

**TRENDS OF THE ROMANIAN AGRICULTURE. DYNAMICS OF TRADE EXCHANGES AT THE MAIN CROPS**

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***Abstract:** Agriculture has traditionally been the backbone of the Romanian economy. More than a third of the land is dedicated to plant cultivation (over 8 million ha are grown annually). This paper analyzes the recent evolution of the main productions made on the territory of Romania. The aim is to present a synthesis of the current study on the evolution of the productions recorded in Romania, as well as an analysis of the trade exchanges of the main applied crops (wheat, maize, sunflower and rapeseed). The research methodology is based on information provided by eurostat database, national institute of statistics and MADR (Ministry of Agriculture and Rural Development). As a result of the study carried out, the authors find that in the crops of wheat, maize grains, sunflower and soybeans, Romania occupies leading places in the hierarchy of the Member States of the European Union (for maize grains and sunflowers occupy the first place).*

**Key words:** Romania, dynamic of trade exchanges, UE, main crops

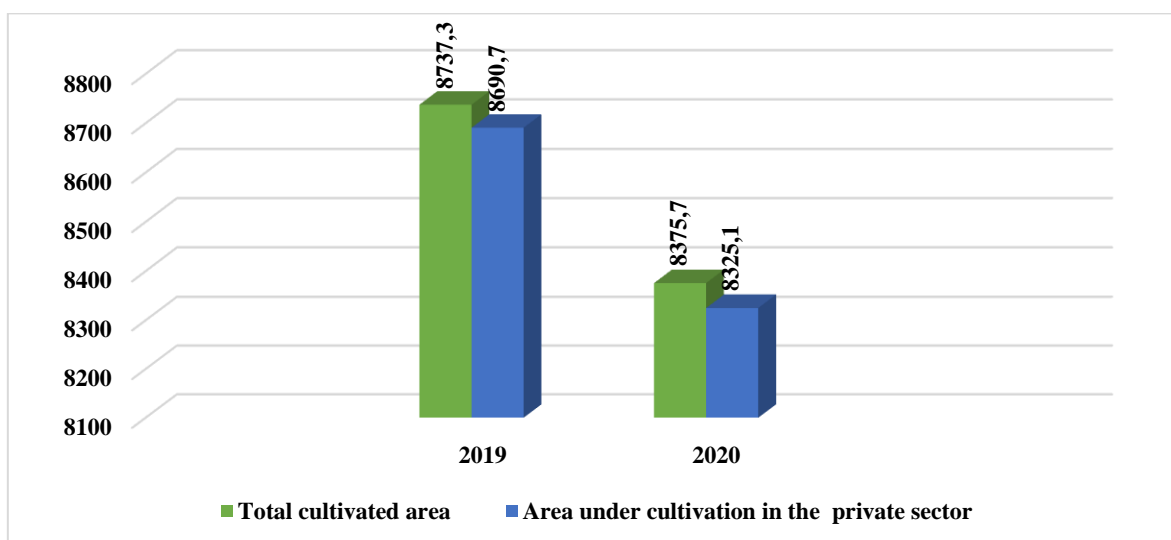
The European Union of 26 Member States has strategic directions for integrating agriculture and the countryside for sustainable development to address economic, environmental, social and health risks and uncertainties. [1,5]

New challenges in the global market instability and food crisis have emerged under the impact of climate change, degradation of natural resources and rising energy prices. The effects of income inequality have generated and increased food prices. [7]

In Romania, 5.1% of the total EU wheat production was obtained in 2020, with our country ranking sixth in the Member States after: France, Germany, Poland, Spain and Italy. Compared to 2019, when 6.5% of total EU wheat production was obtained, our country ranks fifth in the hierarchy of Member States, after: France, Germany, United Kingdom and Poland

At EU level in 2019 the most important crops in arable land are cereals, the most widespread being: wheat (46.7%), barley (22.1%) and maize (16.0%) of the total area under cereals. However, the spread of a crop can vary significantly from country to country due to different climatic conditions, production and consumption practices, tradition, etc.[10] Vegetables and fruit have become increasingly important, particularly for public consumption. Their distribution between EU Member States varies from country to country. [15]

In 2020, compared to 2019, the cultivated area decreased both in the majority private sector (-365.6 thousand ha) and in total (-361.6 thousand ha), thus the harvested area was 171.2 thousand ha less than the cultivated area. Compared to the previous year the harvested areas were higher for potatoes - total and lower for: grain cereals, grain legumes, oilseeds, sugar beet, vegetables - total.



