

## THE POSSIBILITIES OF ORGANIC FARMING IN VOJVODINA

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### ABSTRACT

Organic livestock farming needs a balance between ecology and economy. The organic husbandry are a new possibility for livestock production in Vojvodina. Marketing of produced animal originated products became more popular, and it is organized by farmers themselves, or by their associations. Organic livestock farming in Vojvodina – Northern region of Serbia, is at its very beginnings. The present paper describes the actual situation in organic farming, and possibilities of its improvement. The essential systemic unit is the farmstead which presents a base for organic farming. From the environmental point of view there are several factors like surroundings and landscape which determinate the way of farming. In some ways big differences could be observed on the right and left side of the river Tisa. The quality of soil is determinative. In Banat region we could find mostly pastures and meadows which are suitable for grazing. The conventional, extensive animal breeding – sheep and goat milk as well as the lamb production could be preferred. On the right side of the river Tisa, Backa is the intensive agricultural region with good arable land, therefore it is very suitable for indigenous pig breeding, using famous Mangalica pig. If breeders' demand will appear in near future, a nucleus of Mangalica breed could be established. Biodiversity of poultry breeding depends mostly on the traditional poultry production and the gene conservation programmes. Based on production guidelines, organic livestock farming in Vojvodina has set the goal of establishing environment - friendly production, sustaining animals in good health, realizing high animal welfare standards, and producing high quality products.

**Keywords:** organic livestock farming, farm-stead, breeds,

### INTRODUCTION

The organic livestock farming in Vojvodina – Northern region of Serbia, is at its very beginnings, The essential systemic unit is the farmstead, which presents a base for organic farming, (SZÉLL AND LENGYEL 2011). On the other hand farming on farmsteads is specific for the region. This form of agricultural activity means that the farmers, their stock and cultivated plants coexist in their natural environment. This type of farming makes ideal conditions for producing organic food of extra quality, (PAVLOVSKI AND MASIC 1990). Animal husbandry on farmsteads has hundreds of years of tradition, but as old farmsteads were left behind and intensive systems appeared in all branches of agriculture, that type of farming reached its critical minimum (YAMADA, 1996). Nowadays, trends that promote environment and health oriented products and looking for sources of sustainable energy get more and more popular, and open new horizons for the few farmsteads left in our region (PAVLOVSKI ET AL. 1992). From the environmental point of view there are several factors like a surroundings and landscape which determinate the way of farming. In some ways big differences could be observed in the region, especially on the right and left side of river

Tisa. The quality of soil is determinative. In Banat we could find mostly pastures and meadows which are suitable for grazing, while the Backa is the intensive agricultural region with good arable land. The third part of Vojvodina - Srem is an rolling area used mostly for fruit and wine production.

## DISCUSSION

Vojvodina is an autonomous region with 1.747.000 ha arable land. Pastures and meadows are 141.000 ha, which presents appropriate conditions for both agricultural farming: conventional and organic.

**Potentials for Raising Organic Poultry on Farmsteads.** The breeding of indigenous poultry breeds can only provide the raising of genetic resource for poultry farming. These are breeds which have kept some important characteristics that enable allow them living under their natural environment. Thus, poultry raising on farmsteads adds to the scale of organic products, plus this type of farming represents the most efficient way of gene preservation. Genetic resources of domestic poultry are threatened by the decreasing of living area due to the decreasing number of farmsteads, but, in this respect, hybrids and artificial breeds pose a threat, too – being that the latter can cause the disappearance of some characteristic features. The most important threatened features of autochthonous breeds in our region are listed below: ability for natural incubation, flying ability, offspring protection, hiding at night, protection of territory, and laying eggs in nests and their protection. As the above mentioned characteristics disappear, the potential for organic production decreases as well, because animals in their natural environment become get more easily preys of predators or they cannot bear the natural conditions (wind, rain, snow, extreme temperatures, diseases (PAVLOVSKI ET AL. 2006). Sorts and breeds of poultry still present in our region (SUPIC ET AL.1997).

**Domestic chicken:** In Serbia an indigenous sort is the Somborska kaporka (crested chicken from Sombor), Banatski golosijan (naked neck from Banat), Svrljiska kokos (chicken from Svrlje), Kosovski pevac (longcrower from Kosovo).

In farmsteads there are crested chicken, easter egg chicken and naked neck of mixed genetic origin. Characteristic colours are red, white, speckled, while black is rare and buff is almost extinct, so preservation of the latter is a very challenging task – to save genetic resources. Thanks to Brama Sussex sorts, Columbian coloring is quite often. Today's Vojvodinian consumers prefer yellow skin colour, though earlier white skin Sussex breeds were also widespread.

