

## STUDY ON THE PRODUCTION AND MARKETING OF SUNFLOWER SEEDS IN THE CENTER REGION

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### **Abstract**

*The present paper highlights the main aspects regarding the production and marketing of sunflower seeds in the Center Region of Romania. At present, a special emphasis is placed on the production of sunflower seeds, as they have a double importance. Sunflower seeds provide, on the one hand, a significant share for the animal feed, and on the other hand they are used for human consumption. According to studies conducted sunflower seeds contain a number of vitamins necessary for the human body. In order to carry out a study as realistic as possible, the most appropriate indicators were analyzed, such as: the areas cultivated with sunflower seeds; total production of sunflower seeds; average production per hectare of sunflower seeds; prices for sunflower seeds. The analyzed indicators targeted the Center Region of Romania for the period 2012-2017. The statistical data used in this research were provided by the National Institute of Statistics.*

**Key words:** commercialization; sunflower seeds; total production of sunflower seeds; prices; Center Region

### INTRODUCTION

Sunflower comes from the Central and North America, being part of the Order Compositales, the Compositae family and the genus *Helianthus* L. In Romania, sunflower represents an oil plant that has a high degree of spread in the territory. The most significant surfaces cultivated with sunflower are found especially in the Romanian and Western Plains, as well as in Dobrogea (<https://www.agro.basf.ro/ro/stiri/fermier-in-romania/cultura-de-floarea-soarelui-toate-informatiile-de-care-ai-nevoie.html>).

At present, the sunflower represents a plant with many uses such as: feeding the population; feeding animals; industry. Worldwide, plants such as sunflower, rapeseed, hops, soybean and sugar beet present a wide range of uses in the food industry in order to obtain various and high-quality products for human consumption (Chiurciu I. A., 2015), (Dona I., 2015) (Soare E., et al., 2018).

It is necessary to specify that the sunflower oil also presents energetic uses. It can be used as an additive or a substitute for fuel, especially due to the physical properties equivalent to those of the diesel fuel ([https://www.pestre.ro/blog/floarea-soarelui-de-la-plantare-la-recoltare/#Importanta\\_culturii\\_de\\_floarea\\_-\\_soarelui](https://www.pestre.ro/blog/floarea-soarelui-de-la-plantare-la-recoltare/#Importanta_culturii_de_floarea_-_soarelui)).

In Romania, the sunflower is the most important plant for the honey production that is characterized by: increased number of flowers on the inflorescence and a good secretion of nectar (*Stefan V., et al., 2008*).

In addition to the many uses that have been highlighted for sunflower, the aspects that make this crop plant attractive to farmers have been identified. Of these, we specify two key aspects that directly contribute to increasing the profitability of the sunflower culture: total mechanization and low costs per hectare compared to other crops, which at the end of the season are sold at very close prices, (*Soare E., Chiurciu I.A. 2018*).

## MATERIALS AND METHODS

The present study analyzed a series of indicators that best reflect the evolution of the sector of production and marketing of sunflower seeds in the Center Region. The indicators analyzed in this study are: the areas cultivated with seeds in the Center Region; global production of sunflower seeds; average production per hectare of sunflower seeds; prices for sunflower seeds. The statistical data used in the present research were taken from the National Institute of Statistics. The period for which the current study was conducted was 2012-2017. The present study was based on a series of books, articles, statistical data that provided a series of information regarding the production and marketing of sunflower seeds. The most important information on the one hand, are presented in the current research, and on the other, the citations related to the materials that provided the information can be found.

## RESULTS AND DISCUSSION

**Surface cultivated with sunflower.** The surface cultivated with sunflower in the Center Region recorded changes during the analyzed period (see fig. 1). In 2012, the smallest area cultivated with sunflower in this region was registered, of 5,455 ha. In 2013, there was a significant increase of 50.8%, compared to 2012. In 2014, compared to 2013, there was an increase in the area cultivated with sunflower (+ 16.0 hectares). In 2015, compared to 2014, the cultivated area decreased (-217.0 hectares). In 2016, compared to

2015 the area with sunflower increased by 8.44%. In 2017, in the Center Region the area cultivated with sunflower reached the maximum level (11,367 hectares) during the analyzed period. In 2017, compared to 2012, the cultivated area increased by 108.3%. The oscillation of the cultivated areas with the sunflower in this region was due, especially to the interests of the farmers.

