

Territorial Analysis on Practicing and Conversion at the Organic Farming System in Romania

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Abstract *Agricultural area cultivated with organic products almost tripled in the past decade, from about 65,000 hectares in 2006 to over 175,000 hectares in 2015. Romania is in 9th place in EU in terms of cultivated area of organic farmland according to the latest data published by Eurostat, the year 2015 relative to the agricultural area of Romania, which is about 13 million hectares, the area cultivated with organic products is insignificant, accounting for less than 1%. Organic products are still a niche segment due to higher price compared to that of conventional products. This article proposes a regional analysis (on the 8 development regions of Romania) about the organic farming systems and the agriculture systems which are in the process of converting to organic agriculture.*

Key words Organic, Crops, Conversion, Development Regions

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INTRODUCTION

„Ecological farming” is a term attributed protected and Romania by the European Union to define this system of agriculture, is similar to the terms “organic farming” or “organic farming” used in other Member States. The role of organic farming is to produce a cleaner food, more appropriate to human metabolism, in full correlation with environmental preservation and development. One of the main goals of organic farming is the production of agricultural products and food fresh and authentic processes designed to respect nature and its systems.

MATERIALS AND METHODS

In Romania, organic farming applies to all sectors of agriculture – livestock, the vegetable, fruit growing and wine sector. In Romania, control and certification of organic products is currently provided by private inspection and certification bodies.

By 2015, in Romania worked 12 Inspection and certification bodies, which issued 12 515 organic farming certificates, noting that some activities were in conversion from issuing the certificate. For a complete agricultural activity to be considered organic, it must be transformed gradually from conventional farming to organic farming, requiring three years of conversion, and in the fourth year to be certified as fully organic. Of all, 2842 certificates issued were released in the vegetable sector for the most important agricultural crops (wheat, barley, oat, corn, sunflower, canola, soy, sugar beet, rice, hemp, potato). In order to establish the area cultivated in the ecological system, but also budding (in conversion) for each of the 8 regions were summed up all the operators certified by authorized bodies corresponding to all counties that make up each region.

Analyzing nationwide, the total area that can be found grown in organic agriculture system is observed that only 10 crops are found in ecologically completely (ECO) and the conversion system for the year I, II, III (C1, C2, 3).

RESULTS AND DISCUSSION

Inspection and certification bodies for organic farming were classified by region, and by implication, counties, making possible a non-equivocal compared with conventional agriculture.



Figure 1. Map of development regions in Romania

1. North-East Region

If we look at the region as a whole, on crops and cultivation systems, we see the following: organic area most records wheat being of 1,272.11 ha, followed by surface with corn (1,069 ha) and surface with soy (1,044.04 ha). In contrast, the smallest organic area spelt (1 ha) and potatoes (7.8 ha). The largest surface in conversion for sunflower stands for C1 (80.06 ha), followed by wheat (59.03 ha), the lowest being sugar beets (0.1 ha) and rape (0,4 ha). Regarding the conversion surfaces in C2, the first place is 51.59 ha with maize and soybean crop in last place with 0.35 ha.

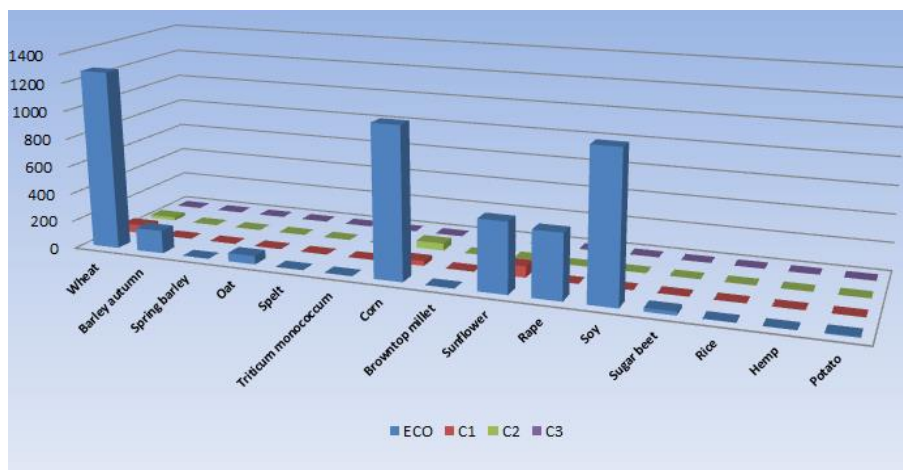


Figure 2. Total surfaces in organic / conversion in the North-East Region (ha)