**Guinea-fowl:** Their number has been growing recently, thanks to their tasty meat and good food absorbing ability, they are useful as “organic pesticides”, they can hide and protect themselves – thanks to all these characteristics, they are popular poultry on farms. In our region the grey, the blue-grey and the white coloured is more frequent, black type is rarer, its genetic resource should be saved. One of the “musts” of the gastronomy throughout this region is about the wedding soup, which has to be made of domestic chicken and guinea-fowl.

**Turkey:** The domestic turkey has a very good disposition for natural incubation, and it raises its offspring with great care. This is why sometimes they serve as natural incubators

for other breeds of poultry on farmsteads. The classical domestic turkey's sexual dimorphism makes possible natural mating, which means that on farmsteads natural reproduction is possible, too. The most frequent colour is red and dark brown, but there are grey, white and mixed coloured turkeys, as well. The smaller, but very resistant and brisk red turkey can also be found, but in a terribly small population. The latter is called indigenous Bosnian turkey in our region.

**Domestic goose:** In our region the Hungarian, the Slovak and the Rumanian national communities all have their own indigenous breeds of goose, but these can be found only in small villages, in old households. White frilled type is extinct in our region, but in Transylvania (Rumania) they are present in sustainable populations. Traditional breeds are almost totally replaced by meat-feather or meat-liver breeds, only well experienced poultry raiser can notice the slight differences between the traditional and the new breeds on farms. However, genetic differences considering the above mentioned characteristics are huge.

**Domestic duck:** Nowadays, domestic ducks are present in a very small number on farmsteads, crested and whiskered sorts can be found rarely, and their genetic protection is a priority. In a healthy environment, its raising is easy, it is a resistant breed, its meat is very tasty, it is a delicacy on festal tables.

**Muscovy duck:** duck breed typical for farmsteads. It is very useful for catching flies around stalls and hutches. Thanks to its good nesting, incubating, hiding and offspring raising capacity, it is a popular breed on farmsteads, where its extensive raising is possible with minimal loss and feeding costs.

Combined farming is characteristic for ecological farmsteads, where poultry of mixed genetic origin can be found. There is no official data on poultry breeds regarding their number, but according to observations in the field one can state that the most numerous poultry breed is domestic chicken, then guinea-fowl, turkey, domestic duck and muscovy duck follow, while goose is the least common poultry of our farmsteads.

**Organic pig breeding possibilities.** In the middle of the 19th century various breeds of curly pigs were raised in the Balkans as far as the mountain region of Hungary. This breed grew in to Mangulitsa pigs which became the exclusive breed in the region where corn was grown. Primarily the forests full of acorns and beechnut and spread on the vast area where these pigs were being fattened, (HORN, 2000). As a result of wide spread use of corn that resulted in turning forests and pastures into fields, the conditions for keeping and feeding this breed has been dramatically changed. So today in northern Serbia we have nearly 160 Mangulitsa in three varieties: Blond, swallow bellied and red mangalitsa. Extremely strong constitution, resistance to weather conditions and conditions of keeping and strong hair are characteristics of this breed. Analysis on meat quality of Mangulitsa breed showed that it contains rather high amount of proteins, acceptable amount of fat and that it belongs to the group of meat with the lowest amount of cholesterol. Nutritious value of samples showed that 100g of meat contained 14,99-21,84% of proteins, the percentage of fat in fresh meat was 13,44-33,25%. Mangulitsa meat belongs to the kinds of meat containing higher amount of proteins compared with the samples taken from pigs from our area. The amount of proteins goes from 9,5-18,3g with the exception of steak where it is 21,5g. When cholesterol is in question the research showed following results: 42,5 mg in pork chop, 45,07 mg in leg, 47,36 mg in neck, (VUCKOVIC, 2006). Similar results were reported by HOLLÓ ET AL. (2003), when in two experiments, the meat and fat quality as well the fatty acid composition of 22 hungarian Mangulitsa pigs (barrow) were examined.

**Organic sheep production – Tsigai breed the Pannonian sheep.** According to the organic farming in Vojvodina the most popular breed is Tsigai. The lowland sheep breed originates from Asia Minor, from where it spread to Eastern Europe. In Serbia expanded from Rumania in the 18th century. Because of good adaptability to the lowland conditions, Tsigai as the Pannonian Plain breed, is grown in Rumania, Hungary, part of Bulgaria, and in our country in the flat regions of Vojvodina and Serbia. They are also valuable for milk, meat and wool, (KÖNYVES, 2011). The sheep production are concentrated in north and central Banat region, where the semi-extensive system are in use. Until March the animal are kept indoors, feeding with fodder, forage and hay. From April they are on the pasture. The length of the suckling period is approximately 50-55 days. After this the ewes are housed in large groups, and milked twice daily. Milk production per lactation period also varied. MITIC (1984), recorded production of 110 – 120 litre. Ewes are milked mostly by hand. Tsigai lambs at the age of 90 days reach the weight of 30 kg. Number of Tsigai sheep in Vojvodina are between 14000 – 15000.

