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A Successful Case Study: the Organization of Cows Milk Production on Family Farms

B. Krstic', Faculty of Agriculture
B. Berisavljevic', Institute of Applied Sciences in Agriculture
N. Ristic, Agricultural Station

I – Introduction

Milk production was chosen as the subject of our investigation because of its special importance in our country. In addition to our high quality milk products, milk production has other significant roles. It provides some industries with raw material, stimulates the development of several sectors of the industry involved in milk production input, intensifies plant production, makes it possible for arable land to be more rationally utilized, increases employment, improves farm management conditions by making possible a much more even inflow of circulating capital and the reduction of fluctuations in total agricultural production which in turn would influence the demand-supply balance.

Natural and economic conditions have contributed to the fact that in the regions investigated in this research, cattle of combined productive ability (milk and beef) are reared. As a result, efforts are combined to improve milk production together with beef production. These activities constitute an important part of the work undertaken by the Agricultural Extension Service. As a result, it is difficult to give a complete evaluation of the success and failure if this organization without considering the results achieved with regards to the improvement of milk production.

II – The Successful Solution: the Village of Velika Ivanca

This village is located at about 60 km south of Belgrade. It extends on the south-eastern slopes of the Kosmaj mountain. It occupies an area of 3,200 ha including 2,526 ha represents of arable land. In this village they are about 600 families of which over 500 are agricultural. About 1,500 heads of cattle are reared in this area. Recorded evidence takes into consideration over 600 cattle.

Until 1933, the native breed of cattle, 'busha', was reared in this region. That year, the simental breed was imported from Switzerland marking the beginning of an effort to improve the genetic structure of the cattle population. The Second World War, however, disrupted these activities.

After the Second World War, a cooperative for animal husbandry was established in Velika Ivanca for continuing the improvement of the genetic potential of cattle. Tested bulls were used for natural fertilization.

In 1953, artificial insemination was introduced and could be done at the veterinarian station in Mladenovac. In 1977, the village had its own veterinarian station with skilled staff and provided milk producers with artificial insemination and other vital services.

As from 1956, the experts from the agricultural station in Mladenovac (Regional Agricultural Extension Service) played an important role in the activities of this region. These activities comprised the following: organization of exhibition for cows and heifers; selection of cows needed for the production of bulls; introduction of high yielding sorts and of new varieties of fodder crops; improvement in the preparation of conserved bulk feed; organization of the continual production of green feed; improvement in the composition of cattle feed; improvement in hygiene and other technical measures as well as the conditions of cattle stalls.

As from 1975, the relationship between agricultural cooperatives and milk farms in the village of Velika Ivanca changed considerably. This change was particularly marked in the area where milk was purchased and provided farmers with production material.

A special stimulus to the development of family milk were provided by the so-called "Green Plan", a program organized by the state in 1975. Under this program a significant fund was made available for investment in agriculture. Family farms were able to make use of this fund with the cooperation of agricultural cooperatives. The cooperative in the village of Velika Ivanca displayed a great deal of initiative and made it possible for many milk farmers in this village to obtain credit at favourable rates for the construction of stalls and the purchase of heifers and agricultural equipment and machinery. The economic position of a considerable number of farms was thus improved. This also influenced to a greater measure than before the younger generation to choose agriculture as their profession.

Today, as a result of the above mentioned activities, a large number of family farms in this village has concentrated on the production of cows milk. Many of them have five cows and more, and the average milk yield is of 4,000 liters/cow/year. Some of these farms are known for producing high quality heifers. Producers from the village of Velika Ivanca have won a number of awards and other forms of recognition at exhibitions and fairs. Special mention should be made of the gold medal won in 1985 at the well known International Agricultural Fair in Novi Sad, Yugoslavia.

From among a large number of milk producers, special mention should be made of the Tosakovic family. In 1956 this household owned 6.5 ha of arable land and 4 milk cows. Today this farm has 15.8 ha of arable land, 24 milk cows, modern stalls equipped with milking apparatus, cooling system, silage silos of 300 tons capacity, a barn of 800 m³ capacity, two tractors with all the necessary accompanying machinery for ploughing, silage combine, haymaker, and a universal combine.