2. South-East Region

From the data analysis is observed that the biggest organic area be found is for the wheat crop (12,423.014 ha), followed at a great distance, sunflower (4,885.57 ha), canola (4,459.55 ha), maize (4,099.25 ha), barley (2,181.31 ha), oats (223.82 ha), spelled (199.62 ha) and soybean (121.8 ha). In conversion on surfaces, it can be seen that for both types of conversion C1 and C2 are the main areas that are grown wheat, corn, sunflower, rape and barley. It is also seen that the conversion of one year, a larger area in the South East is planted with rice, which is approximately 1,365 hectares.

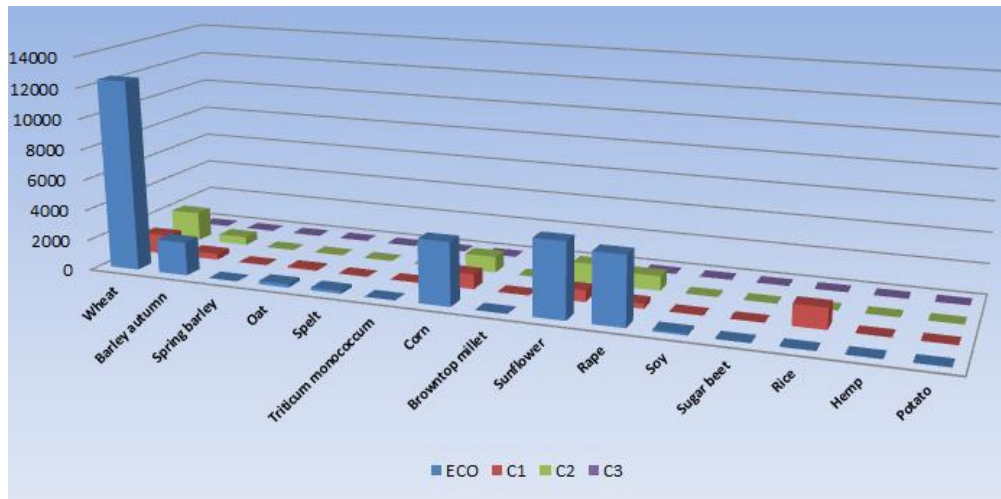


Figure 3. Total surfaces in organic / conversion in the South-East Region (ha)

3. South-Muntenia Region

Figure 4 shows the total area of the South-Muntenia, for each culture and each cultivation system. Thus, it can be seen that the organic area is the largest wheat crop (2,722.83 ha), followed in descending order by the following crops: winter barley (2,362.14 ha), corn (1,469.67 ha), rape (1,428.89 ha), sunflower (753.89 ha) and soybeans (360.1 ha), the smallest being the culture of potato (0.05 ha). Regarding the land in conversion, we can say that the highest values for both the first year and for the second crops are wheat, corn, barley, sunflower and canola seed. The largest area under conversion wheat is 623.76 ha, 610.27 ha system C1 and C2 system. In contrast, the smallest surfaces are planted with triticum monococcum, with values of 8.9 ha in the first year of conversion, ie. 8.09 ha in the second year of conversion.

