

# STUDIES REGARDING THE DEVELOPMENT OF ECOLOGICAL AGRICULTURE IN ROMANIA

## STUDII PRIVIND DEZVOLTAREA AGRICULTURII ECOLOGICE ÎN ROMÂNIA

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**Abstract.** *In Romania the consumers' interest for the ecological products appered later, fater 1990, when also increased the volume and diversity if food products in parallel with the appearance of some ideas regarding the negative effect of some chemical products and genetic modifications of the human organism. After 1997 there has been registered an accentuated dynamism regarding the ecological certification on areas growth and animal effectives which brought on the market some significant quantities of "bio" products. The statistical data shows that in the period 2001-2007, in the biological agriculture, the certified areas multiplied by 110 times, registering an area of almost 200 000 hectares, with an annual rhythm of growth of 41,3%. As regards the animal effective (cows, sheep), the increases were more reduced than in the case of milk cows, at present being registered about 6500 heads and more for sheep and goat whose effective reached 78 000 heads. As for the fowls, the effectives are insignificant. The biological certified products (169 000 tones) have a large variety. At the vegetal products, the weight is held by the cereals, oleaginous, proteic and medicinal plants and those which are harvested from the spontaneous flora, as for the animals, the honey and "cascaval".*

**Key words:** agriculture, ecology, rural development, "bio" products, certificate

**Rezumat.** *Interesul consumatorilor din România pentru produsele ecologice a apărut târziu, după 1990, când a crescut volumul și diversitatea produselor alimentare în paralel cu apariția unor idei privind efectul negativ al produselor chimice și a modificărilor genetice asupra organismului uman. După anul 1997 s-a înregistrat un dinamism accentuat privind creșterea suprafețelor și a efectivelor de animale cu certificare ecologică, fapt ce a dus la apariția pe piață a unor cantități semnificative de produse „bio”. Datele statistice ne arată faptul că în perioada 2001-2007, suprafețele certificate în agricultura biologică s-au multiplicat de peste 110 ori, înregistrându-se o suprafață de aproape 200 000 hectare cu un ritm anual de creștere de 41,3%. În ce privește efectivele de animale (vacii, oi mame), creșterile au fost mai reduse în cazul vacilor de lapte, în prezent fiind înregistrate circa 6500 capete și mai ridicate în cazul ovinelor și caprinelor a căror efective au atins 78 000 capete. În cazul păsărilor, efectivele sunt ne semnificative. Produsele cu certificare ecologică (169 000 tone) au o varietate mare. La produsele vegetale, ponderea o dețin cerealele, plantele oleaginoase, proteice, medicinale și cele care sunt colectate din flora spontană, iar la cele animale, mierea de albine și cașcavalul.*

**Cuvinte cheie:** agricultură, ecologie, dezvoltare rurală, produse "bio", certificate

## INTRODUCTION

At present both worldwide and in Romania there is a large preoccupation for the future environment. Its quality largely influences the human health through the consummated products, through the breathed air and the environmental comfort.

The rational agriculture is one of the factors that generate the negative effects on the environment, having direct influences on the quality of the agricultural products.

Starting from Toffler's idea that "the land, we didn't inherited it from our parents, but we borrowed it from our children", we naturally ask what kind of agriculture we have to do in order to keep or even to improve the quality of the soil and of the environment for the future generations.

In Romania, the first preoccupations with scientific character regarding the vegetal ecology appeared in the period between the First and Second World Wars, through the conquests of the botanists Prodan and Borza. They gradually amplified gathering all the components that belong to this domain and extending on agriculture, especially when there were noticed some negative effects regarding irrational chemistry on agriculture. Papacostea P. proposed "agriculture projected as a harmony of biochemical and agro-economic laws, which have to base on the agro-biological farm, complexly organised, with closed or semi-closed biological circuits". More than 25 years ago, Gh. Lixandru showed that the term of "ecological agriculture" appeared as an answer to the pollution phenomenon which was favoured by the processes of mechanization and intensive chemistry on agriculture, by the possibility of contaminating the agricultural products with different substances, having a noxious effect on human organism.

