

## STUDY ON A MIXED ORGANIC FARM ON THE TERRITORY OF NITCHIDORF TIMIS COUNTY

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**Abstract.** *The essay aims for the study, the conditions of ecological exploitation for identifying the needed measures for perfecting the way of organization of the ecological agricultural exploitation. The first part of the essay contains theoretical data referring to the studied theme (notions and ecological agriculture, the studied zone's physical and geographical conditions, etc) followed by data referring to the purpose and the targets of the essay. In the last part there are presented the results and the discussions of the research. Studying the agricultural exploitation, Daricius Loredana PFA has in mind raising the animals in an ecological system for obtaining products for consumption, at a high quality, certified by law enforcement and corresponding with the most demanding requirements of the market. On the farm the obtained production from the cattle is destined for food and selling milk and milk products. (cottage cheese, cream, butter and milk jam)*

**Keywords:** *ecological, agriculture, mixed organic farm, system*

### INTRODUCTION

"Ecological agriculture", a protected term given by the U.E to Romania for defining this agricultural system, is similar with the terms "organic agriculture" or "biological agriculture" used in other member states.

The role of the ecological agriculture's system is producing cleaner food, suited for the human metabolism, in full correlation with the environmental conservation and development. One of the main purposes of ecological agriculture is producing agricultural products and fresh and authentic food by processes made to respect the nature and its systems.

At the stage of productions, at the farm it is forbidden to use genetic modified organisms (GMOs and their derivatives), fertilizers and synthetic pesticides, stimulators and growth regulators, hormones or antibiotics. At the stage of processing food it is forbidden to use additives, complementary substances or synthetic chemicals used to prepare organic foods. The ecological agriculture has a major contribution to a lasting development, increasing economic activities with an important value added to increasing interest for space areas.

In Romania, the control and certification of organic products at present is provided by organisme de inspectie si certificare private. They are approved by the Ministry of Agriculture and Rural Development based on the criteria of independence, impartiality and competence established in Order nr. 181/2012 for approving the rules of the organization of the system of inspection and certification, of approval of organisme de inspectie si certificare and supervising the activities of the control bodies

### MATERIALS AND METHODS

Studying the agricultural exploitation, Dariciuc Loredana PFC aims for raising the animals in an ecological system, for individuals and legal entities to consume.

The ecological farm was founded by Miss Dariciuc Loredana, due to increased demands on the free market and marketplace of BIO products, healthy products that are appreciated by a lot of costumers.

The farm can be found in the Nitchidorf village, Timis, with an area of 44.26 ha of farmland needed to forrage and a range of facilities on site. (livestock buildings, power supply, drinking water, etc.).

The farm also owns 5 ha of bush, land which is used for recreational uses and to keep the biodiversity of the spontaneous species of the area.

The ecological farm is inspected annually by organismul de inspectie si certificare - ECOCERT, body with which the farm has a contract with and which is issuing the necessary ecological marketing of organic products. Certification is done for each agricultural culture, each species of animal and processed products. The society's objective is practicing an efficient agriculture under a given natural environment, to ensure its members to subsistence resources and obtain greater and bigger income.

The entire production activities respects the environmental requirements, preserving and improving the productive capacity of the soil. Within the overall objective, the company has proposed specific activities to agriculture as : agricultural land use, livestock, processing and marketing of obtained products.

The soil. The production capacity of soils is influenced by a number of limiting factors, among which the most prominent are : soil reaction, with a low value, low humus reserves, excess moisture from rainfall or emphasized ponding.

The climate. The area is located in the south-west of the country, it benefits of moderate temperate continental climate with milder and shorter winters. The average annual temperature is 10,9C. Under the influence of oceanic and Mediterranean air masses, winters are shorter and milder. The average yearly rainfall oscillates between 605,5-725,9mm. The amount of snow that falls in the area is small, the soil is covered on average about 25 days a year and snow depth is 5-10 cm.

Organic cultivation surfaces comply with the requirements of Regulation (CE) Nr 834/2007 and Regulation (CE) Nr 889/2008, and activities, categories and products are in compliance with the organic production method regulated by community and national rules applicable in the field of high quality, certified by law enforcement.

The vegetal section, year 2015 (44.26 ha) : alfalfa, fodder (*Trifolium pretense*, *Medicago sativa*, *Lolium perene*, *Xfstulolium*, *Dactylis glomrata*, *Phleum pratense*), permanent pasture, sorghum.