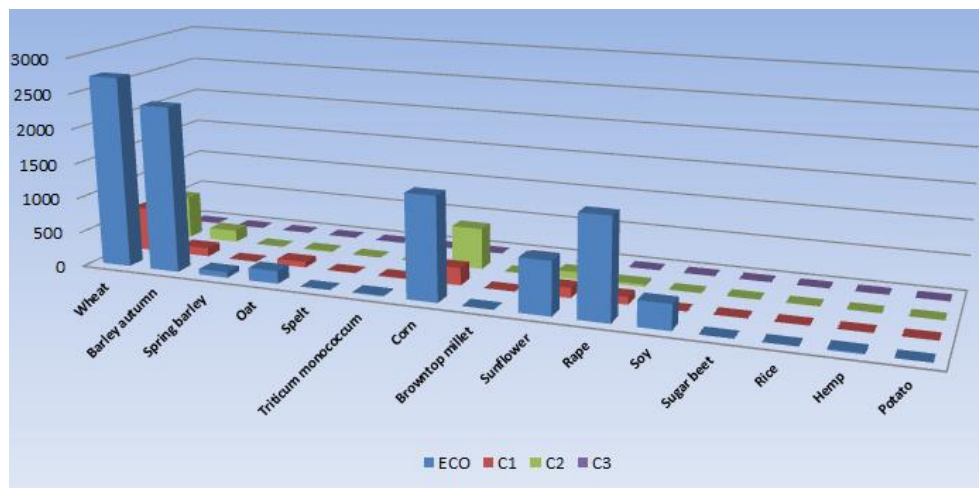


Figure 4. Total areas in organic / conversion in the South - Muntenia Region (ha)

4. South-West Region

If we analyze all the South West Region, given the cultivated areas in the four systems (ECO, C1, C2, C3) and existing cultures in these agricultural systems we can say, based on the chart below, the following: the surface of the more extensive, fully organic is present in wheat crop being of 431.68 hectares, followed by rape area of 159.39 hectares, the third area measuring 152.42 ha of corn, sunflower further surface (120.02 ha) and barley (68.6 ha). If we look upon conversion, a large area is occupied by culture sunflower in the first year of conversion (376.14 ha), but there and surfaces in the second year of conversion wheat, oats, corn, sunflower, as and potatoes.

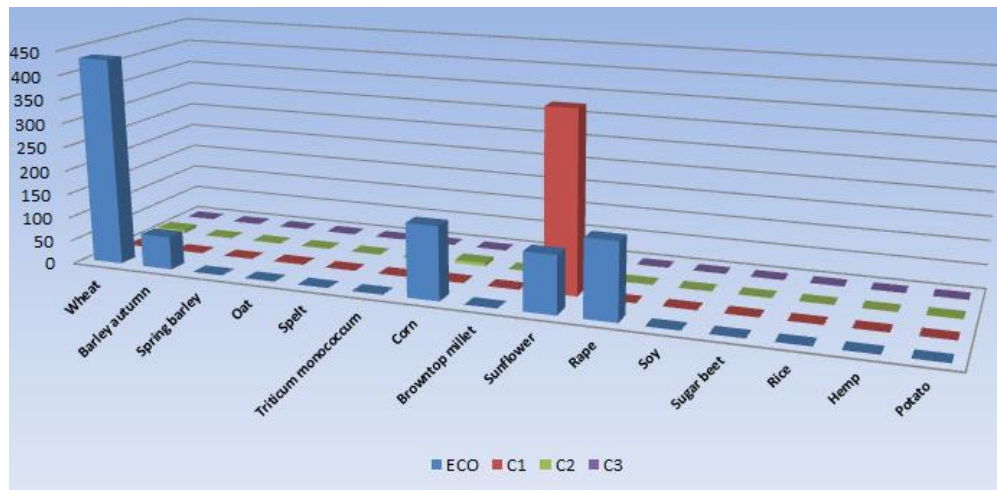


Figure 5. Total Surfaces in organic / conversion in the South-West Region (ha)

5. Western Region

In this region, the operators certified organic farming are less numerous than other regions, one reason being that in one of the counties in the region have not identified any operator. As we submit and schedule organic area the largest in the Western region is wheat crop (2,765.68 ha), followed by soybean crop with 2,033.79 ha, rice (1,482.21 ha), sunflower (1386.24 ha) and corn (260.96 ha). All organically grown longer and barley, oats, spelled, canola, hemp, potatoes and sugar beet, the latter having the smallest area (0.052 ha).

In terms of the conversion, the Year 1 is as follows: for wheat crop is the largest area of 701.34 ha, the second being the 301.3 ha of corn, third place the soy 270.47 ha, reaching the lowest to the barley 1.31 ha. If we refer to the second year of conversion can say that area of wheat "gaining ground" and here with 288.05 ha, followed by canola seed (154.05 ha), sunflower (149.65 ha) and triticum monococcum (4.66 ha).