The increased interest on the development of ecological agriculture imposes studies meant to stabilize the present stage of this sector for establishing an adequate policy of promotion and accomplishment of ecological products.

## MATERIAL AND METHOD

In order to accomplish the study there were used bibliographical sources from the specialized literature, as well as official statistic documents. Some information was obtained through proper investigations from the local units.

Of the used methods, the most important were comparison, monograph, questionnaire using dynamic and structure indicators as well as index with fix base and in chains.

## RESULTS AND DISCUSSIONS

Preoccupations regarding the accomplishment of the agricultural production in an ecological system in Romania appeared late, after 1990, when the consumers started to manifest an interest for this type of products.

In 1997 there appeared the first associations which promoted the ecological agriculture (Bioterra, Agroecologica), and after 2000 there was registered an accentuated dynamism that could be noticed in the increase of the agricultural

areas cultivated in an ecological system; diversification of the cultures ecologically certified; increase of vegetal productions ecologically certified; increase of the effective of some raised animals and ecologically certified; successful appearance and evolution of large ecological farms.

1997 can be considered the beginning of the ecological agriculture in Romania as there was registered a large certified area (332 ha) of cultures in the ecological system. In the following years that areas gradually increased: 778 ha – 1998, 944 ha – 1999, 11405 ha – 2000.

*Table 1*

**The evolution of certified areas in the ecological agriculture in Romania**

| Specification                                     | U.M. | Accomplished |        |         |         |         |          |          |           |
|---|------|--------------|--------|---------|---------|---------|----------|----------|-----------|
|   |      | 2001         | 2002   | 2003    | 2004    | 2005    | 2006     | 2007     | 2008      |
| Total area<br>d.c.i.                              | Ha   | 17.438       | 28.800 | 43.850  | 57.200  | 73.800  | 110.130  | 143.194  | 190.129   |
|   | %    | 100,0        | 165,2  | 251,5   | 328,0   | 423,2   | 631,5    | 821,2    | 1090,3    |
| Cereals   | Ha   | 4.000        | 8.000  | 12.000  | 16.000  | 20.500  | 22.100   | 16.310   | 32.222    |
|   | %    | 100,0        | 200,0  | 300,0   | 400,0   | 512,5   | 552,5    | 407,7    | 805,5     |
| Fodder<br>cultures,<br>meadows and<br>grass lands | Ha   | 9.300        | 14.000 | 20.000  | 24.000  | 31.300  | 42.300   | 51.200   | 57.600    |
|   | %    | 100,0        | 150,5  | 215,0   | 258,1   | 336,6   | 458,8    | 550,5    | 619,4     |
| Oleaginous<br>and proteic<br>plants               | Ha   | 4.000        | 6.300  | 10.000  | 15.600  | 20.100  | 22.614   | 23.872   | 26.491    |
|   | %    | 100,0        | 157,5  | 250,0   | 390,0   | 502,5   | 565,3    | 596,8    | 662,2     |
| Vegetables  | Ha   | 38           | 100    | 700     | 200     | 300     | 440      | 720      | 310       |
|   | %    | 100,0        | 263,2  | 1.842,1 | 526,4   | 789,4   | 1.157,8  | 1.894,7  | 815,8     |
| Fruits  | Ha   | -            | -      | 50      | 100     | 200     | 432      | 292      | 650       |
|   | %    | 100,0        | -      | 100,0   | 200,0   | 400,0   | 864,0    | 584,0    | 1300,0    |
| Forest fruits                                     | Ha   | 50           | 100    | 300     | 400     | 500     | 17.360   | 38.700   | 58.728    |
|   | %    | 100,0        | 200,0  | 600,0   | 800,0   | 1.000,0 | 34.720,0 | 77.400,0 | 117.456,0 |
| Other cultures                                    | Ha   | 50           | 300    | 800     | 900     | 900     | 4.884    | 12.100   | 14.128    |
|   | %    | 100,0        | 600,0  | 1.600,0 | 1.800,0 | 1.800,0 | 9.768,0  | 24.200,0 | 28.256,0  |

After 2000 these areas have had the same positive trend of growth. We present in the table 1 the evolution of the certified in the ecological agriculture in Romania.

