

BREEDING POLICY IN LIVESTOCK PRODUCTION IN CROATIA

P. Caput, I. Karadjole

Abstract

Croatia has a hundred year tradition in raising purebred stock. Cattle breeding and pig breeding have greater significance than the breeding of sheep goats, poultry and horses. There are separate livestock breeding programmes for large populations (Simmental cattle, pig breeding, Lipizaner horses), while the genetic improvement of other breeds is based on the methods presently applied in European countries and in North America. Livestock breeding is founded on private enterprise. Private breeders are getting together and setting up their own independent organizations. At the state level, the breeding procedures are coordinated by authorized professional institutions.

Key words: autochthonous breeds, Livestock Breeding Association, Herdbook, performance control, breeding programme, field production, self-help organization

Introduction

Croatia has a long-standing tradition in livestock breeding. It was in the late 19th century, while Croatia was part of the Austro-Hungaria Empire that systematic breeding programmes were set up for imported purebred cattle (from 1898), and later on for other species. During the period from 1919 to 1990 Croatia carried out its own, independent breeding programmes.

With the introduction of artificial insemination (1948) and of a comprehensive national programme (1974) the quality of livestock breeding also improved. The experience so far gained in livestock breeding has made possible further advances in this field.

Breeding activity

Livestock breeding in Croatia began to be carried out in a more organized and systematic way in the first decade of the 20th century. It was carried out on purebred cattle imported from Central European countries from the end of the 20th century on and also by means of the systematic merging of low productive autochthonous breeds, especially the Busa.

The first livestock breeding association of the Pinzgau breed was founded in 1904.

Faculty of Agriculture, University of Zagreb, Croatia
Veterinary Faculty, University of Zagreb, Croatia

and of the Simmental in 1906 (Herdbook, 1939). There has been an institution for breeding and selection functioning since 1913 in Croatia. Until World War II it was called the Union of Associations, and had direct links with the breeders, members of the associations. After World War II, it became a semi-governmental institution, largely controlled and run by the government institutions. An organization to be set up in the future should be authorized to act as a state institution of public interest, and should represent the state in international institutions (ICAR, Interbull, Simmental associations, HF association, etc.) and also carry out a number of joint activities that are of interest to breeders. *The existing Livestock Breeding Centre in Zagreb, as the successor of the Federation of Croatian Livestock Breeding Associations, represents the groundwork for the setting up of a modern institution for raising and breeding livestock in Croatia.*

Productivity control is carried out in accordance with the internationally acknowledged methods used in cattle, pig, sheep and goat breeding. Milk yield control was first introduced in Croatia in 1904.

Since 1993 Croatia has been a member of ICAR. Milk yield control on 13% of the cows is carried out in accordance with the AT method.

The results are used for bull progeny tests, for the selection of bull dams and also for technological purposes, as farmers get feedback in the form of processed three-monthly and annual milk yield results. Several large flocks of sheep and herds of goats are regularly subjected to milk yield control. As regards productivity control, the greatest difficulty is shortage of funds. Substantial financial subsidies from the budget are unpopular, while the interest of livestock producers and the processing industry has so far not been reflected in any form of financial subsidies. In view of the present circumstances and the uncertainty of breeding material markets, livestock producers are not prepared to set aside money to cover the costs of productivity control. Attempts are made to rationalize the controllers' work along the lines of that in some West European countries, (i.e. the Netherlands).

The milk yield control results are processed in the central information system and published annually.

The breeding programmes have been carried out as independent, national programmes since 1974. Until that time, for a period of almost 100 years, breeding and improvement was largely based on regular imports of livestock from abroad (cattle from Switzerland, Germany, Austria, the Netherlands, USA, and Canada; horses from Germany, Austria, Hungary and Belgium; pigs from Great Britain and the Netherlands; sheep from France, Germany, Italy and Finland; and goats from Switzerland, France and Italy).

The populations of the major livestock breeds in Croatia are relatively small (in 1992 there were some 220,000 Simmental cows, active AI+A4; 7,500 Holstein cows; 16,000 mares and pregnant fillies, 176,000 sows and pregnant gilts, 14,000 ewes).

In view of the size of the populations, the need for separate national breeding programmes may be brought into question. *It is difficult to ensure a desirable genetic improvement and the implementation of the programme is costly.* It seems that it would be more reasonable to set up close, meaningful links with other leading breeders, especially in the neighbouring countries. *Independent, national programmes are only*

justifiable for the breeding of Simmental cattle and pig breeding. They can be successful only if there is a regular arrangement for the exchange of the sire semen with the leading breeders. A small number of animals can compensate for the non-existence of large herds (farms) in which good genetic effects can be obtained. As for other species and breeds it is advantageous to import genetic material from abroad, through the import of high quality breeding stock.