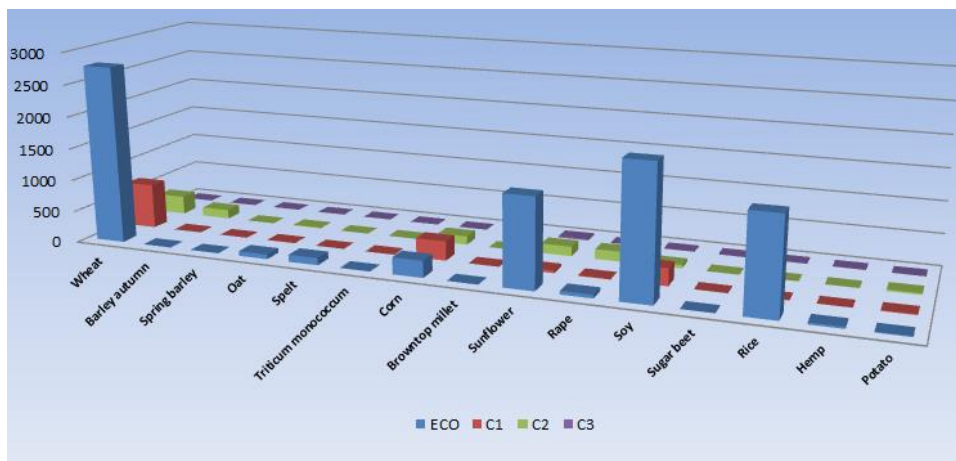


Figure 6. Total areas in organic / conversion in the Western Region (ha)

6. North-West Region

As evidenced in the graph, the largest acreage in complete ecological system is maize, with a size of 522.08 ha, followed by wheat with the size of 306.7 ha, gradually falling back to the lower surface of 11.25 ha rice in autumn. If the surfaces in conversion system, we find that the surfaces in type conversion C2 have higher frequency, namely 171.84 hectares of corn, 31.97 ha of oats, 25.05 ha of potatoes last in the culture of rice 3.87 ha. In the first year of conversion surfaces are quite small and is overdue as a variety of crops, the largest area of 10.05 hectares being recorded for wheat, barley reaching as to cultivate only 1 ha.

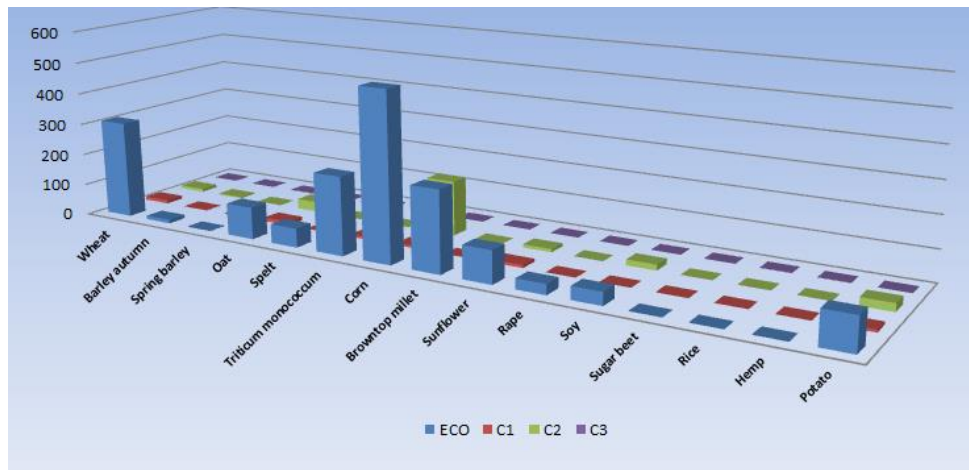


Figure 7. Total Areas in organic / conversion in the North-West Region (ha)

7. Central Region

In order to achieve the database for the Center, were discovered 389 operators active in this area, which are grouped by county as follows: 284 in Alba, only 2 in Brasov, 41 operators in Covasna, 7 of Harghita, Mures County turning 42, and the remaining 13 in Sibiu. The chart shows that maize is grown on the largest area in the farming system completely environmentally friendly, with a size of 50.67 ha, ranked in second crop of potatoes, with 39.05 ha, followed by wheat with 33.87 ha continuing with oats, brown millet, barley and sunflowers, the latter being the most reduced area of just 2.7 hectares.