**Figure 1. Evolution of cultivated area in 2020 compared to 2019**

Source: data processed from NSI

## MATERIALS AND METHODS

The methods used in this paper provide a wide range of answers to the evolution of agriculture both in Romania and in the European context. [3,6] The data mining was based on a wide range of statistics, information provided by the Eurostat database, the National Institute of Statistics and MADR (Ministry of Agriculture and Rural Development).

## RESEARCH RESULTS

In terms of 2020 production, the majority private sector held: 99.9% in vegetables - total, 99.7% in fruit, 99.5% in grain cereals (99.7% in grain maize, 99.2% in wheat, 99.2% in barley and barley grass, 99.2% in oats).

Grain cereals production decreased compared to the previous year mainly due to lower yields per hectare (average production per hectare).

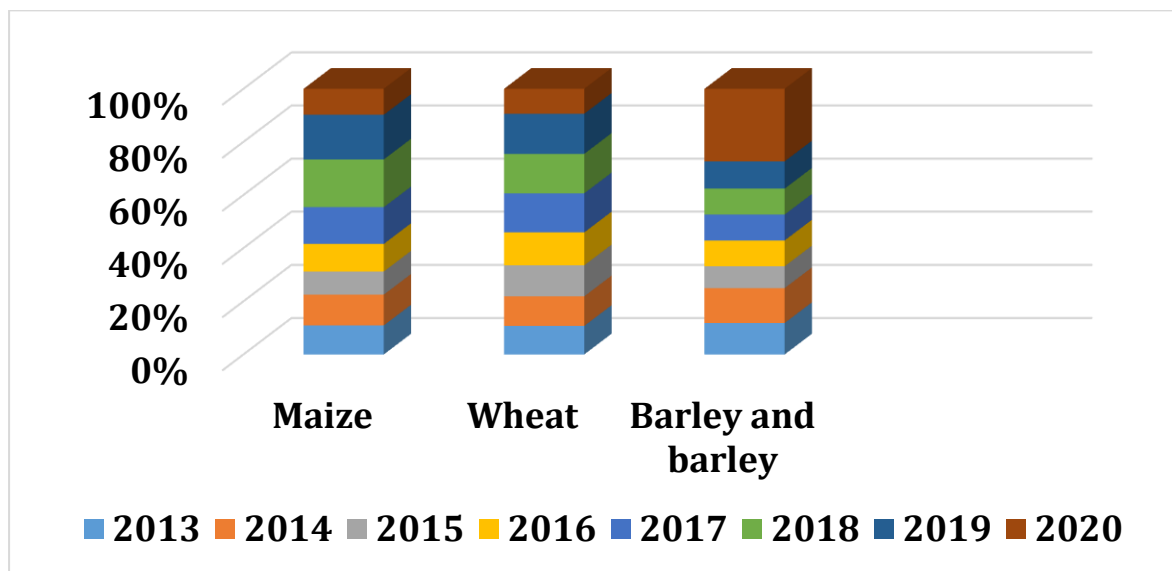
**Table 1.**

**Evolution of yields of main field crops**

Culture	2013	2014	2015	2016	2017	2018	2019	2020
<b>Maize</b>	11305.1	11988.6	9021.4	10746.4	14326.	18663,9	17432.2	10156.6
<b>Wheat</b>	7296.4	7584.8	7962.4	8431,0	10035,0	10143,7	10297.1	6410.2
<b>Barley and barley</b>	1542.2	1712.5	1072.7	1267.7	1271.7	1276.6	1340.4	3569.1

Source: data processed after MADR

Grain cereal crops with significant shares in grain production in 2020 were: grain maize (55.8%), wheat (35.2%), barley and barley grass (6.2%).



