

SAFO SUSTAINING ANIMAL HEALTH AND FOOD
SAFETY IN ORGANIC FARMING

**3rd SAFO WORKSHOP, 16th-18th
SEPTEMBER, 200
FALENTY – POLAND**

THE EVOLUTION OF LIVESTOCK IN ROMANIAN ECOLOGICAL AGRICULTURE

C. Man¹, Gh. Mihai², C.A. Man,² A.Odagiu², I. Albert¹

¹Biofarmers' Association Bioterra,

²University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania

A synthesis of general data concerning Romanian agriculture, evolution of the ecological agriculture emphasizing some ecological livestock farming, is presented in the paper:

- **Present situation of the agriculture in Romania**
- **Present stage of the ecological agriculture in Romania**
- **National legislation concerning the ecological agriculture**
- **The support received by the ecological agriculture**
- **Inspection and certification**
- **Scientific research**
- **Conclusions**

Present situation of the agriculture in Romania

Romania is one of the European countries characterized by a high agricultural potential. The **agricultural area is of 14.8 millions hectares and represents 62% of the surface of the country.**

In 2003, agricultural surface had the following structure (Ministry of Agriculture):

- arable surface9.4 millions ha (63%)
- natural pastures4.9 millions ha (33%)
- vineyards and orchards0.5 millions ha (4%)

The pastures are the main animal feeding resources (70 – 75% of feeding structure in herbivore vertebrates), forages cultivated on arable areas, and part of cereal production (concentrates, and products resulted from processing).

In the last years, an improving tendency was observed in the field of animal production.

Livestock effectives increased in all species. In 2003 were recorded (after MAPDR):

- 3055 thousands heads cattle;
- 8504 thousands heads sheep;
- 7006 thousands heads pigs;
- 44,847 thousands head laying poultry.

Present stage of the ecological agriculture in Romania

After 1997, when the first associations practicing ecological agriculture appeared ("Bioterra", "Agroecologia"), an acceleration was recorded in development of this sector, which represents a separate point of the 7th chapter – Agriculture in the frame Romanian negotiation for adhering to the European Union.

The main objectives of the ecological agriculture in Romania:

- The use of natural and recyclable resources;
- The development and consolidation of living systems in the context of bio-geo-chemical circuits;
- The maintenance of biodiversity and genetic diversity in agro-ecosystems;
- The supplying of animal welfare, health, and feed security using appropriate technology;
- The maintenance of homeostasis in antropized ecosystems, which lead to a better quality and quantity of the primary (vegetal) and secondary (animal) production in order to provide human health and feed security.
- The economical use of conventional and especially non conventional (solar, eolian, energies, bio gas, etc.) energetic resources;

The agricultural surface cultivated and certified in ecological system

Table 1: The evolution of surfaces certified as ecological (ha) in Romania during 2000 - 2004

Certified agricultural surface/crops	Realize				Estimate
	2000	2001	2002	2003	2004
Total surface	174338	28800	43850	57200	75500
Pasture and other forage crops, arable	9300	14000	20000	24000	27000
Cereals	4000	8000	12000	16000	24500
Oil producing and proteic crops	4000	6300	10000	15600	22000
Vegetables	38	100	700	200	300
Other cultures (including medicinal plants)	50	300	800	900	900
Fruits (morello, cherry)	-	-	50	100	200
Forest fruits	50	100	300	400	500

The evolution of the total **surface recorded a notable increase (328%) from 17,438 ha in 2000 to 57,200 ha in 2003**. The highest proportion is represented by forage crops (including pastures), followed by cereals, oil producing plants, and proteic crops. For the year 2004 an increase of crops surface is estimated, by 8 times for vegetables, by 4 times for orchards, by 18 times for other crops (including medicinal plants), and 10 times for hay and forests as compared to 2000.

The ecological certified agricultural products

Table 2: The evolution of productions (thousands t) in crops certified as ecological during 2000 - 2004