Conversion area is as follows: the first year of conversion are grown with maize (4.64 ha), potatoes (1.62 ha), wheat (0.84 ha) and oats (90.2 ha). On the land in the second year of conversion are grown: potato (16.05 ha), maize (11.32 ha), wheat (5 ha), oats (3.57 ha) and barley with only 1 ha.

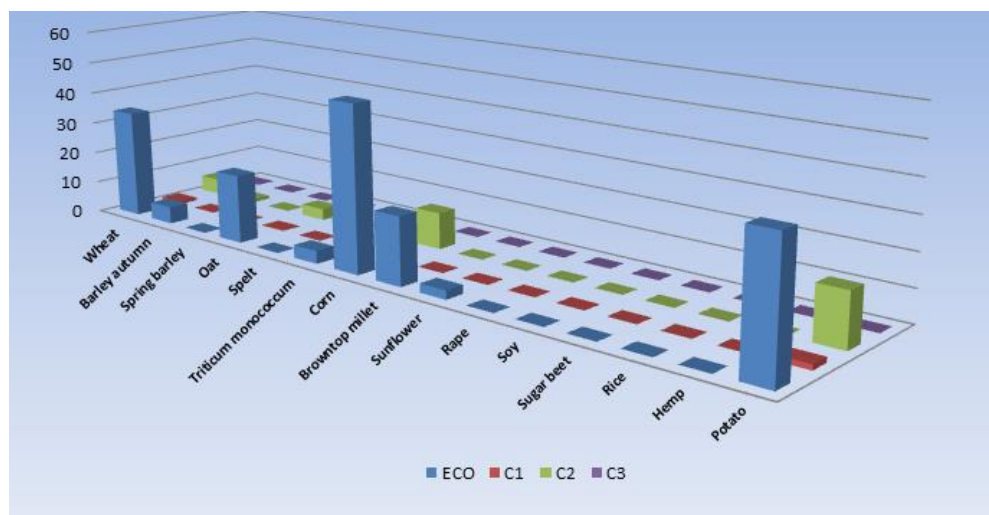


Figure 8. Total areas in organic / conversion in the Central Region (ha)

8. Bucuresti-Ilfov Region

Nationally, Bucharest-Ilfov region is the smallest in size of all the eight regions. Here was identified only 11 organic operators certified and all were declared in the Municipality of Bucharest, but they are having surfaces Bucharest area and also in Ilfov County.

As can be seen from the data analysis, organic area is quite large, since economic operators active in this area are commercial entities cultivating large areas. The largest organic area is present in sunflower crop ie 1854.15 ha, followed by wheat crop, to 1800.43 ha, followed by rice crop with 1293.84 ha, the rape (367.8 ha), corn (349.42 ha) and barley with an area of 222.13 ha.

Surfaces in conversion system are structured as follows: for the first year in conversion surfaces are cultivated with wheat (13.12 ha), corn (2.55 ha) and oats (0.43 ha); for the 2nd year of conversion are found areas with rice (535.71 ha), wheat (74.8 ha), corn (10 ha) and barley (4 ha).

Of the total area of 6528.39 ha for organic farming, the largest share is held by organically farming, representing 90.18% (the highest percentage in the district), in contrast with the lowest share recorded OA system converting the first year with a share of 0.28%, cultures conversion system is in the second year is 9.56% of the total ecological Bucharest-Ilfov region. Cultures prevalent in this region grown in organic farming systems (fully or in conversion) are wheat, barley, oats, corn, sunflower, rape, rice.

