

## ECOLOGIC AGRICULTURE – AN OPPORTUNITY FOR BRAILA COUNTY

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**Abstract:** *Ecologic agriculture appeared as an alternative to intensive agriculture, based on maximization of production using nitrates, stimulating production in large quantities, in order to increase agricultural production. Ecological agriculture principles can be found in the principles of ecology, science that studies the interrelationships between organisms and the environment. This new type of agriculture is called sustainable agriculture, it requires a set of techniques and practices that should ensure a satisfactory production, to provide the necessary food, taking into account environmental production. In other words sustainable agriculture is implementing those measures that can be taken in an agricultural system that meets the needs of the present generation without compromising the chance of future generation to meet their own needs.*

*This study is a comparative analysis between the state and development of ecological agriculture in the county Braila and across the country, in 2007-2013.*

**Key words:** *ecologic agriculture, Braila county, Romania*

### INTRODUCTION

In county Brăila there exist opportunities for the development of ecological agriculture, which is due to the low level of chemical fertilizers' and pesticides' utilization and to the emergence of the economic operators in the field of ecological agriculture.

In this context the main goals of the paper had in view the analysis of the situation and evolution of ecological agriculture at the level of county Brăila comparatively to the national level.

### MATERIALS AND METHODS

The analysed information was collected through the documentary study of the papers regarding the theme approached. The methodology comprised the statistical analysis of primary data utilizing as working instrument the quantitative analysis working program Excel. The statistical data which stood at the basis of the analysis were at the level of county Brăila and at national level, covered the period 2007-2013 and they came from the following sources: a) statistical data supplied by the National Statistics Institute (NIS) referring to: the chemical and natural fertilizers quantities and areas which were utilized in county Brăila and at national level; b) statistical data /information supplied by the Environmental Protection Agency (EPA) in the Annual Reports regarding the environmental state in county Brăila in the period 2007-2013 regarding ecological agriculture; c) statistical data/ information from the Ministry of Agriculture and Rural Development (MARD – referring to the ecological operators number in Romania.

### RESULTS AND DISCUSSIONS

#### **Ecological agriculture– an opportunity in county Brăila**

##### ***1. Chemical fertilizers and natural fertilizers***

Fertilizers<sup>1</sup> of any nature, applied rationally, have a priority place in the maintaining and increasing the soils' fertility, for the increase of agricultural productions. Though, in the conditions in which they are utilized without taking into account the soils'

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<sup>1</sup> The mineral and organic fertilizers quantity applied per area should not exceed 170-210 kgN/ha/year

nature, the concrete weather conditions and the needs of the plants they can lead to the derangement of the ecological equilibrium, mainly by accumulation of nitrates.

The consumption of chemical fertilizers in county Brăila was situated around the value of 67 kg a.s./ha, exception making three years when the consumption of chemical fertilizers oscillated from 37.9 to 44.7 kg a.s./ha, the explanation being one of economic nature.

**Table 1**  
**Evolution of total chemical fertilizers consumption in county Brăila and in Romania**

	-kg a.s./ha-						
	2007	2008	2009	2010	2011	2012	2013
Romania	60,2	58,8	72,3	67,7	67,7	69,1	78,6
County Brăila	67,5	37,9	44,7	44,7	65,6	67,2	67,0

Source: own calculations after NSI, TEMPO-Online

Comparing the chemical fertilizers consumption in county Brăila with the chemical fertilizers consumption per total Romania, in the period 2007-2013 we can see that the only year in which in county Brăila it was utilized a quantity of chemical fertilizers higher than the country's average was the year 2007; in the rest of the period in county Brăila the chemical fertilizers consumption situated under the country's average.

The consumption of natural fertilizers in county Brăila registered the highest values (24.5 kg a.s. /ha) in the years 2009 and 2010; in the years 2007 and 2008 the natural fertilizers' consumption was more reduced (20 tones a.s./ha), and the reduction trend accentuated itself in the years 2011, 2012 and 2013, when the natural fertilizers consumption situated around the value of 18 kg a. s./ha.

**Table 2**  
**Evolution of natural fertilizers' consumption in county Braila and in Romania**

	- tones a.s./ha -						
	2007	2008	2009	2010	2011	2012	2013
Romania	25,1	23,6	24,1	25,3	23,1	21,9	21,6
County Brăila	20,0	20,0	24,5	24,5	18,5	18,6	18,4

Source: own calculations after NSI, TEMPO-Online

In the analysed period, the consumption of natural fertilizers in county Brăila was smaller than the consumption of natural fertilizers per total country, except the year 2009.

The moderate utilization of chemical fertilizers and the utilization of natural fertilizers permit the re-conversion of lands towards the ecological agriculture.