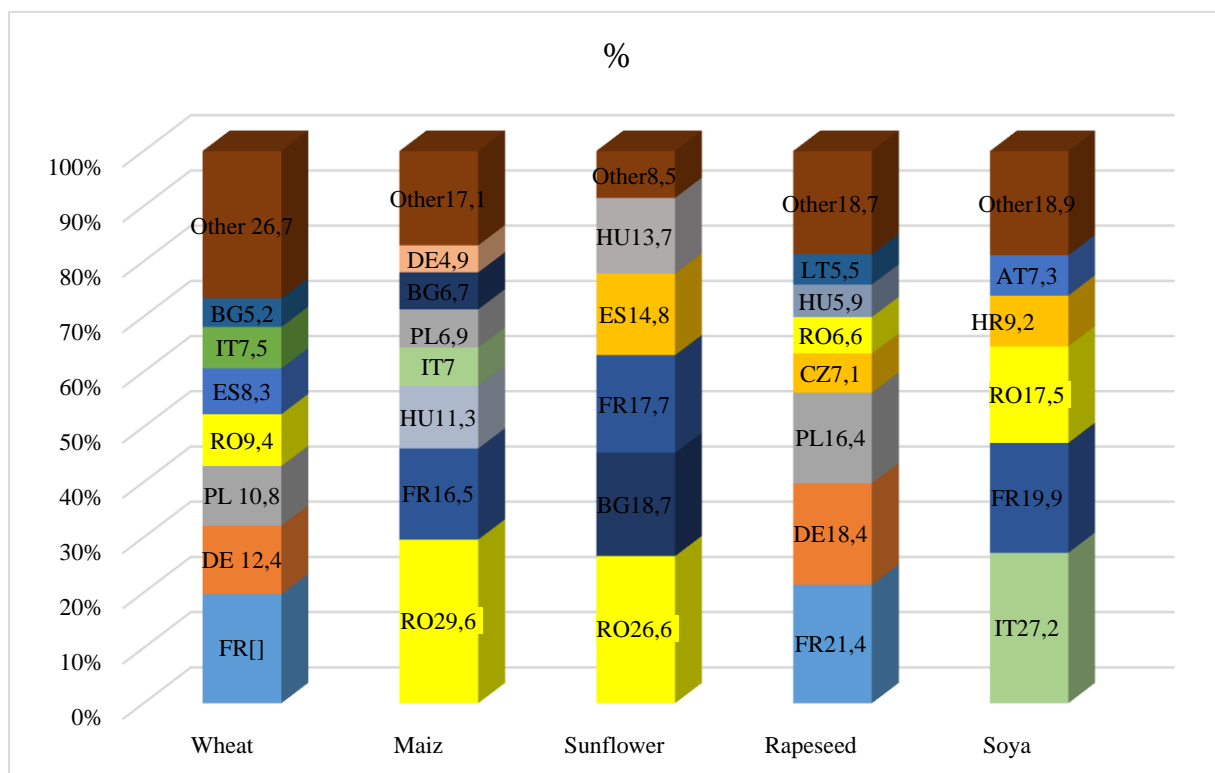
**Figure 2. Evolution of yields of main field crops**

Source: data processed after MADR

The main counties growing cereals for grain, which have important shares in total production, are: Dolj (8.5%), Timis (7.3%), Teleorman (6.3%), Bihor (5.6%) and Olt (5.4%).

In terms of wheat cultivation, Romania ranked fourth in the EU in terms of area cultivated with 9.4%, after France, Germany and Poland, and its share in the total area cultivated with wheat in the EU increased by 1.2 percentage points compared to the previous year.

Wheat is the main cereal crop in the EU - more than half of production.



**Figure 3. Structure of yields of main crops in EU in 2020**

Source: data processed from NSI

In 2020, compared to the previous year, the development of production of the main crops in the European Union, was characterised by decreases in the following crops: wheat (-19.4%), wheat flower (-19.4%) sunflower (-14.9%), barley (-9.2%), grain maize (-8.6%), rapeseed (-7.5%), grain soya (-6.9%).

Table 2.

Dynamics of intra- and extra-Community trade in wheat and meslin

Year	Wheat and meslin			
	Imported quantity (to)	Imported amount (thousand euros)	Exported quantity (to)	Export value (thousand euros)
2015	652.266,9	115.459,3	3.555.280,7	692.534,9
2016	2.155.962,6	330.860,5	6.993.999,2	1.141.908,4
2017	1.249.972,1	203.869,0	5.837.479,8	1.003.815,9
2018	695.173,2	115.544,7	5.886.755,9	1.037.727,8
2019	880.289,4	158.501,8	6.186.776,8	1.134.732,7
2020	1.225.633,8	220.532,8	4.336.745,6	844.284,3

Source: data processed after MADR

In 2020, Romania exported about 4,336,000 tonnes of wheat and meslin outside the European Union, almost 1,850,000 tonnes less than the previous year. [4]

As for the average purchase price on the domestic wheat market, we can observe a slight increase of 0.06 lei/kg compared to the previous year.