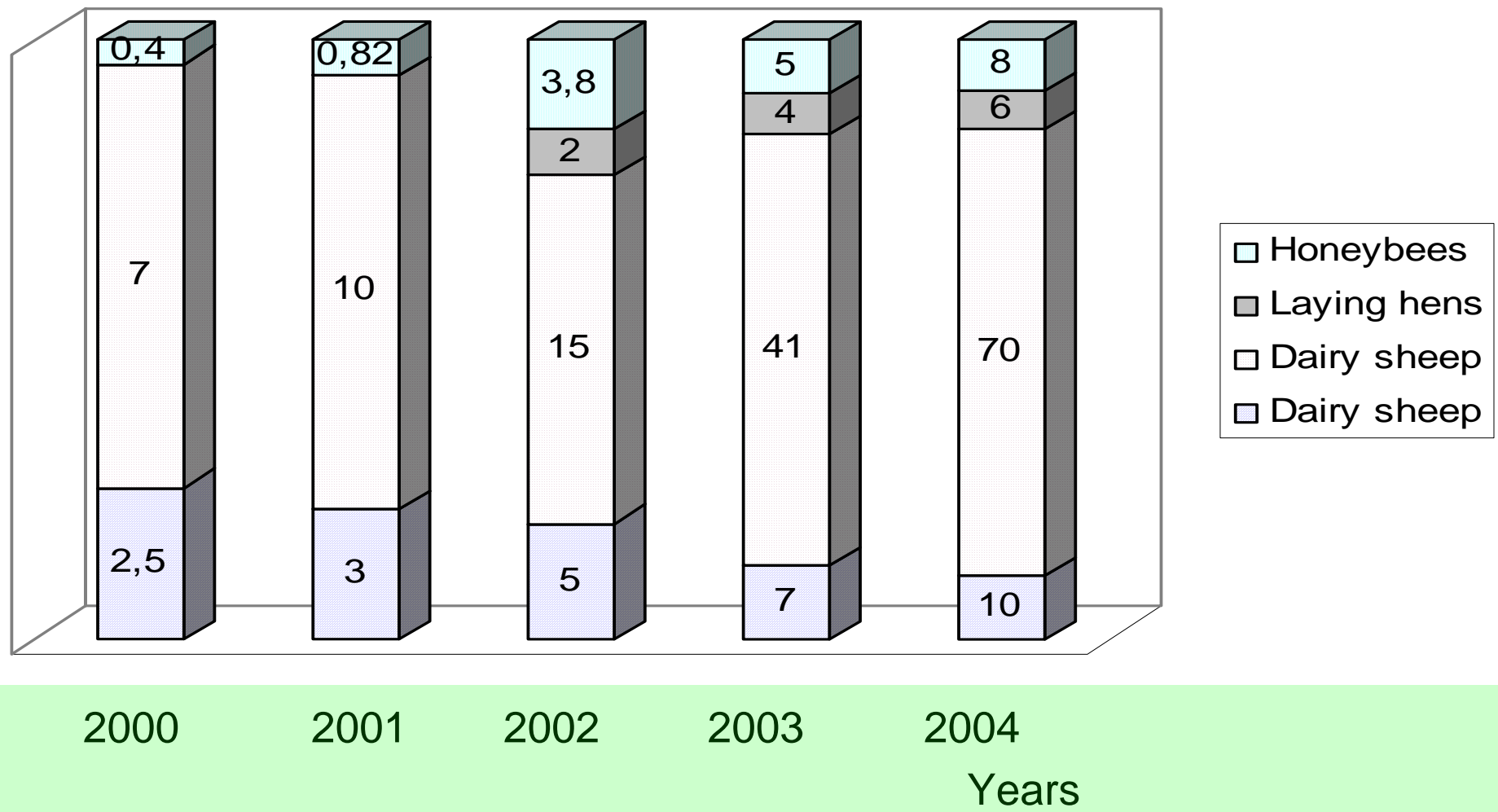
Certified agricultural surface/crops	Realize				Estimate
	2000	2001	2002	2003	2004
Total surface	32550	56000	78000	48000	135000
Pasture and other forage crops, arable	7200	12500	15	14400	30500
Oil producing and proteic crops	5500	7200	9000	12480	19890
Vegetables	0.600	4	7	2	3
Other cultures (including medicinal plants)	0.002	0.300	0.800	0.900	0.900
Fruits (morello, cherry)	-	-	0.200	0.300	0.800
Forest fruits (hazelnuts, raspberries, bilberries)	0.200	0.400	0.300	0.320	0.500

As consequence of the increase of the ecological certified surfaces for the year 2004 as compared to 2000 the following estimations were performed: **the total forage production will increase by 415%, cereal production by 424%, oil and proteic crops by 360%, vegetables by 500%, other crops (including medicinal plants) by 450%, and forest fruits by 250%.**

Organic livestock farming recorded

Figure 1: The evolution of livestock effective (thousands heads) in organic livestock farming (2000 – 2004)

Livestock effectives (thousands heads)



Organic livestock farming recorded a rapid development after 2000. From the year 2000 the effective of certified dairy cows was of 2.5 thousands heads. An increase of 280% was recorded in 2003 as compared to 2000, and a 400% increase as compared to the same year was estimated for 2004. In the year 2000 the sheep effective was about 7,000 and increased by 586% in 2003.