## 2. Pesticides

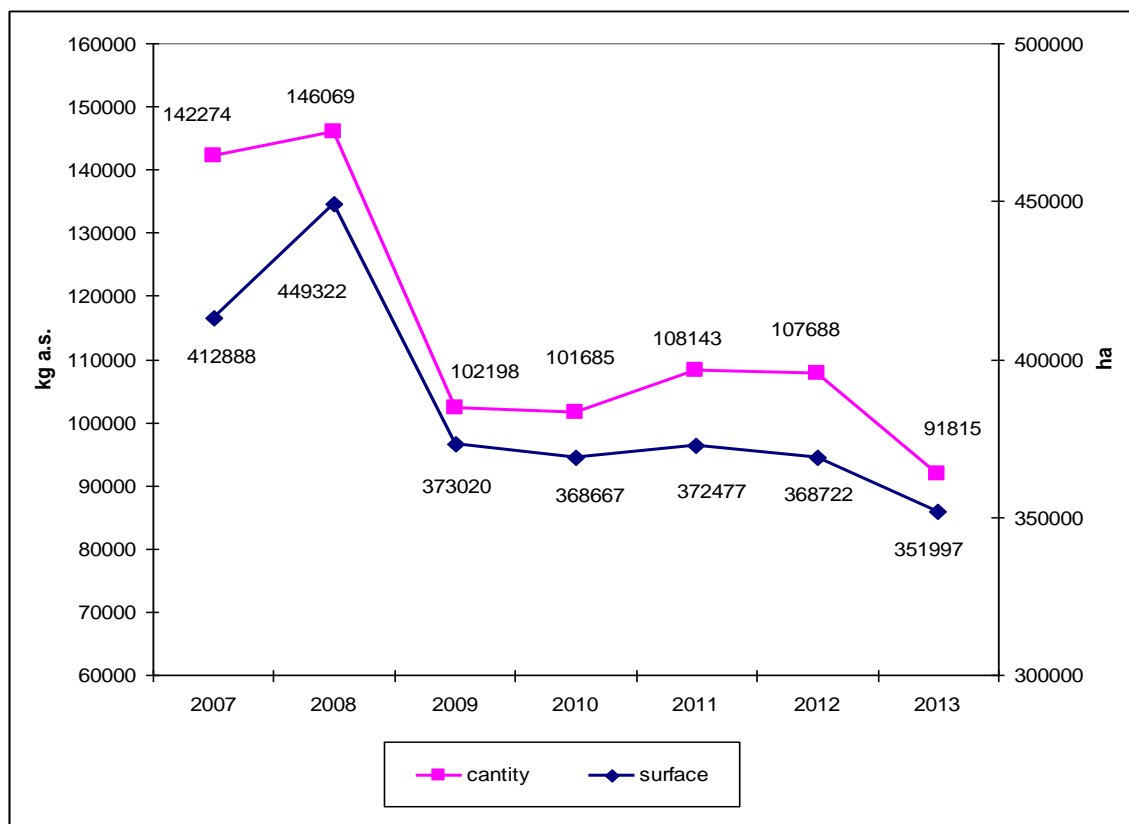
The modern agriculture, intensive and efficient cannot be conceived without the utilization of pesticides, but the high toxicity, the persistence and accumulation of them call for a rational use. This thing is imposing as much as their nocive effects are to be found amplified at the end of the trophic chain – the human body.

Thus, in the period 2007-2013 in county Brăila it can be observed both a decrease of the quantity of pesticides utilized, and of the areas these were applied, except the year 2008.

At country's level the quantity of pesticides utilized registered a fluctuant evolution, the smallest value being in the year 2007, the highest values being registered in the years 2008 and 2010.

As regards the areas on which there were applied pesticides, in Romania in the period 2007-2013 these registered constant increases in the period 2007-2010, from