Table 1

Cultivated plant species				
Nr.crt	Culture	Surface ha	Average production kg/ha	Destination
	Fodder	4.65	65000	Fodder
4	Alfalfa	11.72	40000	Fodder
5	Sorghum	3	60000	Silo
6	Permanent pasture	23.89	20000	Fodder

Secondary products (crop residues, manure) after processing they will represent animal feed and bedding during the winter and fertilize land.

The vegetal sector at the farm produces all the food needed for feeding the animals. The conservation and preservation of plant products from the farm is done by traditional methods.

Growing technologies are characteristic of organic agriculture in compliance with all restrictions of using chemical fertilizers and pesticides. It is used manure and green manure as fertilizer.

Crop maintenance work is done by collaboration with the company for services. Increasing dairy cows on the farm. The livestock sector is represented by 20 dairy cows and three heifers that produce the necessary milk and dairy products for the food sector. Livestocks are related to the productive potential of the vegetal sector (excluding the purchase of products from outside) and the recovery and sale of consumption by livestock production.

Animals have free access to the paddock. The floor is full of rich bedding. Microclimate shelters ensures optimum comfort: temperature 5-25 °C, 55-75% humidity, airflow 0.1-0.5 m / s. Natural ventilation ensures the exchange of air current normal, about 120-150 m<sup>3</sup> / cow / hour.

## **RESULTS AND DISCUSSIONS**

Maintenance venture presents several advantages resulting decreasing costs per animal and the cost per product unit. Among these advantages stands: lower cost of grass due to the fact that it hasn't been harvested, transported and administered, the possibility of animals moving outdoors and its beneficial rays of the sun, which causes strengthening the animal body, reducing the risk of disease outbreaks, increasing fertility and as a result index birth or prolificacy, total substitution of concentrate feed.

The necessary area for grazing is provided, or 0.5 ha / cow (44.6 ha) where space is rationally used to disinfect and eliminate rodents with substances and methods approved by law. The appropriate space, where the animal can freely manifest their behavior is the closed barn in three parts, opened south with abundant litter.

Automatic watering works in the shelter, which does not freeze in winter, appropriate for the herd. Manure removal is done directly on the platform of manure and places for resting have sufficient bedding.

Animal feeding is done only with organic feed, which are: juicy fodder consisting of: fiber silo and feed consisting of: natural hay and high quality vegetables; The primary sector processing vegetal products and animals requires specific areas and facilities (preparing animal feed, food processing).

On the farm yields from cattle are destined for own use and selling of milk and milk products (cottage cheese, cream, butter and milk jam). Personnel of the organic farm buildings is the core of a family. Preparation and delivery of goods. Conditioning, packaging and labeling by the manufacturer is ensured by the producer, at the farm

To all this it is added the increase of labor productivity due to rising standards of service and the elimination of additional works embodied in harvesting, transporting and administrating the green mass.

In the case of mechanical work for maintaining the crop, costs are lower, unlike conventional farming, lack of fertilizers and pesticides significantly reduce maintenance costs.

Due to lower yields per unit area, revenues are lower by about 30%, which are not offset by price differences, at least for the main species.

### **CONCLUSIONS**

Stimulating agricultural crops using low frequency electromagnetic radiation causes some gains in terms of analyzed parameters. Not all wave lengths influence positively, for which, in the future should be tested more treatment options in order to choose optimal variants.

The study did show that on-farm organic mixed farm profile fits best the traditional farmer, thus leveraging traditional agriculture and healthy lifestyle.

For obtaining quality animal products, unpolluted, salubrious, while ensuring the preservation of ecological balance beneficial to human and animal health, it is necessary to improve the professional knowledge of all categories of farmers. By fitting solutions shelters and to equip them with milking installations, watering and manure disposal will reduce the physical effort, increase labor productivity and profitability of family farms.

Increasing dairy cows, occupation base in rural and mountainous ensures stable and rhythmic income and livestock for farmers

Organic products are more expensive than classical ones because more work is needed for achieving them, their yields are lower and certification is expensive.

Although the harvest in organic farming is less in terms of quantity, it is often highest in terms of quality compared to the one obtained in conventional agriculture

Along with the particularity of ecopedologic profile, the hydric resource as environmental factors (of the atmosphere), is found in production levels that were statistically assured in the two years of experimentation, for reddish mollic preluvosoil from Vinga Plain.

The results reveal that the actual effect of rainfall on crops is influenced by soil properties (texture, porosity, permeability, useful water capacity) and relief, traits which may favor the accumulation, storage and disposal of water from differentiated precipitation.

Also, as seen from the research and in terms of behavior of hybrids, are clear differences. Experimentation of the new technologies of cultivation of maize is an important step to optimize production capacity of maize hybrids to be introduced into the culture.

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