In the Center Region, in 2017, 1.14% of the area cultivated at national level could be found. From the data presented, it can be easily observed that in this region a small area is cultivated with sunflower, compared to the areas cultivated in the other development regions. This region has a low degree of favorability for the sunflower culture. At the national level, in 2017, 998,415 hectares were cultivated with sunflower, which placed Romania at the top of the ranking of sunflower cultivating countries at European Union level.

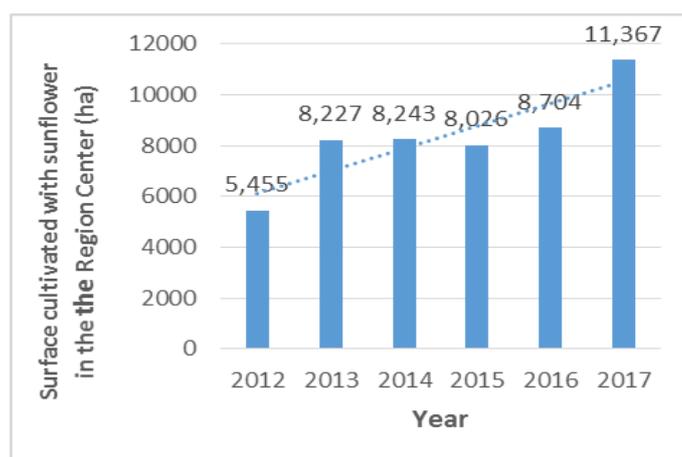


Fig. 1. Dynamics of the surface cultivated with sunflower in the Center Region, between 2012-2017 (hectares)

Source: Own graphic based on the data from the National Institute of Statistics, 2019

Regarding the areas cultivated with sunflower in the counties from the Center Region, they have registered changes from year to year (see fig. 2). It is necessary to specify that the county of Mures has the largest areas with sunflower. In 2017, in this county was registered the largest area cultivated with sunflower, of 5,770 ha. The area cultivated in this county in 2017, represented 50.8% of the area cultivated in the Center Region. In Alba county the cultivated areas ranged between 1,683-4,680 ha. In Sibiu county, the largest area with sunflower was 1,173 ha (2013). In 2016, in the county

of Brasov was registered the largest area with sunflower, of 228 ha. In Covasna county, in 2016, the smallest area cultivated with sunflower was registered, of only 6 hectares.

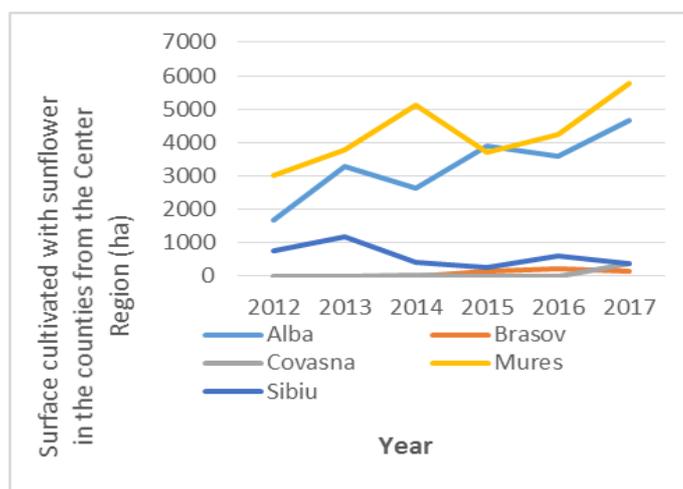


Fig.2. Dynamics of the surface cultivated with sunflower in the counties from the Center Region, between 2012-2017 (hectares)

Source: Own graphic based on the data from the National Institute of Statistics, 2019

**Production of sunflower seeds.** Sunflower seeds production in the Center Region between 2012-2017 recorded oscillations from year to year (see fig. 3). The highest production was 30,975 tons (2017). This increased production was due on the one hand, to the cultivated areas and on the other, to the yields achieved per hectare (*Lilea C.P.F., et al. , 2018*). The production of sunflower seeds in 2017 represented 1.06% of the national production. In 2017, in the Center Region the total production of sunflower seeds increased by 315.9%, compared to 2012. At the opposite pole, the lowest production of sunflower seeds was recorded in 2012 (7,448 tones). This reduced production was in close correlation with the number of hectares cultivated with sunflower, in 2012.

