

## RESEARCH ON THE WHEAT MARKET IN THE SOUTH-MUNTENIA REGION, ROMANIA

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### Abstract

*The research on the wheat market in the South-Muntenia Region of Romania highlights the dynamics of the main specific indicators for the period 2014-2018. Currently, Romania is an important player on the wheat market in the European Union, because it ranks fourth in terms of wheat production. In 2018, Romania achieved 7.3% of wheat production obtained in the European Union. Also in 2018, the contribution of the South-Muntenia Region to the production made in Romania was of 28.46%. In Romania, significant wheat productions are made due to several factors. Favorable conditions for wheat cultivation are a key factor, which offers the possibility of spreading this crop throughout the country. In the present research, the following indicators were analyzed: the area cultivated with wheat; wheat production achieved, average production per hectare and average purchase price. The analysis of these indicators was performed at the level of the South-Muntenia Region, as well as at the level of the counties that are part of this region. The statistical data that was used in this research was taken from the National Institute of Statistics.*

**Key words:** average purchase price, production, South-Muntenia Region, Romania, wheat

### INTRODUCTION

Wheat is grown on all continents, between the parallels 30-600 North latitude and 25-400 South latitude. This determines the following situation, namely: every month of the year, in a certain region of the world wheat production will be obtained wheat production. Wheat is included in the genus *Triticum*, family Gramineae. The genus *Triticum* consists of a significant number of wheat species, cultivated and wild forms. In time, there was no unitary classification, being classified differently, according to various criteria [5, 6]. The Middle East is the place where wheat culture was first identified, being considered a cereal plant cultivated since ancient times [10, 12,13, 14]. Wheat is a cereal with a number of uses, but of these it is necessary to specify the most representatives:

- it is a key component for feeding the population, because by grinding it, flour is obtained, which is the basic raw material for obtaining bread. Today, bread is the staple food for more than 40% of the world's population;
- provides some of the animal feed;
- raw material for certain sectors of activity etc.

Another important aspect is represented by the advantages offered by the wheat culture:

- wheat grains have a richer content in protein substances, compared to other cereals;
- grains have a high content of vitamins (B1; B6; K etc.);
- wheat is transported quite easily, even over long distances;
- it is a good precursor for many cultures;
- the cost of obtaining wheat is lower compared to other crops;
- a strong point for wheat cultivation is represented by the fact that the cultivation technology is completely mechanized etc., [5, 13].

Wheat is cultivated in Romania on significant areas and on various types of soil. The main soil types recommended for wheat cultivation are: medium, loam-clayey and loamy. The oldest wheat crops in our country have been dated for over 2500 years. Two species of wheat are important for Romania, namely: *Triticum durum* Desf. and *Triticum aestivum* L [5, 14].

In our country, both organic and mineral fertilizers are applied to autumn wheat. A low specific consumption of nutrients was found.

Nitrogen and phosphorus fertilizers applied to winter wheat in Romania directly contribute to increasing production [1, 5].

The South-Muntenia Region presents good conditions for the wheat production, and three of the component counties (Teleorman; Giurgiu and Călărași) were included in the first class with a high degree of favourability for this crop [5, 15].

## MATERIALS AND METHODS

In the present research were analyzed the most representative indicators specific to the wheat market, related to the South-Muntenia Region, but also to the counties that are part of this region. It is necessary to mention these indicators: the area cultivated with wheat; the wheat production; the average production per hectare for the wheat culture and the average purchase price. The interval for which the research was performed is 2014-2018. The indicators that were analyzed in the specified range recorded oscillations that were due to several factors. The main results of the research were presented in own graphics, so that their dynamics can be easily noticed. The data underlying this research were provided by the National Institute of Statistics. In order to carry out this research, a series of specialized materials were consulted, which are also cited at the end of this paper.