**Autochthonous cattle breed - the Podolian cattle.** Belong to a group of grey, long-horn cattle, with large body size, good strength and robustness and are intended primarily for work; Body weight of cows is between 420 and 550 kg, and of bulls from 650 to 900 kg. Until recently in Serbia there were no breeding programmes for indigenous cattle breed, since the major method of breeding is cross-breeding with more productive, imported animals, (BOGDANOVIC ET AL. 2011). The Podolian cattle are very important as a resource of genes for disease resistance, robustness and other important traits that are not characteristics of exotic breeds. In addition, Podolian cattle may have significance for low input or traditional beef production systems.

According to the review that have been carried out, it could be concluded that the organic livestock farming in Vojvodina, is not a production method to solve all problems in livestock production. But first and last it could be summarised that the autochthonous breeds in Northern-Serbia have a good biological base not only for the genetic improvement but also for sustainable farming and utilisation. On the other hand the breeding, keeping and utilisation of the indigenous cattle, sheep, pig and poultry can be interesting for those farms which are determined not only for low input livestock production systems but also for some other additional forms of activity such as, among others, the rural tourism.

## REFERENCES

- BOGDANOVIC, V., PERISIC, P., DJEDOVIC, R., STOJANOVIC, S. (2011): Sustainable Breeding, Farming And Utilisation Of Autochthonous Cattle, Sheep And Goat Breeds In Serbia. RBI 8th Global Conference on the Conservation of Animal Genetic Resources Tekirdag, Turkey. Proceedings of Conference p. 59-65.
- HOLLÓ, G., SEREGI, J., ENDER, K., NUERNBERG, K., WEGNER, J., SEENGER J., HOLLÓ, I., REPA, I. (2003): A mangalica sertések húsminőségének, valamint az izom és a szalonna zsírsavösszetételének vizsgálata. Acta Agraria Kaposváriensis Vol. 7 No. 2, 19-32.
- HORN, P (2000): Állattenyésztés 3. Publisher: Mezőgazda Kiadó Budapest. ISBN 963 9239 51 8.
- KÖNYVES, T., VUKOSAV, M., IVANC, A., BOŠKOVIĆ, J., MIŠČEVIĆ, B. (2011): Production and composition of milk from Tsigai sheep Breed in Vojvodina. „Traditions, Innovation and Sustainability” Vol. 6. (1) supplement. p. 196 – 200. ISSN 1788-5345130.
- MITIC, N (1984): Ovcarstvo. Publisher: Naučna knjiga Beograd.

PAVLOVSKI, Z., MASIC, B. (1990): Mogućnost racionalizacije ekstenzivnog sistema i poluintenzivnog sistema držanja živine sa aspekta proizvodnje prirodne i zdrave hrane. Poljoprivreda. p. 348-349.

PAVLOVSKI, Z., SMILJANIC, R., MASIC, B., RANKOVIC, M., HOPIC, S. (1992): Uticaj sistema proizvodnje na porast i randmane trupa pilića čistih rasa i hibrida. Poljoprivreda. p 48-55.

PAVLOVSKI, Z., LUKIC, M., SMILJANIC, R., SKRBIC, Z. (2006): Konformacija trupova pilića. Biotechnology in Animal Husbandry, p.3-4, 83-97.

SUPIC, B., MILOSEVIC, N., KONJEVIC S., PERIC, L., MITROVIC, S., DIMITRIJEVIC, P., SAVIC, D. (1997): Očuvanje autohtonih rasa živine u Vojvodini. Savremena poljoprivreda, 3-4, p. 181-186.

SZÉLL E. & LENGYEL L. (2011): Sustainable farming at farmstead. Publisher: Cereal Research Nonprofit Ltd. and Association of Gardeners Senta. ISBN:978-86-84671-28-0

VUCKOVIC, B. (2006): Svinjarstvo u Srbiji u XXI.veku Povratak Mangulici. [www.stocarstvo.com](http://www.stocarstvo.com).

YAMADA, Y. (1996): Who takes care of village backyard poultry improvements in tropical and subtropical regions. XX. Poultry Congress. Proceedings. Vol.1, p. 391-393, New Delhi.