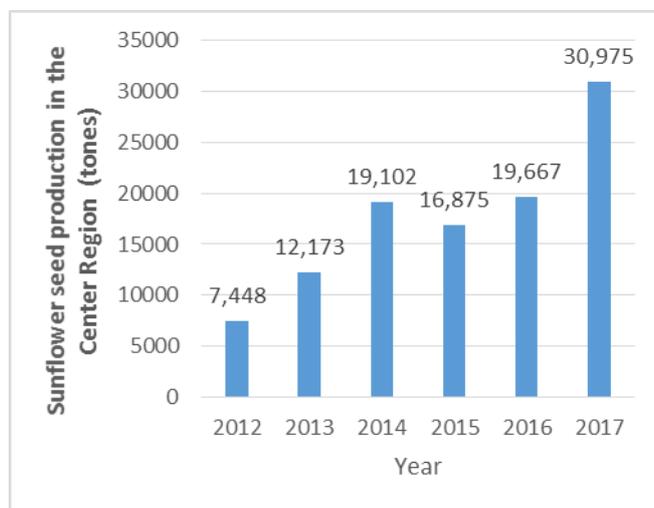


Fig.3. Dynamics of sunflower seed production in the Center Region, between 2012-2017 (tonnes)

Source: Own graphic based on the data from the National Institute of Statistics, 2019

In the counties from the Center Region the production of sunflower seeds in the period 2012-2017 has changed from year to year (see fig. 4). These changes were due to both the sunflower cultivated surfaces and the climatic factors. As expected, during the period under analysis in Mures County, the most significant sunflower seed production was recorded. In 2017, the maximum point of sunflower seed production at the county level of 17,064 tonnes was reached.

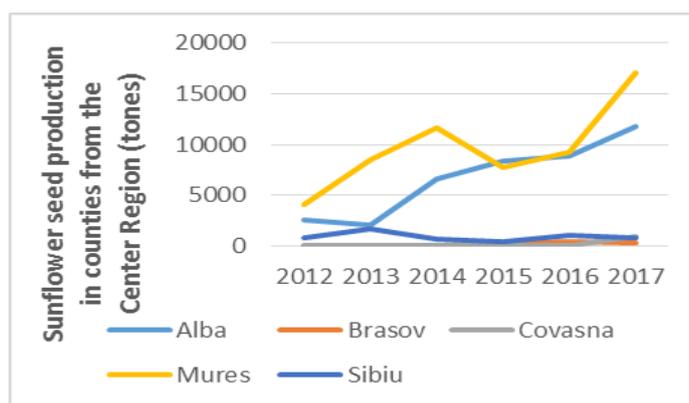


Fig.4. Dynamics of the sunflower seed production in counties from the Center Region, in the period 2012-2017 (tonnes)

Source: Own graphic based on the data from the National Institute of Statistics, 2019

In Alba county, the sunflower seed productions ranged from 2,099 tones to 11,830 tones. In Sibiu County, in 2016 the largest production of sunflower seeds, of 1,078 tons, was registered. In Brasov County in 2017, compared to 2015, the sunflower seed production increased by 9.9%, but in absolute value the production ranged from 252 tons to 435 tons. The lowest production was achieved in 2015 (10 tons), in Covasna county. Also, in this county, in 2017 there was a production of 982 tones, which represents a substantial increase, compared to 2015.

**Average production per hectare of sunflower seeds.** During the analyzed period the average production per hectare of sunflower seeds in the Center Region varied from year to year (see fig. 5). The lowest average production per hectare was recorded in 2012 (1,365 kg / ha). Between 2012-2014 the average production per hectare for sunflower seeds has been on an upward trend from 1.365 kg / ha (2012), to 2.317 kg / ha (2014). In 2015, there was a decline for the average production per hectare for sunflower seeds, compared to 2014. Between 2015-2017 the average production per hectare for sunflower seeds was on an upward trend, from 2,103 kg /ha (2015), the 2,725 kg/ ha (2017). The average production per hectare for sunflower seeds in the Center Region in 2017, compared to 2012, increased by 99.6%. This increase was due to the combination of several factors: favorable climatic conditions; the use in culture of some productive varieties and the application of specific incentives for the sunflower culture.