## RESULTS AND DISCUSSIONS

From the data provided by the National Institute of Statistics it can be observed that the area cultivated with wheat in the South-Muntenia Region, registered changes in the period 2014-2018 (see Fig.1). In 2014, the area cultivated with wheat from the South-Muntenia Region represented 27.95% of the cultivated area with wheat at national level, and in 2018, this region held a share of 27.83% of the total. The most significant area cultivated with wheat in this region was registered in 2014 (590,583 ha). Following some calculations, it was found that the area cultivated with wheat in the South-Muntenia region increased by 28.57% in 2014, compared to 1990. This increase was due to a

combination of factors, but one of these factors was decisive, namely: subsidies granted for cereal crops. It is necessary to specify that the smallest area cultivated with wheat in the analyzed region was 582,361 ha (2017). It was observed that the area cultivated with wheat in the South-Muntenia region decreased by 1.40%, compared to 2014. In 2018, the area destined for this crop increased by 1.16%, compared to 2017, when the minimum point for the area cultivated with wheat in the studied region was registered. From the data presented and analyzed it is observed that the area cultivated with wheat in 2018 is lower than the area cultivated in 2014. In 2018, there was a decrease of the cultivated area by 0.25%, compared to 2014 [2].

This decrease of the registered area in 2018, compared to 2014, does not represent a significant decrease, but it can highlight the fact that agricultural producers base their decisions on the structure of crops, differently from one year to another.

An aspect that needs to be emphasized is the fact that, in the conditions of the market economy, the farmers have to adapt their crops according to the requirements of the internal market and the external market.

In Romania there are several forms of support for wheat cultivation, such as: direct payment schemes; transitional national aid 1 (ANT1); state aid for the diesel used in agriculture [7].

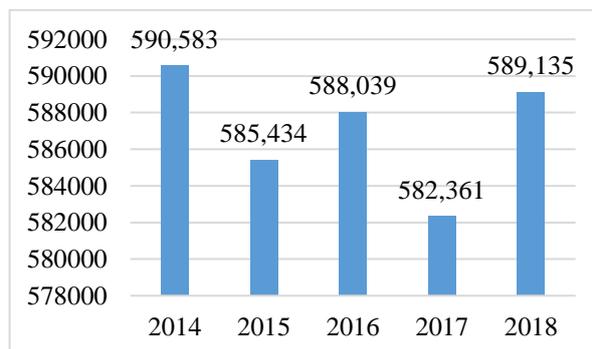


Fig. 1. Dynamics of the area cultivated with wheat, in the South-Muntenia Region, Romania (hectares)  
Source: [8].

Regarding the areas that were destined for wheat cultivation in the counties from the South-Muntenia Region during the analysed period, it was observed that they registered variations from one year to another (Fig. 2).

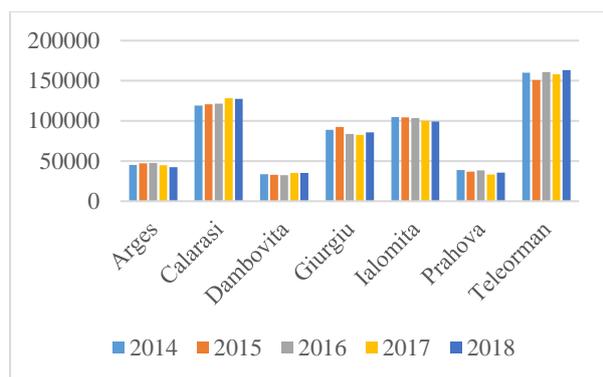


Fig. 2. The evolution of the wheat area in the counties from the South-Muntenia Region, in the period 2014-2018 (hectares)  
 Source: [8].

The first three positions in the ranking of the counties that have the most significant areas cultivated with wheat in the South-Muntenia Region are occupied as follows: Teleorman; Calarasi; Ialomița. From the presented data it can be observed that, in 2018, Teleorman county registered the largest cultivated area with wheat of 163,385 ha. In the analyzed year, this county cultivated 27.73% of the cultivated area with wheat at the level of the entire region and 7.72% of the surface destined for this crop at national level. In 2018, the area cultivated with wheat in Teleorman County increased by 2.03%, compared to 2014. In the situation in which the reporting is made comparative with the year 1990, it is found that, in 2018, the area cultivated with wheat increased by 51.67% in Teleorman county. The second place is occupied by Călărași county. Here, the largest area cultivated with wheat was recorded in 2017 (128,280 hectares). This county had a share of 22.02% of the area cultivated with wheat in the South-Muntenia Region and 6.24% of the area cultivated with wheat at national level, in 2017. In 2018, there was a decrease by 0.79%, compared to 2017, of the area destined for wheat cultivation. Ialomița County ranks third in the top. The largest area cultivated with wheat in this county was 104,771 hectares (2014). In this county, in 2014, was cultivated 17.74% of the area cultivated with wheat at the level of the South-Muntenia region and 4.95% of the area cultivated with wheat in Romania. In 2018, in Ialomița County, it was easily found a decrease of 5.27% of the area destined for wheat