National legislation concerning the ecological agriculture

- In the present context of sustainable rural development, agricultural development, including ecological agriculture and immediate perspective to adhering to European Union, Romanian officials considered as opportune the urgent elaboration and implementation of a national legislation harmonized with the European acquis;
- The sustainable development of the agrarian and agro-alimentary sectors in tight connection with environment protection and preservation of natural resources is a strategic objective for the National Program for Agriculture and Rural Development;
- The legislation elaborated aims to create and stimulate the development of the ecological agricultural system in concordance with European systems.

The support received by the ecological agriculture

The acceleration of the measure fields of activity of **SAPARD** (Special Program of Pre-adhering for Agriculture and Rural Development) program offers to operators a very special opportunity. Of great importance for ecological agriculture are the following measures:

Measure 1.1.

Improvement of processing and marketing of agricultural and fishery products

Measure 1.2.

Improving of the structures in order to realize the veterinary and phyto-sanitary quality control for the quality of the alimentary products, and food safety

Measure 3.1.

Investments in agricultural exploitations, horticulture, livestock farming (dairy cows, cattle, swine, poultry, fattening farms)

Measure 3.3.

Agricultural production methods, designed to protect the environment and to maintain the rural landscape

Measure 4.1.

Improvement of professional training.

Scientific research

Recent research concerning the **hygienic conditions and milk quality** were performed in **1658 exploitations ("BIO" farms)** from **Dornelor Depression** situated in Oriental Carpathian .

This area is of great interest and with high potential in order to obtain "BIO" animal products.

SC Dorna Lactate SA is the one of the most important unit for milk processing in studied area. This unit collects milk from over 8000 small producers, and can process about 25,000 L milk/24 hours.

Research was focused on:

- the study of hygienic conditions by "BIO milk" chain from above mentioned area,
- examination of nutritional, bacteriological, technological, and sensorial quality of milk obtained in farms attested as practicing the ecological agriculture

Hygienic conditions in farms concern:

- Quality of shelters and dairy cows sheltering
- Microclimate provided to animals
- Hygienic conditions of manure storage
- Hygienic conditions of purine collecting and storage

The main results:

- The animals' shelters are correspondent to EU Rules 2092/91 concerning material (wood), surface and volume standards, presence of pens and alleys for moving.
- Light is correspondent in 47% of shelters, satisfactory in 45% and insufficient in 8%, which have very small windows for protection against bears;
- Ventilation is natural, but only in 27% of cases is correspondent to hygienic norms; for 60% is not sufficient and 13% have not ventilation;
- Collecting, evacuation, and dejection storage are manually realized in majority of cases, and with many hygiene deficiencies. Only 2% of farms have manure platforms made of concrete and correspondent basins for purine. 15

Individual values of milk fat content were between 2.88 and 4.56%, the month averages in winter being satisfactory, over 7% useful substances, while during summer they supported the effect of heat. The potential of Pinzgau of Dorna breed, which is dominant in studied area, is high, but foraging based almost on grass in summer and hay in winter does not permit its integral exteriorizing.

- The month average number of (SC) somatic cell counts/mL collected milk from processing unity is high, even over 98% in farms where manual milking is used and clinical mammita incidence is very low.
- Many determinations by farms with SC under 100,000/mL even 50 – 50,000/mL meaning very good values, exists.

Total germ number - TGN/mL milk is too high as compared to exigencies, in all harvesting points: central tank, milk from collecting centers or by routs, confirming important hygienic deficiencies recorded especially in producers by milking chain.

CONCLUSIONS

- All 1,658 exploitations are situated in the Dornelor mountain area with exceptional conditions certified by habilitated organisms;
- Quality of milk obtained from ecological exploitations is correspondent from nutritional, technological and sanitary point of view, sensorial – exceptional, and bacteriological – at inferior limit;
- Some hygienic deficiencies concerning microclimate factors by milk chain, were recorded in producers;

In future a higher interest will be necessary for the following issues in private bio farms:

- The thoroughgoing of the interrelations soil – plant – animal in agro-ecosystems in which ecological agriculture is performed;
- The study of the feeding, social and sexual behavior of herbivores in order to improve the breeding technology;
- The study of the ecological factors, which influence animal health, food safety, animal production, and animal products quality;
- The focusing of research in buffalo, and goat, which are less studied species.

THANK YOU