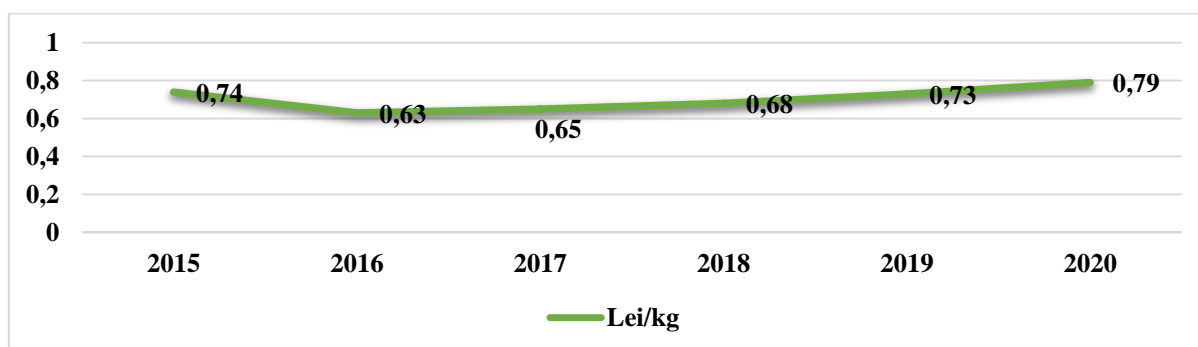


Figure 4. Average domestic purchase price data for wheat

Source: data processed after MADR

Romania is therefore the largest grower of grain maize in the European Union (more than a quarter), had a higher share in the European Union than in 2019, namely 29.6%. Romania was the largest exporter of maize in the EU, second for wheat and third for barley, after France and Germany, according to European Commission statistics based on reports received directly from national customs authorities.

Table 3.

## Dynamics of intra- and extra-EU trade in maize

Year	Maize			
	Imported quantity (to)	Imported amount (thousand euros)	Exported quantity (to)	Export value (thousand euros)
2015	1.621.458,1	293.968,4	5.125.274,3	959.907,5
2016	583.451,4	141.228,0	3.439.250,7	702.405,89
2017	463.117,3	130.107,18	3.773.159,53	729.885,51
2018	416.964,6	120.903,5	4.680.005,9	869.347,3
2019	627.598,9	171.098,8	6.767.244,2	1.243.849,0
2020	1.338.838,6	321.305,1	5.712.609,3	1.080.139,7

Source: data processed after MADR

Compared to 2015, in 2020 we can observe a slight increase of 0.1 lei/kg in the average domestic purchase price of maize.

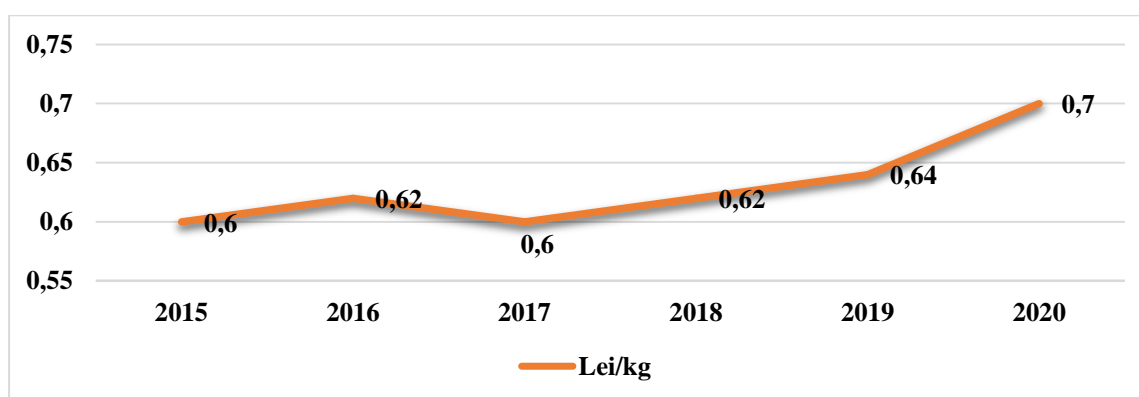


Figure 5. Average domestic purchase price data for maize

Source: data processed after MADR

Oilseed production has declined, due to decreases in both yield per hectare and area under cultivation. The counties with the highest share of total sunflower production were: Dolj (11.8%), Teleorman (8.5%), Arad (6.5%), Botoșani (6.4%), Olt (6.3%). [11]

Table 4.