In 1987 this farm produced 93,000 kg of milk with an average production of 5,500 kg per cow, with 4.05% milk fat. This level of production was a record for Yugoslavia among private farmers. In 1991, for the production of 16 high quality heifers of simental breed, this farm was awarded the title of Champion.

The high level of success experienced in this region can be attributed to the following favourable conditions:

- a long tradition of cattle rearing,
- almost 6 decades of experience in the upgrading of stock – which is passed on from one generation to another by milk producers within the family –,
- producers' readiness to accept and apply new techniques and technological innovation with regards to the organization of production,
- integration of the activities of the agricultural extension service, the veterinarian service and agricultural cooperatives as economic partners of family farms,
- measures implemented in the framework of agrarian policies which extended significant economic support.

This success should not be the reason for the expression of too much satisfaction either on the producers' or other participants' part in this process. Such a position contributed, first of all, to the fact that for achieving the above mentioned results, a long period of time was necessary. This imposes the need in the future for the achievement of similar results in a shorter period of time. Apart from this, a current consideration of these farms reveal that there is as yet no satisfactory solution to a number of vital questions, which can determine the course of further development. Examples of such questions are:

- Is the further intensification of milk production economically feasible, and if so, under what condition, and to what level?
- It is necessary for dairy farms to be specialized (producing only milk) or diverse (producing milk, heifers and beef). Or under which conditions one or the other solution would be favourable?
- What is the optimum combination of field crops and animal production on these farms?
- How to buffer the economic shocks that from time to time affect production?
- In which direction should growth on these farms be channelled?

In order to find answers to the above mentioned and other questions, further detailed research is necessary.

III – A Case of Unsuccessful Solution: the Milk Plant in Kraljevo

Kraljevo is a town in the central part of Serbia. It is located in a region that is particularly favourable for animal farming. Milk production in this region is based on the rearing of cows of simental breed. Milk production is undertaken by small family farms of 1–3 cows. The milk plant in Kraljevo is supplied with milk produced on these farms. The capacity of the milk plant is 50,000 liters of milk; the milk plant has to contact over 5,000 farms daily. The average quantity of milk sold per farm does not exceed 15 liters. Such a large number of small milk producers create considerable organizational and financial difficulties.

In an effort to alleviate these difficulties, the experts from the milk plant decided to undertake measures likely to change the breed of milk cows reared, by introducing these cows with a genetic potential for producing more milk, and in so doing facilitate the increase in the quantity of milk that can be sold by a single farm. In this way the number of farms with which the milk plant must be in contact, in order to secure its supply, would be greatly reduced.

The realization of this project began in 1985. The milk plant bought 90 cows of holstein-friesian breed and distributed them among farmers, on condition that those who receive the cows pay for them by delivering 5,000 liters of milk to the plant. In the majority of cases farms accepted only one cow; in exceptional cases, two.

This project did not give the expected results. A number of problems arose with regards to: the health condition of the cows after giving birth; the unskilled milking of cows, the lack of understanding of the basic principles of correct feeding, the lack of experience on the part of producers to uncover the occurrence of "silent estrus", the low level of milk production—about 3,000–5,000 kg of milk per lactation. In addition, producers exploited these cows for a shorter period than expected, i.e., an average of 2 years. After culling, farmers lost all interest in rearing cows of this breed.

The failure of this project was in particular due to the following :

- inadequate skill and material readiness of producers to undertake the rearing of specialized breed of milk cows,
- inadequate interaction between the local agricultural extension service and regional extension service, as well as the veterinarian service,
- insufficient interaction between the local extension service and producers, particularly in the period of adjustment of cows to new conditions and of producers to the needs of the new breed.

The unsatisfactory consequences of the project was felt by all the participants involved: the milk plant spent a lot in investment capital and failed to solve the above organizational and financial problems; farmers invested great effort and capital in production and did not realize the expected financial results; the reputation of the local agricultural extension service was brought into question.

