-Friesian	5 580	200	3.58	163	3.02
Brown	3 052	109	3.57		
Average	4 143	155	3.74	122	3.27

Source: Annual Report for 1997

In 1997, 19 655 lactations were processed and the average production was 4 143 kg of milk with 3.74% milk fat and 3.27% milk proteins. In the area of performance control about 90% of cows were recorded by method AT (family farm). The rest, about 10%, were recorded by method B (ex-State farm). Control assistants according to a monthly programme have to be present on milking and on regular measuring of the quantity of milked milk and take the samples of milk from cache cow for analysis following instruction for taking and conserving samples. HSSC is in charge of the super control of assistants in the field.

During 1997, 179 269 samples of milk were analysed in HSSC laboratories on MILKOSCAN 605 equipment for quantity of milk fat, milk proteins, dry matter and lactose.

To fulfil the criteria for the Special Stamp of ICAR we will establish a neutral laboratory, which will be supervised by a reference laboratory.

For the service carried out during cattle breeding and selection work in herds (control of production, analyses of finished lactation and estimation of breeding values and issue of pedigree), breeders pay bills according to the current price list.

Work expenses of HSSC are subsidised by the Government budget by 50%, so that the price of service is decreasing to the breeder by a stated percentage.

Cattle identification

Cattle identification is the basis and obligatory part for all levels of cattle breeding and selection work. Cattle are marked in two ways; permanently (tattoo) and with eartags. The life number in the total cattle population may appear only once. The life number consists of eight digits; the first two are marking applied district and breed and the remaining six represent the current number of each animal. The current number without sign of district and breed is tattooed on the right ear until the herd book of the father is tattooed on the left ear.

The recommended yellow plastic cartage is put on the right ear. The delivery of the eartags is carried out by the HSSC and is supervised by the Ministry of Agriculture and Forestry. The subsidised price of selected eartags together with service of marking is paid by the breeder.

The male and female breeding offspring is recorded in a registration and breeding book within thirty days after birth and in the central database within sixty days after birth.

For better data transmitting and processing, our tendency is to connect the central database with district units by modem. This will give us the possibility to send information back to the breeders earlier.

Breeding value estimation

Since the 1990s, Croatia has had a national programme for breeding value estimation. The data of lactation are used for estimating the breeding value of each animal under milk control and for breeding value estimation of bulls in progeny testing of milk. The breeding values are recorded for milk yield, fat and protein yield as well as for fat and protein percentage. A BLUP SIRE MODEL will be used until the end of 1998 when we should change to a BLUP ANIMAL MODEL.

References

Annual Report for 1997.