cultivation, compared to 2014, when the largest area with wheat was registered. Smaller areas cultivated with wheat, in 2018, were registered in the counties: Giurgiu (85,861 hectares); Argeș (42,367 hectares); Prahova (35,688 hectares) and Dâmbovița (35,302 hectares).

The total wheat production from the South-Muntenia Region registered changes in the interval subjected to analysis (see fig.3). In this region the lowest wheat production was recorded in 2014 (2,212,388 tons), and the highest wheat production was of 2,985,541 tons in 2017. It is easy to see that in 2017, the wheat production realized in the South-Muntenia Region represented 29.75% of the production realized in Romania.

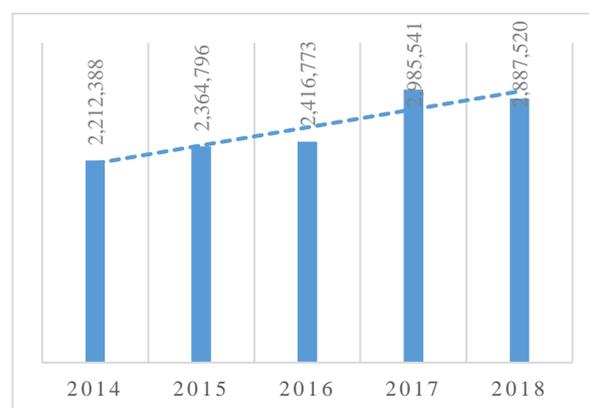


Fig. 3. Dynamics of wheat production in the South-Muntenia Region, in the period 2014-2018 (tons)  
 Source: [8].

In 2017, there was an increase of 34.94% in wheat production, compared to 2014. In this region in 2018, the wheat production decreased by 3.29% compared to 2017. In 2018, at the national level was achieved a significant wheat production, which placed Romania on the fourth place in the ranking of the wheat producing countries in the European Union. Romania, in 2018, held a share of 7.3% of the wheat production achieved in the European Union. According to the statistics published in 2018, 75.8% of the wheat production in the European Union was obtained in the following countries: France; Germany; United Kingdom; Romania; Poland; Spain and Italy [9, 11]. Wheat production in the counties of the South-Muntenia Region fluctuated from one year to another (Fig. 4). The production differences that were registered were due, on the one hand,

to the yields registered per hectare, and on the other hand, to the areas that were destined in each county for wheat cultivation. It is necessary to mention, in addition to the factors specified above, the lack of drought that directly contributed to the achievement of increased production [15].

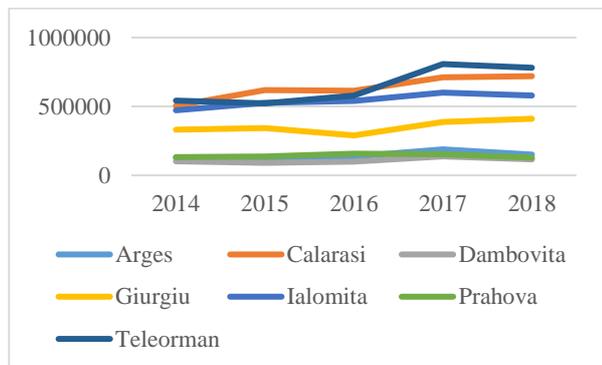


Fig. 4. Dynamics of wheat production in the counties of the South-Muntenia Region, in the period 2014-2018 (tons)  
 Source: [8].