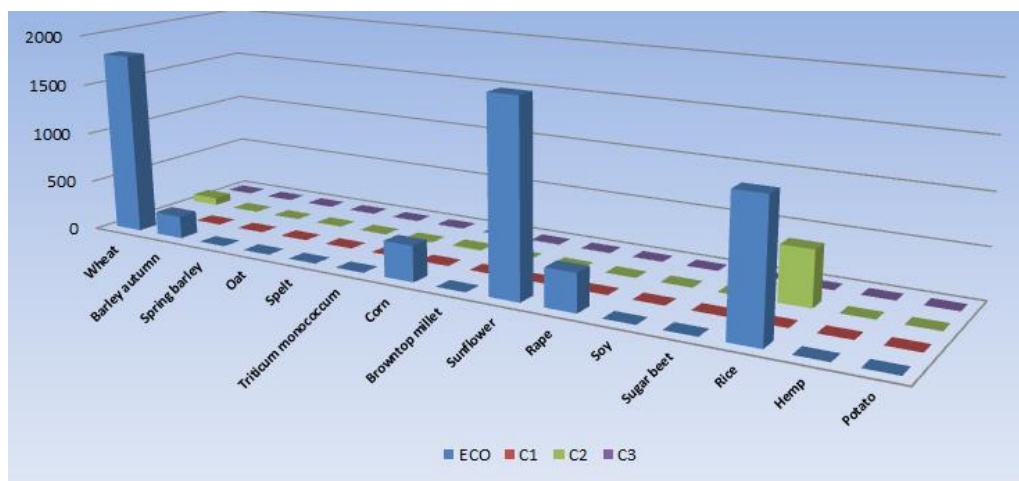


Figure 9. Total areas in organic / conversion in Bucharest-Ilfov Region (ha)

CONCLUSIONS

From the analysis by region can be extracted results nationwide. As shown in the graph in Figure 10, nationally, areas with scope biggest shows in the ecological system, while areas with scope lowest shown in the converter third year.

In the **ecological complete system (ECO)**, the largest surface is recorded for the wheat crop, with 22445.362 ha, while in contrast, the smallest crop is cultivated area of sugar beet, with only 34 447 ha. For other cultures, values fluctuate as follows: barley (5200.68 ha – 5116.62 ha winter barley and 84,06 ha spring barley), oats (702.29 ha), corn (8686.434 ha), sunflower (9862.63 ha), rape (744.98 ha), soybean (3634.8 ha), rice (1482.21 ha), hemp (50.5 ha), potato (189.72 ha), other grains - spelled, millet brown, triticum monococcum (910.2 ha).

For wheat crop, land in conversion scheme first year is quite close to the surface in the second year conversion system, the difference between the two is 46.6 ha. If the converter third year there is an area of 3.38 ha for wheat, the areas under wheat that is in converting first and second year being approximately 900 times higher than the converter surfaces in the third year.

Analyzing the **system conversion in the first year (C1)** shows that the largest area owned all of the wheat crop with 2845.2 ha, followed by corn (1837.99 ha), sunflower (1565.51 ha), rice (1365.48 ha), barley (607.68 ha), rape (515.32 ha), soybean (271.87 ha), oats (214.68 ha), other grains - triticum monococcum (53,78 ha), potato (39.25 ha) and the smallest recorded for sugar beet crop, with 0.1 ha.

In the **second year conversion system (C2)** the situation is similar. It appears that most of the surface is recorded for the wheat crop, with 2891.8 ha, followed by corn (2117.95 ha), sunflower (1586.3 ha), rape (899.8 ha), barley (859.5 ha), rice (537.7 ha), soybean (144.3 ha), oats (77.88 ha) and potato, with 60.85 ha.

Analyzing the **system conversion in the third year (C3)** shows that the largest area is no longer present in wheat crop, as the other conversions since I and II. Values of the conversion surfaces in this system were: soybean (1039.06 ha), followed by 20.68 ha of sunflower, grain (Triticum monococcum) with 15.36 ha, corn (10.11 ha), barley (6.87 ha), wheat (3.38 ha), oats (1 ha) and the smallest potato crop records, with 0.41 ha.