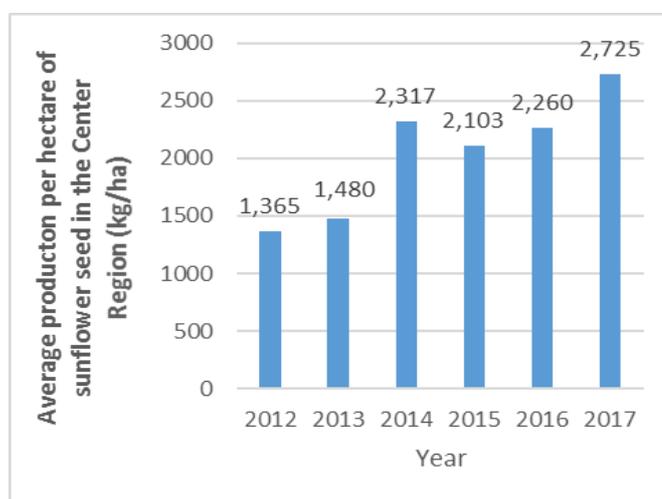


Fig.5. Dynamics of the average production per hectare of sunflower seeds in the Center Region, in the period 2012-2017 (kg / hectare)

Source: Own graphic based on the data from the National Institute of Statistics, 2019

In the period 2012-2017, in the counties of the Center Region we have witnessed changes regarding the average yields per hectare for sunflower seeds (see fig. 6). In Alba county, in 2013, the smallest average production per hectare was registered from all the counties of the Center Region, of 638 kg / ha. In 2014, in this county there is a substantial recovery of the average production per hectare for sunflower seeds, reaching 2,514 kg/ha, exceeding the average production per hectare of 2,317 kg achieved in the Center Region, as well as the average production recorded nationally, of 2,187 kg.

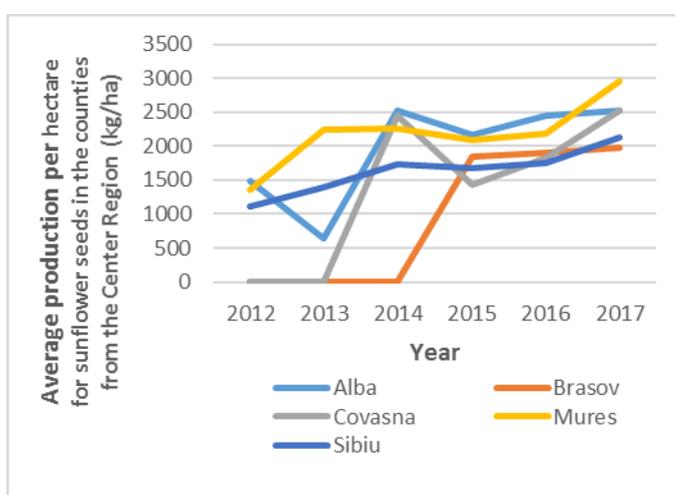


Fig 6. Dynamics of the average production per hectare for sunflower seeds in the counties from the Center Region, between 2012-2017 (kg / hectare)

Source: Own graphic based on the data from the National Institute of Statistics, 2019

In Brasov county, the average production per hectare ranged from 1,853 kg / ha to 1,979 kg/ ha. In Covasna county in 2017, compared to 2014, the average production per hectare increased by 2.8%. In Mures county, the largest production per hectare for sunflower seeds was 2,957 kg / ha. The average production per hectare in Mures County in 2017 exceeded the average production per hectare for sunflower seeds at the national level for the same period, which was 2,917 kg/ ha. In Sibiu county the average production per hectare for sunflower seeds increased by 92.0% in 2017, compared to 2012.

**Average purchase price.** In 2017, in the Center Region there was an average purchase price of 1.23 lei/ kg for sunflower seeds. The average

purchase price registered in this region was lower, compared to the one registered at national level for the same period, which was 1.37 lei / kg. In 2017, in the Center Region, the average purchase price for sunflower seeds decreased by 6.8%, compared to 2016.

## CONCLUSIONS

Following the analysis of the main indicators specific to the sector of production and marketing of sunflower seeds in the Center Region for the period 2012-2017, the following were found:

- The smallest surface cultivated with sunflower was 5,455 ha (2012);
- The largest area cultivated with sunflower was registered in 2017 (11,367 hectares);
- In 2017, the most significant area cultivated with sunflower, of 5,770 ha was registered in Mures county;
- In 2017, the production of sunflower seeds in this region represented 1.06% of the total production obtained internally;
- Mures County, in 2017, achieved the largest production of sunflower seeds, of 17,064 tons;
- In 2017, compared to 2012, in the analyzed region the average production per hectare for sunflower seeds increased by 99.6%;
- In 2013, in Alba county the smallest average production per hectare of the analyzed period was realized, of only 638 kg / ha;
- The average purchase price for sunflower seeds in the analyzed region decreased by 6.8%, in 2017, compared to 2016;
- The Center Region does not have an important place on the sunflower seeds market, as this culture is not specific to the area, presenting a small degree of favorability.

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