Since 1974 the Simmental cattle breeding programme has been going on successfully, as well as the Holstein programme. The former has been along the lines of a conventional breeding programme, and the latter has followed American models. A certain amount of bull semen has been regularly imported, allowing for the regular supply of some of the leading breeds. The Brown Swiss breeding programme is closely linked with similar programmes in Slovenia and Austria. Modern procedures in the evaluation of the breeding value of cows and bulls are routinely applied (BLUP, performance and progeny tests). The programme largely covers the dual purpose breeds (Simmental and Brown Swiss), then the Holstein dairy cows, and to a lesser extent beef breeds (on the marginal pastures using the suckling cow system, and to a larger extent in cross breeds with milk breeds).

Croatia no longer has Busa cows but instead crossbreeds with a different percentage of genomes. The only autochthonous breed is the Podolian cow, which is threatened with extinction (in the Istria and Slavonia - Srijem regions). One of the biggest problems, not only when breeding is concerned, are the extremely small farm herds consisting of two cows on approximately 2.9 ha of arable land. On the other hand, the large so-called socially- owned farms are not very productive, either. The solution lies somewhere in between. The high degree of dispersion of cows and the low productivity (2,700 l per cow) make it difficult to properly control productivity and to reliably assess the breeding value.

In 1993 a horse breeding programme was drawn up in Croatia. It covers the two main national breeds: the Croatian Cold blood and the Lipizaner. A central Stud-book is kept, and the breeding centres are Krizevci (the Cold-blooded) and Djakovo (the Lipizaner).

The programme also covers the Holstein, the Trakener, the Trotter, the English Thoroughbred and the halfbred and also the Arab.

The breeding programme also envisages the construction of facilities for horse meat production (the Croatian Cold-blooded), for the top sports requirements in coaches (the Lipizaner) and in other events (other breeds).

The pig breeding programme envisages the construction of production facilities for the largest possible quantity of meat with the least possible fodder consumption. The best known are the beef breeds, the Big White, the Swedish, German and Dutch Landrace and the hybrid pig. Valid testing can be carried out on the large pig breeding farms. In the private sector pig breeding is highly fragmented and the number of high quality pigs is negligible. In view of the economic significance of pig breeding in Croatia, the programme is expected to meet certain requirements, especially as regards the content and quality of pork. The results of sow productivity and boar tests are processed in the central information system and published annually.

As for sheep and goat breeding, there are no consistent national breeding pro-

grammes. This type of livestock breeding is not so well developed, it is mostly of the extensive type, found on small farms. There are a small number of big farms with several hundred sheep and goats, connected with the milk-processing industry, and they have separate breeding programmes.

Field production of sheep covers the Pramenka, the crossbred Pramenka (sheep found on the islands and on the northern Adriatic coast), and to a lesser extent the purebred varieties (the Wurtemberg, the Sardinian, the Avassi...) as part of the intensive agricultural production programme.

In the mountainous regions and along the northern Croatian Adriatic coast goat breeding is based on the Balkan variety. More recently, purebred varieties such as the Sanska and the Brown Alpine goat are imported and bred on some of the small farms. The purpose is to create the most effective cheese-producing variety.

A significant place in the livestock-breeding is given to sheep and goat breeding, since Croatia has large open spaces (in the mountainous and karst regions), where the sheep and goats can compete with any other types of stock.

The introduction of medium-size flocks and herds on small farms is the model of sheep and goat breeding of the future.

Reproduction

To ensure advances in breeding and livestock production it is necessary to have a good livestock reproduction programme. That is why Croatia attaches great importance to measures for promoting livestock reproduction. There are three centres for artificial insemination (Križevci, Osijek and Slavonski Brod), involved not only with the production and distribution of sire semen (bulls, mares, bucks, rams and boars), but also with curbing sterility and the introduction of new methods in the field of biotechnology. Artificial insemination was first introduced in Croatia in 1948, and bull progeny tests in 1956. The Centre for Livestock Reproduction in Croatia coordinated all reproduction activities. In order to set up a modern livestock breeding and production organization, it is necessary to integrate the activities of the Livestock Breeding Centre and the Livestock Reproduction Centre.

Self-help organizations

The existing organizational structure for livestock breeding and reproduction was quite appropriate for the earlier system of planned economy. It seems, however, that it does not fit in with the market-oriented economy. It does not allow for competition, business-like behaviour and the integration of market interests and, furthermore, it does not express the interests of livestock producers. *There is an obvious need for an Association of livestock breeders to be set up at state level*, and for companies authorized to trade (and import) breeding material. Furthermore, there is the need for production control associations with state acknowledged laboratories, which would deal, among other things, with insemination. The activities of such breeders associations would include, among other things, herd-books, the assessment of breeding values and the implementation of breeding programmes.