The largest wheat production was registered in Teleorman County, in 2017 (807,624 tons). This production places this county on the first place in the ranking of wheat producing counties in the South-Muntenia Region. Teleorman County, in 2017, achieved 27.05% of the production achieved in the South-Muntenia Region and 8.04% of the total production registered in Romania. At the level of 2018, the whole Teleorman county occupied the first position in terms of wheat production achieved with 781,749 tons. In 2018, in this county the wheat production increased by 44.09%, compared to 2014 and decreased by 3.21%, compared to 2017. Călărași County, in 2018, was ranked second in terms of wheat production, with 719,600 tons. The production obtained in Călărași County in the year subjected to analysis represented 24.92% of the total production registered in the South-Muntenia Region and 7.09% of the wheat production achieved at national level. The third position in this ranking for 2018 is occupied by Ialomița County, with 580,541 tons. This county achieved in 2018, 20.10% of the production in the South-Muntenia Region, respectively, 5.72% of the production of Romania. At the opposite pole, the lowest wheat production for 2018 was registered in

Dâmbovița County (117,118 tons). This county obtained in 2018, only 4.05% of the production made in the South-Muntenia region [3]. In the interval subjected to analysis in the South-Muntenia Region, the average production per hectare for wheat registered oscillations (Fig. 5).

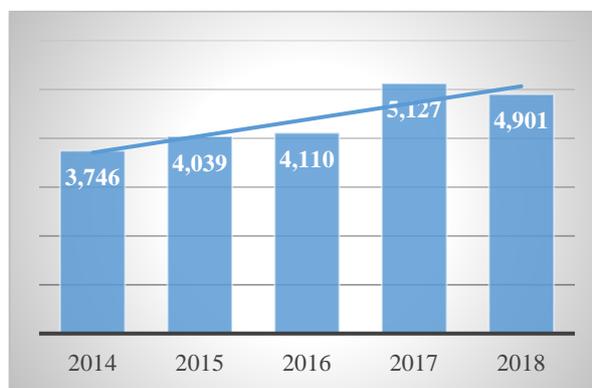


Fig. 5. Dynamics of average production per hectare of wheat in the South-Muntenia Region, in the period 2014-2018 (kg/hectare)  
 Source: [8].

The lowest average production per hectare for wheat was achieved in 2014 (3,746 kg/ha), and the highest was of 5,127 kg/ha (2017). The average productivity per hectare for the wheat culture in 2017, registered in the South-Muntenia Region exceeded the national average, which was of 4,888 kg/ha. In 2017, the average productivity per hectare for wheat increased by 36.86%, compared to 2014. This representative increase related to the average productivity per hectare for wheat cultivation was based on several factors such as: favourable weather conditions for wheat production; the use in culture of selected varieties; efficient pest control etc. In 2018, there was an increase of 30.83% of the average productivity per hectare for wheat, compared to 2014, but also, a decrease of yield of 4.41%, compared to 2017. In the South-Muntenia Region, in 2018, the average productivity per hectare for wheat exceeded the average registered in Romania, 2.25%. This aspect highlights on the one hand, the fact that the South-Muntenia Region is a favorable region for wheat culture, and on the other hand, that farmers are interested in this culture. In the period 2014-2018, at the level of the counties from the South-Muntenia Region, the

change of the average production per hectare for wheat crop was observed.

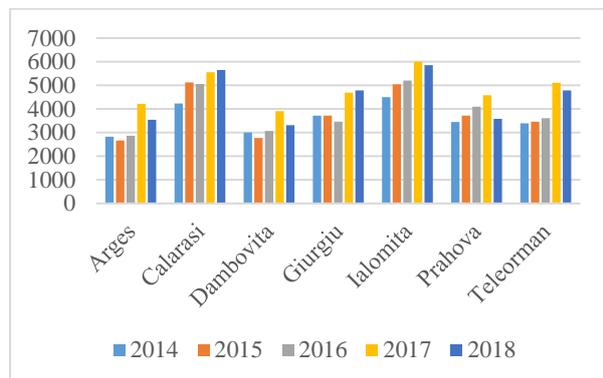


Fig.6 Dynamics of average production per hectare of wheat in the counties of the South-Muntenia Region, in the period 2014-2018 (kg/hectare)  
 Source: [8].