In 2001, in Romania there were registered 17438 ha of certified ecological areas. Of these 8000 ha (45,8%) were occupied with field crops (cereals, oleaginous and proteic plants), 9300 ha (53,3 %) fodder culture and natural meadows, 100 ha (0,6 %) areas occupied with spontaneous flora, the differences being with vegetable crops.

After a period of seven years, in 2007, the area increased of almost 110 times, reaching 190.126 ha.

All fields with ecological cultures grew, the proportion being different. The field crops (cereals, oleaginous and proteic plants) have increased their surface with 7 times, and the vegetable cultures with 8,1 times. The largest

growths were registered on the ecologically certified fields on which there are planted forest fruits and medicinal plants which registered a growth from 100 ha in 2001 till 72856 ha.

On the whole, the increase of areas is spectacular as the calculus of the index with chain base shows an average annual rhythm of growth of 41,3%. As regards animal husbandry domain, there was progress, even if then growth rhythm was not so high as in vegetal production. Table 2 we present in the evolution of mother bees effectives at the main species with ecological certificate.

Table 2

**Evolution of ecologically certified animal effectives in Romania**

| Specification   | U.M. |       |       |       |         |       |         |         |         |
|-----------------|------|-------|-------|-------|---------|-------|---------|---------|---------|
|                 |      | 2000  | 2001  | 2002  | 2003    | 2004  | 2005    | 2006    | 2007    |
| Milk cows       | Cap  | 2.100 | 5.300 | 6.500 | 7.200   | 7.200 | 8.100   | 9.900   | 6.265   |
|                 | %    | 100,0 | 252,4 | 309,5 | 342,8   | 342,8 | 385,7   | 477,4   | 298,3   |
| Sheep and goats | Cap  | 1.700 | 3.700 | 3.000 | 3.200   | 3.200 | 40.500  | 86.180  | 78.076  |
|                 | %    | 100,0 | 217,6 | 176,5 | 188,0   | 188,0 | 2.382,4 | 5.069,4 | 4.592,0 |
| Laying Hens     | Cap  | -     | -     | -     | 2.000   | 2.700 | 7.000   | 4.300   | 4.720   |
|                 | %    | -     | -     | -     | 100,0   | 135,0 | 350,0   | 215,0   | 236,0   |
| Bee families    | nr   | 400   | 820   | 3.800 | 5.000   | -     | -       | -       | -       |
|                 | %    | 100,0 | 205,0 | 950,0 | 1.250,0 | -     | -       | -       | -       |

In 2000, there was an effective of cows with ecological certificate of 2100 heads. In the following years this effective increased, reaching in 2006 at 9900 heads, the growth being of 4, 7 times bigger. Further, in 2007 there was a back stroke, the effective dropping to 6265 heads.

As regards sheep and goats, the same growth process manifested itself in the number of heads; al first there was a reduced start, 1700 heads in 2000 and 3200 heads in 2004. In the following two years the increase was powerful, the effectives reaching 86180 heads in 2006. The registered drop of cows in 2007 also manifested at sheep and goats, the effectives going down with 8000 heads.

Starting with 2003 there were ecological registrations even for good layer hens, but the effective was reduced (2000 heads in 2003), and the increase was insignificant, in 2007 being only 4720 heads.

As regards the situation of bee families, there are some data, but they have an incomplete character. We mention the fact that in 2003 there were 5000 families of bees with ecological certificate, but some problems that appeared after the EU integration created dysfunctions in evidencing their real number.

As regards the volume of products with ecological certification, it has a heterogeneous character, determined by the insurance sources.