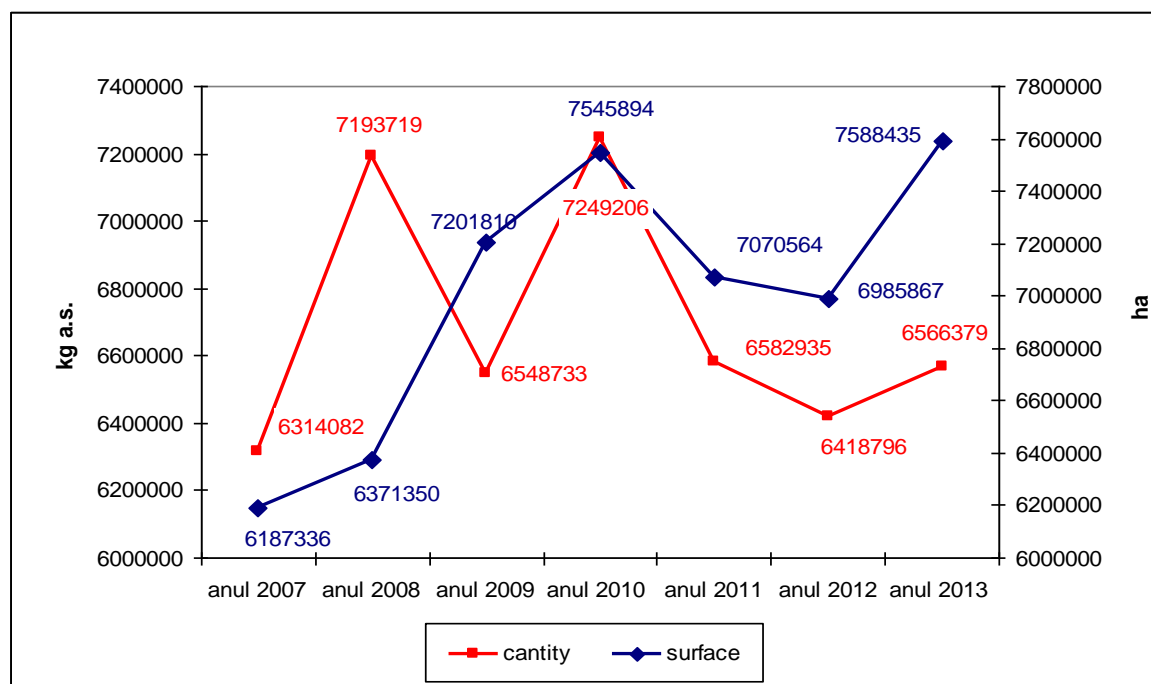
6187336 ha to 7249206 ha, decreasing slightly in the years 2011 and 2012 and reaching to the maximum level of 7588435 ha in the year 2013.



Source: NSI, TEMPO-Online

Graphic 1

The pesticides quantity utilized and the area on which it was applied, in county Brăila



Source: NSI, TEMPO Online

## Graphic 2

**The quantity of pesticides utilized and the area it was applied, in Romania**

The optimization and reduction of risks associated to the utilization of the chemical products for the plants' protection can be realized through the adoption of the alternative non-chemical techniques, as are the utilization of the biological products for plants' protection or the enlargement of the crop areas in greening system. In other words, another alternative to the pesticides utilization is represented by ecological agriculture.

**3. Economic operators in the field of ecological agriculture**

In Romania, the economic operators, either they are producers, processors, importers or exporters who wish to develop activities in the field of ecological agriculture are registering themselves at the Ministry of Agriculture and Rural Development<sup>2</sup>. The registration is obligatory, each year, by completion of the registration charts in ecological agriculture available at the Directions for Agriculture at County level and Municipality Bucharest, where the economic operator works.

In the period 2007-2013 at level of county Brăila the number of economic operators in the field of ecological agriculture did not have major fluctuations, the biggest number being registered in 2012, respectively 73 operators. Significant is the fact that in total of economic operators in the field of ecological agriculture the highest share is held by the producers, followed by processors and traders.

Starting with 2009 in county Brăila were started ecological crops on an area of 4096.1 ha, and in 2013 this area reached 6302.1 ha.

The areas on which ecological crops were started were increasing, and the highest share of the areas cropped under ecological system is held by sunflower, rice, wheat and maize. The areas under conversion period registered the most spectacular increase of almost 7 times in 2013 opposed to 2009.

**Table 3****The number of economic operators in the field of ecological agriculture in Romania and in county Brăila**

	2007	2008	2009	2010	2011	2012	2013
Romania	3834	4191	3228	3155	9703	15544	15194
Brăila county, of which :	...	...	61	62	65	73	64
<i>Producers</i>	...	...	56	55	46	61	47
<i>Processors</i>	...	...	4	6	14	7	11
<i>Importers</i>	...	...	-	-	-	1	-
<i>Exporters</i>	...	...	-	-	-	-	-
<i>Traders</i>	...	...	1	1	5	4	6

... lack of data

Source: [www.madr.ro](http://www.madr.ro) and EPM Brăila, Annual Report regarding the environmental state in county Braila years: 2007-2013

The interest for ecological agriculture at the level of the whole country can be remarked through an increase of 4 times of the number of economic operators registered in the ecological agriculture in the period 2007-2013.