Planned Changes in the Organization of Breeding Activities

In the process of the establishment of new, more effective associations and institutions, and the transformation of the existing ones, special emphasis needs to be laid on the following:

- finding ways of activating breeders to take a more active part in developing the kind of associations and activities that would meet European standards and requirements;
- having competent and creative people involved in livestock production, breeding and reproduction, people who will serve the interests of breeders;
- developing an effective organizational network of state and county associations and institutions that would only deal with matters of general interest; drawing up breeding programmes at a national (state) level, central herd-books, a central system for production control, livestock identification, testing, cooperation, membership and agency services in other countries, while all other organizations would be set up at the county level.
- ensuring that all matters of general interest at the state level be financially supported by the State, while all local activities at the county level be financed by breeders and companies which make a profit through livestock breeding and trade.
- during the process of transformation of livestock production introducing methods and standards, which will fully meet the requirements for Croatia's admission to the European Union. The standards and criteria need to be defined in the new laws and regulations on livestock breeding, which will replace the 1979 Law on Measures for the promotion of Livestock Breeding. The new legislation needs to regulate the following issues:
 - criteria for issuing permits to set up breeders associations, institutions for keeping herd-books of breeding stock;
 - criteria for issuing permits for setting up and running insemination centres;
 - criteria for entering animals in the herd-books;
 - methods of productivity control;
 - obligatory forms of cooperation between the Insemination Centre and the Livestock Breeders' Association with a view to their inclusion in the breeding programmes;
 - principles for trading Herd-book animals and biological material.

An advisory body at the Ministry for Agriculture and Forestry would help to ensure a well-conceived and effective breeding policy in Croatia and provide general guidelines for livestock production.

REFERENCES

1. Caput, P., I. Jakopović, I. Karadjole, I. Hodak, D. Viduč, B. Mikulić, (1991.): Program gojidbenog stvaranja goveda u Hrvatskoj. Poljoprivredni centar hrvatske, Zagreb (Spec. Issue).
2. Caput, P., M. Tadić, (1994.): An overview on animal production organizations in the Republic of Croatia. Workshop on "East and Central Europe Livestock", Berlin.
3. Glodek, P., M. Bichard, (1994.): Analysis of the structure of pig breeding organisation in EU countries. Workshop on "East and Central Europe Livestock", Berlin.

4. Malafosse A., F. Schmidt, (1994.): Analysis of the structure of cattle breeding organization in EU countries. Workshop on "East and Central Europe Livestock", Berlin.
5. Nygaard, H., (1994.): Tasks of self-help organizations in cattle and pig production. Workshop on "East and Central Europe Livestock", Berlin.
6. Pottebaum, P., (1994.): Tasks of self-help organizations in production and marketing. Workshop on "East and Central Europe Livestock", Berlin.
7. Tadić, Vera, M. Tadić, P. Caput, (1993.): The strategy for the revitalization and development of Croatian stock-breeding. Third Round table on Livestock production on Eastern Europe, Warsaw.
8. xxxxx Transfer from centrally-planned to market-oriented economy. IDF, spec. issue u 9203, Vienna.
9. xxxxx Uzgojni program u svinjogojstvu Hrvatske. Grupa autora pri Stočarskom selekcijskom centru u Zagrebu (u postupku donošenja), 1993.
10. xxxxxx Uzgojni program u konjogojstvu Hrvatske. Grupa autora pri Stočarskom selekcijskom centru u Zagrebu (u postupku donošenja), 1993.
11. xxxxxx Workshop on "Research strategy for animal production in Europe in the 21 st century". (A.J. van der Zijpp, J. Boyazoglu, J. Renaud and C. Hoste, Wageningen, 1993.

UZGOJNA POLITIKA PROIZVODNJE STOKE U HRVATSKOJ

Sažetak

Uzgoj plemenitih pasmina stoke u Hrvatskoj ima stogodišnju tradiciju. Govedarska i svinjogojska proizvodnja su značajnije grane, nego ovčarstvo, kozarstvo, peradarstvo i konjogojstvo. Nacionalni uzgojni programi primjenjuju se samostalno za veće populacije (simentalac, svinjogojstvo, lipicanac), a genetsko unapređivanje drugih pasmina u čvrstoj je vezi s vodećim uzgojima u europskim zemljama i Sjevernoj Americi. Temelj uzgoja stoke predstavljaju privatni uzgajali. U procesu je njihovo poslovno organiziranje u samostalne organizacije. Na državnoj razini uzgojne postupke koordiniraju ovlaštene stručne ustanove.

Priljeno: 9. 3. 1994.