The lowest average productivity per hectare was achieved in Argeș County, in 2014 (2,832 kg/ha). On the other hand, the highest average productivity per hectare for wheat cultivation was registered in Ialomița County, in 2017 (5,995 kg / ha). This county maintains its first position in the ranking of counties in the South-Muntenia Region in terms of average production per hectare in 2018 (5.849 kg/ha). At the level of Ialomița county, in 2018, there is an increase in productivity by 29.77%, compared to 2014. Călărași County was ranked second in the ranking of counties with high productivity, in 2018, registering 5,654 kg/ha. In this county in 2018, the average productivity increased by 33.74%, compared to 2014. Teleorman County ranks third in this ranking, with 4,785 kg/ha (2018). Here, productivity increased by 41.23%, compared to 2014. After the first three ranked, the following positions for 2018 are occupied as follows: Giurgiu (4,782 kg/ha); Prahova (3,589 kg/ha); Argeș (3,536 kg/ha) and Dâmbovița (3,318 kg/ha). The average yields per hectare registered for wheat in the Romanian regions are below the European average. This fact is mainly due, according to the specialists in our country, to the arid climate, with quite high temperatures, especially for June [BSAF].

In the South-Muntenia Region, the average purchase price for wheat varied from one year to another. In 2014, the highest average purchase price was observed, of 0.79 lei/kg.

This average purchase price registered in this region was higher, compared to the one registered at national level, in 2018 (0.76 lei/kg). The lowest average purchase price in the South-Muntenia Region was achieved in 2016 (0.65 lei/kg). This price registered a decrease of 17.73%, in 2016, compared to 2014. In 2018, there was an increase of 1.53%, compared to 2016, of the average purchase price for wheat. Also, in 2018, there was a decrease of 16.46%, compared to 2014, for the average purchase price. In general, this price is determined by market conditions [4].

In the South-Muntenia Region, in the medium and long term there is, on the one hand, the possibility of attracting new arable land to the crop, and on the other hand, the productivity of this crop can increase if the farmers opt for those wheat varieties that require less water in the soil.

## CONCLUSIONS

The analysis of the indicators related to the wheat market in the South-Muntenia Region of Romania highlighted the following representative aspects:

- In 2018, this region cultivated with wheat 27.83% of the total cultivated area at national level;
- In 2014, the largest area cultivated with wheat in the region was registered, of 590,583 ha;
- Teleorman County stood out within the South-Muntenia Region through the area destined for wheat cultivation. In 2018, in this county was cultivated 7.72% of the cultivated area with wheat at national level;
- In 2017, the highest wheat production in this region was registered, of 2,985,541 tons;
- Teleorman County registered, in 2017, the largest wheat production, of 807,624 tons;
- The highest average production per hectare obtained at regional level was of 5.127 kg/ha (2017);
- In 2017, Ialomița County stood out with the highest average production per hectare, of 5.995 kg/ha;
- In 2014, the highest average purchase price at regional level was registered, namely 0.79 lei / kg.

In the future, in the South-Muntenia Region there are increased chances in terms of increasing the productivity of wheat crops if farmers, on the one hand, will increase irrigation capacity and, on the other hand, will use the organic and mineral fertilizers compatible with the soil requirements.