The biggest increase was registered starting with the year 2011 and continued in the years 2012 and 2013 when the farmers inscribed themselves in the program of reconversion towards the ecological agriculture due to the subsidies allocated to the sector.

<sup>2</sup> The procedure of registration of the economic agents in the ecological agriculture is regulated through the MAFRD Order 219/2007 for the approval of the Rules regarding the registration of operators in ecological agriculture.

Subsidies are granted in the reconversion period only to the small farms, the big ones getting financial support only after the end of the reconversion period of 3 years, although the costs for accrediting as ecological producers are high enough.

**Table 4**

**Evolution of agricultural crop area under ecological system (greening) and their share in the total agricultural area of Romania and in county Brăila**

Indicator	2007	2008	2009	2010	2011	2012	2013
Total agricultural crop area in Romania (thousand ha)	14709	14702	14684	14634	14621	14615	14612
Total ecological agricultural area in Romania ( thousand ha)	124	134	151	183	230	288	301
Share in Romania (%)	0,84	0,91	1,03	1,25	1,57	1,97	2,06
Total agricultural area in county Brăila (thousand ha)	n.c.	n.c.	387	387	387	387	387
Total ecological agricultural area in county Braila (thousand ha)	...	...	4,1	5,2	5,7	6,3	6,3
Share in county Brăila (%)	...	...	1,05	1,34	1,47	1,62	1,62

*n.c. – it is not the case; ... lack of data*

*Source: own calculations after data [www.madr.ro](http://www.madr.ro) and [www.inse.ro](http://www.inse.ro)*

The share of the crop agricultural area under greening system in ratio to total agricultural area in Romania increased from 0.84% in year 2007 to 2.06 in the year 2013. For the years 2007 and 2008 there is no data for the crop agricultural area under greening system in county Brăila, but it can be stated that the share of the crop agricultural area under greening system in ratio to total agricultural area of the county registered increases from 1.05% to 1.62% in the period analysed.

## CONCLUSIONS

In the period 2007-2013 the consumption of chemical fertilizers in county Brăila oscillated from a minimum of 37.7 kg.a.s./ha (in year 2008) to a maximum of 67 kg a.s. (in year 2013). In the same period the consumption of chemical fertilizers in Romania oscillated from a minimum of 58.8 kg a.s./ha (in year 2008) to a maximum of 78.6 kga.s./ha (in year 2013). Only in the year 2007 the chemical fertilizers consumption in county Brăila was higher than the average per country.

In county Brăila can be observed both a decrease of the utilized pesticides quantity, and of the areas these were applied in the period 2007-2013. We can affirm that in county Brăila there are opportunities for the development of the ecological agriculture having in view the low level of utilization of chemical fertilizers and pesticides.

The moderate utilization of chemical fertilizers and the use of natural fertilizers permit the reconversion of the lands towards ecological agriculture. Thus, in county Brăila the areas on which crops were started under ecological (greening) system increased 1.5 times in 2013 opposed to 2009. The highest share of the areas cropped under ecological system is held by those cropped with sunflower, rice, wheat and maize.

In county Brăila the number of economic operators registered in the ecological agriculture increased, except the year 2013 and significant was the fact that in the total of them the highest share was held by producers, followed by processors and traders.

The share of the area cropped under ecological system in ratio to total agricultural area of the county Brăila registered an increase from 1.05% to 1.62%.

In the period 2014-2020 ecological agriculture becomes a measure in itself within the National Program for Rural Development, for which special reimbursable European funds are allocated in a percentage of 100%. The money is allocated for two directions, on two types of distinct activities, in other an ecologic operator can receive two European financial allocations. We speak about first the support granted for the reconversion to the methods of ecological agriculture, and in completion, financial support allocated for the maintaining the practices of ecological agriculture.

The compensatory payments will be granted for the *conversion to the system of ecological agriculture*, and the sums allocated will be for: agricultural crops on arable lands, inclusively fodder plants – 293 euro/ha/year; vegetables 500 euro/ha/year; 620 euro/ha/year; vines – 530 euro/ha/year; medicinal and aromatic plants – 365 euro/ha/year . These payments can be cumulated with the other payments types granted on area, respectively direct payments.

The farmers who are engaging voluntarily to *maintain practices and methods specific for the ecological agriculture* and are active farmers could get: for agricultural crops on arable land, inclusively fodder plants - 220 euro/ha/year; vegetables 431 euro/ha/year; orchards 442 euro/ha/year; vines– 480 euro/ha/year; medicinal and aromatic plants– 427 euro/ha/year.

The farmers who will orient towards the ecological agriculture will have priority to financing and thus it will be reached the goal that the Romanian bio products be present in the hyper markets, and Romania will be able to export processed products with a high value added.

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