Table 3

**Evolution of vegetal products in ecological agriculture – Romania**

| Specification                 | Accomplished |       |        |       |         |       |
|-------------------------------|--------------|-------|--------|-------|---------|-------|
|                               | 2000         |       | 2003   |       | 2007    |       |
|                               | tones        | %     | tones  | %     | tones   | %     |
| Total quantity d.c.           | 13.502       | 100,0 | 30.400 | 100,0 | 169.312 | 100,0 |
| Cereals                       | 7.200        | 53,3  | 14.400 | 47,3  | 65.127  | 38,5  |
| Oleaginous and proteic plants | 5.500        | 40,7  | 12.480 | 41,0  | 52.982  | 31,3  |
| Vegetables                    | 600          | 4,4   | 2.000  | 6,6   | 3.410   | 2,0   |
| Fruits                        | -            | -     | 300    | 1,0   | 1.255   | 0,7   |
| Spontaneous Flora             | 200          | 1,5   | 320    | 1,1   | 35.236  | 20,8  |
| Other cultures                | 2            | 0,1   | 900    | 3,0   | 11.302  | 6,6   |

The total registered volume in 2000 was of 13.502 tones. Of these the largest quantity weight are the cereals (53,3 %) and oleaginous plants (40,7 %), the difference being the vegetables, fruits and plants of the spontaneous flora. After 3 years the weight of cereals dropped, slightly growing the quantity of oleaginous and proteic plants and especially the medicinal plants and those of the spontaneous flora.

2007 presents a totally different situation from 2000. So, to all categories of products there was an important growth, for example at cereal cultures the growth was of over 9 times, as weight these products dropped, representing 38,5 % in comparison with 53,3% in the 2003. Even at oleaginous and proteic plants the cultures dropped, in favour of plants of the spontaneous flora which represent 20,8% of the total harvested quantity. We mention that if in 2000 there were certified only 200 tones of products of the spontaneous flora, in 2007 these ecologically certified products are over 35 000 tones.

As regards the ecological products of animal origin and their quantity, there have been a resembling evolution (table 4).

Table 4

**Evolution of ecological animal productions – Romania**

| Specification                | U.M. |      |      |      |      |      |      |       |       |
|------------------------------|------|------|------|------|------|------|------|-------|-------|
|                              |      | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006  | 2007  |
| Telemea oaie                 | tone | 18   | 46   | 36   | 45   | 48   | 480  | 520   | 510   |
| Schwaitzer                   | tone | 23   | 23   | 100  | 110  | 116  | 268  | 576   | 580   |
| Caşcaval                     | tone | -    | 121  | 250  | 220  | 253  | 330  | 642   | 640   |
| Tinned vegetables and fruits | tone | -    | -    | -    | -    | 35   | 50   | 42    | 40    |
| Honey                        | tone | 10   | 20   | 80   | 110  | 320  | 610  | 1.242 | 1.950 |

We noticed the existence of a threshold in 2005 from which the quantities 'of the zoo technical products have significantly increased. Thus, for "telemea de oaie" the growth was of 10 times, in case of "cascaval" the quantity almost doubled and the honey increased from 320 tones in 2004 to 1950 tones in 2007.

This positive evolution shows the increasing interest of the internal and external consumers for the ecologically certified products and impose an adequate policy for helping the agricultural managers from this domain.

## CONCLUSIONS

1. In Romania, the interest for the ecological products has increased in the last two decades. The consumers' preferences orientate more and more to that products that are "clean" from the biological point of view.

2. The statistical data shows that in the period 2001-2007, in the biological agriculture, the certified areas multiplied by 110 times, registering an area of almost 200 000 hectares, with an annual rhythm of growth of 41,3%. As regards the animal effective (cows, sheep) and fowls the increases were more reduced than in the case of milk cows and more for sheep and goat whose effective dropped by 50 times in the last 8 years.

3. At the vegetal products, the weight is held by the cereals, oleaginous, proteic and medicinal plants and those which are harvested from the spontaneous flora, as for the animals, the honey and "cascaval".

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