## REFERENCES

- [1] Berca, M., Horoiș, R., Păscuț, G., 2017, Studies on the use of ammonium nitrate versus urea, on wheat crop, in Burnas plateau area, Teleorman county, Romania. Scientific Papers. Series "Management, Economic Engineering in Agriculture and Rural Development", Vol. 17(2):9-12.
- [2] Economic and social-regional landmarks. Territorial statistics, (Repere economice și sociale regionale. Statistică teritorială), [https://insse.ro/cms/files/Publicatii\\_2017/82.Repere\\_economice\\_si\\_sociale\\_regionale\\_Statistica\\_teritoriala/Repere\\_economice\\_si\\_sociale\\_regionale\\_Statistica\\_teritoriala\\_2017.pdf](https://insse.ro/cms/files/Publicatii_2017/82.Repere_economice_si_sociale_regionale_Statistica_teritoriala/Repere_economice_si_sociale_regionale_Statistica_teritoriala_2017.pdf), Accessed on 25.02.2020.
- [3] Food audit in 2017 (Bilanțuri alimentare în anul 2017), 2018, [https://insse.ro/cms/sites/default/files/field/publicatii/bilanțuri\\_alimentare\\_in\\_anul\\_2017.pdf](https://insse.ro/cms/sites/default/files/field/publicatii/bilanțuri_alimentare_in_anul_2017.pdf), Accessed on 20.02.2020.
- [4] Gimbasanu, G., Tudor, V., 2019, The evolution of average prices for agricultural products in Romania during 2007-2017. Scientific Papers. Series Management, Economic Engineering in Agriculture and Rural Development, Vol. 19(2):161-166.
- [5] Ion, V., Fitotehnie, <http://www.horticultura-bucuresti.ro/images/pdf/Fitotehnie.pdf>, Accessed on 02.03.2020.
- [5] Marin, D. E., 2014, Evolution of supply and demand of wheat in Romania. Scientific Papers. Series Management, Economic Engineering in Agriculture and Rural Development, Vol. 14(1):207-210.
- [6] Medelele, D.M., Pânzaru, R.L., Vladu, M., Matei, G. 2018, Some considerations regarding the primary wheat supply in Romania and its composition (2014 – 2016). Scientific Papers. Series Management, Economic Engineering in Agriculture and Rural Development, Vol. 18(1):245-252
- [7] Ministry of Agriculture and Rural Development, Field crops. Cereals. Wheat, 2020, (Ministerul Agriculturii și Dezvoltării Rurale, Culturi de câmp. Cereale. Grâu), <https://www.madr.ro/culturi-de-camp/cereale/grau.html>, Accessed on 12.03.2020.
- [8] National Institute of Statistics (Institutul Național de Statistică), 2020, <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>, Accessed on 02.03.2020.
- [9] Panaete, M., 2019, Romania has doubled its cereal production in the last ten years and reached a record production in 2018 (România și-a dublat producția de cereale în ultimii zece ani și a ajuns în 2018 la o producție record), <https://www.zf.ro/companii/retail-agrobusiness/romania-si-a-dublat-productia-de-cereale-in-ultimii-zece-ani-si-a-ajuns-in-2018-la-o-productie-record-18164694>, Accessed on 02.03.2020.
- [10] Popescu, A., Dinu, T.A., Stoian, E., 2018, The comparative efficiency in Romania's foreign trade with cereals, 2007-2016. Scientific Papers. Series Management, Economic Engineering in Agriculture and Rural Development, Vol. 18(1):371-384.
- [11] Romania, among Europe's performers in six vegetable crops, last year. The competition for 2019 begins, 2019, (România, printre performerele Europei la șase culturi vegetale, anul trecut. Începe competiția pentru 2019), <https://www.digi24.ro/stiri/economie/agricultura/romania-printre-performerele-europei-la-sase-culturi-vegetale-anul-trecut-incepe-competitia-pentru-2019-1150976>, Accessed on 26.02.2020.
- [12] Soare, E., Chiurciu, I. A., 2016, Research on the Romanian wheat market. Scientific Papers. Series Management, Economic Engineering in Agriculture and Rural Development, Vol. 16(2):287-292.
- [13] Șerban, D., 2008, Importance, biology and ecology of wheat, (Importanța, biologia și ecologia grâului), <https://agroromania.manager.ro/articole/stiri/importanta-biologia-si-ecologia-graului-944.html>, Accessed on 01.03.2020.
- [14] Wheat (Grâu), 2017, <https://conspecte.com/Fitotehnie/grau.html>, Accessed on 27.02.2020.
- [15] Wheat culture- When we sow wheat, technologies, treatments and fertilizers, 2017, <https://www.agro.basf.ro/ro/stiri/fermier-in-romania/cultura-graului-cand-semanam-graul-tratamente-ingrasaminte.html>, Accessed on 25.02.2020.