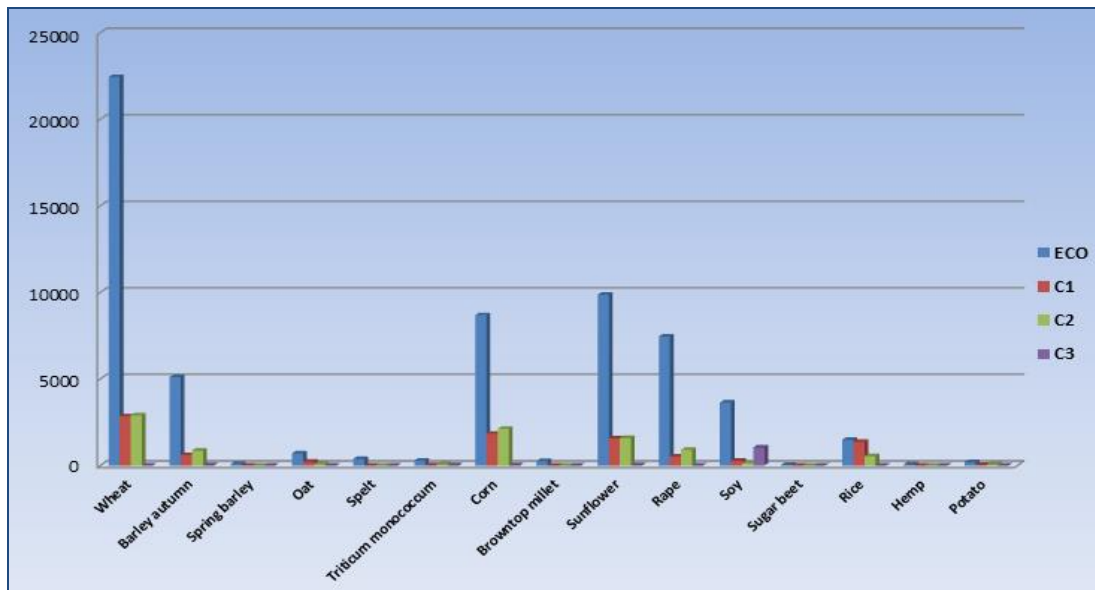


Figure 10. Total area cultivated and certified in organic farming system

In conclusion, the whole country, the areas with the largest extent shown in the ecological system, while areas with the lowest extent of the converter is shown in the third year (3). Expressing percentage values for surfaces in complete ecological wheat crop holds a share of 37% of the total for this type of agriculture, while in contrast, the lowest share falls sugar beet crop 0.06 %.

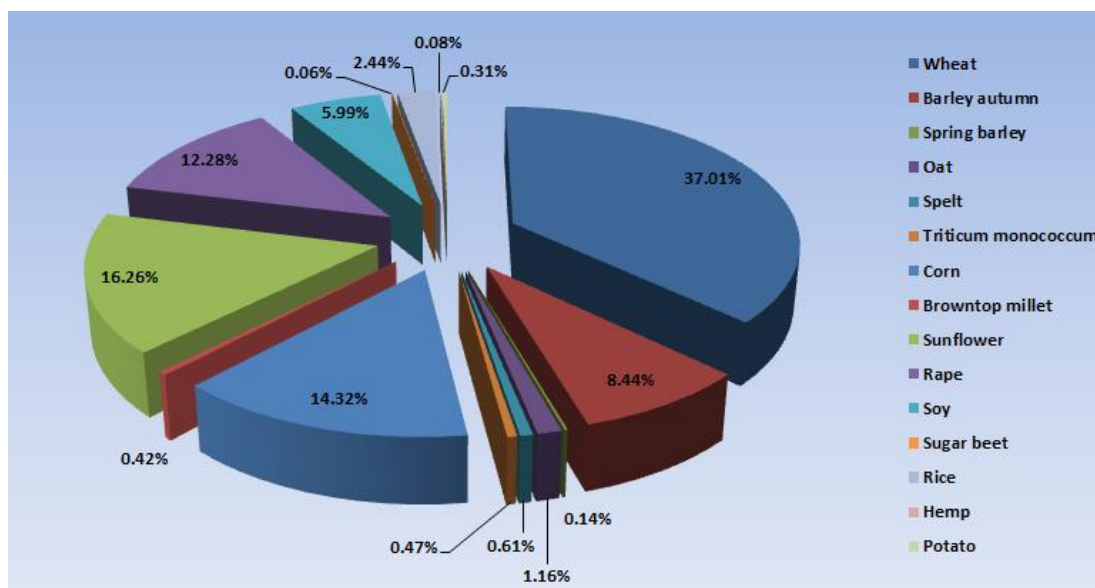


Figure 11. The structure of completely organically cultivated areas

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