## Dynamics of cultivated areas of main field crops (thousand ha)

Culture	2013	2014	2015	2016	2017	2018	2019	2020
Sunflower	2142.1	2189.3	1785.8	2032.3	2912.7	3062.7	3569.1	2204.3
Rapeseed	661.1	1059.1	919.5	1292.8	1673.3	1610,0	798.2	727.7
Soya	149.9	202.9	262.1	263.4	393.4	465.6	415.9	305.8

Source: data processed after MADR

In terms of sunflower production, Romania ranked first, followed by Bulgaria, Hungary, France and Spain. Romania ranked first in the European Union in terms of area under sunflower (about one quarter of the total area under sunflower). [12]

Table 5.

Dynamics of intra- and extra-Community trade in sunflowers

Year	Sunflower			
	Imported quantity (to)	Imported amount (thousand euros)	Exported quantity (to)	Export value (thousand euros)
2015	189.252,4	127.697,6	1.099.348,7	452.228,0
2016	197.215,1	138.457,5	1.183.711,7	489.861,7
2017	277.339,1	160.896,9	1.335.447,0	523.722,3
2018	315.270,6	191.537,6	1.726.767,1	638.832,6
2019	333.590,0	200.270,3	2.104.661,9	757.016,6
2020	250.749,0	207.088,0	1.544.548,1	605.845,3

Source: data processed after MADR

In 2020 we can see in Romania that the domestic purchase price of sunflower has reached the purchase price of 2015, and somewhat of an increase compared to last year.

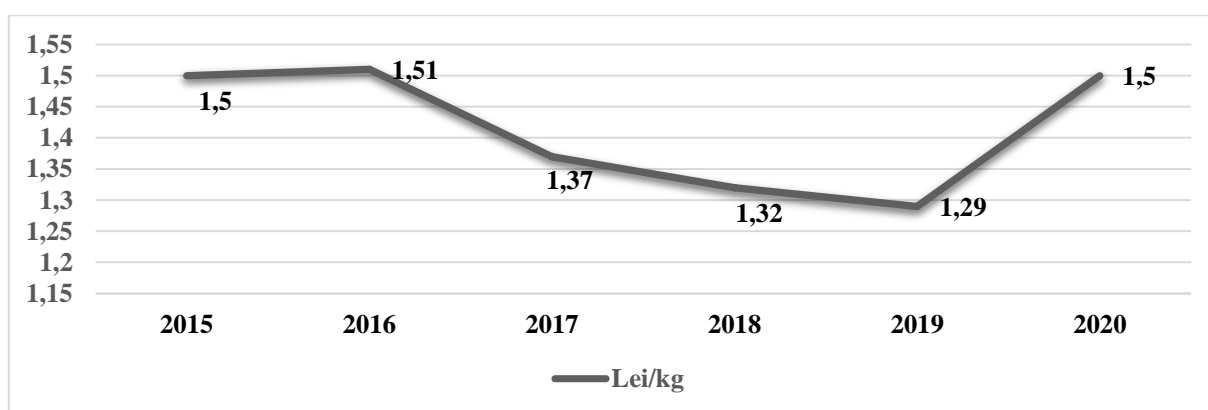


Figure 6. Average domestic purchase price data for sunflower

Source: data processed after MADR

The counties with the highest share of total sunflower production were: Dolj (11.8%), Teleorman (8.5%), Arad (6.5%), Botoşani (6.4%) and Olt (6.3%),

In 2020, Italy accounted for 38.6% of soya beans production, followed by France (13.4%), Romania (11.7%), Croatia (10.3%), Austria (7.9%) and other Member States (18.1%). Romania was also in the top seven producing Member States for potato production, after Germany, Poland, France, the Netherlands, Belgium and Denmark. [13]

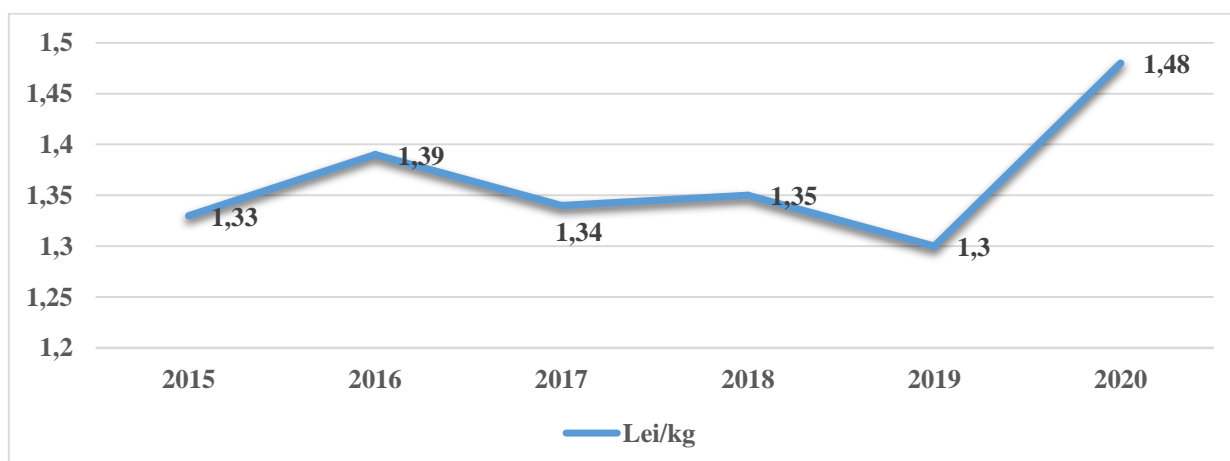


Figure 7. Average domestic purchase price data for soya beans

Source: data processed after MADR

The average domestic purchase price of soybeans in 2020 increased by 0.18 lei/kg compared to the previous year.

Romania ranked third, after Italy and France, in terms of area under soya beans in 2020. The area under soya beans in the European Union increased by 3.4%.

**Table 6.**

**Dynamics of intra- and extra-EU trade in soybeans**

Year	Soya			
	Imported quantity (to)	Imported amount (thousand euros)	Exported quantity (to)	Export value (thousand euros)
2015	168.381,5	65.875,4	92.944,5	40.382,8
2016	122.332,7	52.511,6	108.998,5	43.080,3
2017	133.757,8	54.689,9	273.952,1	101.548,1
2018	261.323,0	92.615,1	139.209,9	50.925,3
2019	80.613,9	31.393,9	276.497,3	97.609,2
2020	251.774,2	93.549,4	168.638,5	65.522,1

Source: data processed after MADR

The counties with the highest share in total soybean production are: Brăila (13.3%), Timiș (10.9%), Botoșani (10.6%), Călărași (8.9%), Satu-Mare (8.6%).

In 2020, the area under rapeseed placed Romania in fifth place among the Member States and its share in the total area under rapeseed in the European Union increased by 0.2 percentage points compared to the previous year

**Table 7.**

**Dynamics of intra- and extra-Community trade in rapeseed**

Year	Rapeseed			
	Imported quantity (to)	Imported amount (thousand euros)	Exported quantity (to)	Export value (thousand euros)
2015	38.333,5	26.558,7	773.494,9	300.855,6
2016	28.162,5	32.234,8	1.461.990,2	549.022,6
2017	77.470,1	52.711,0	1.534.168,7	579.571,6
2018	66.472,5	50.467,3	1.320.200,1	477.453,2
2019	83.819,2	63.384,2	460.018,7	185.398,8
2020	81.221,5	57.755,5	554.779,0	229.643,0

Source: data processed after MADR

The counties have obtained higher rapeseed yields: Timis (10.6%), Calarasi (8.2%), Teleorman (7.2%), Giurgiu (7.2%), Ialomita (5.8%).

The largest producer of oilseed rape in the European Union in 2020 was Germany. Together with France, the second largest producer, it accounted for 40.9% of total EU production. Rapeseed production placed Romania in the top seven Member States.

**CONCLUSIONS**

A major similarity between the civilizations of this world is that they all depend directly or indirectly on grains: wheat, rice, corn, barley, and less important ones as food for their growing populations. [8,9] This dependence is primary. Thus agriculture is the source of various selective forces, and modern agriculture, its species and practices, is the result of a continuous process of change that has physically and genetically changed all the components of agro-ecosystems. [2,4]

Romania is a traditional agricultural country and plays a unique and important part in European agriculture. As EU member since 2007 and a NATO member since 2004, Romania is currently one of the most dynamic large markets in Europe.

Following the study, the authors find that for wheat, grain maize, sunflower and soybean crops, Romania ranks first in the hierarchy of EU Member States (for grain maize and sunflower it ranks first), according to statistical data from the National Institute of Statistics, Eurostat and MADR (Ministry of Agriculture and Rural Development) from 2020.

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