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REGIONAL PRICE SITUATION FOR SUNFLOWER IN ROMANIA (2014-2018)

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Abstract

The paper addresses an essential aspect, related to the economic efficiency of sunflower production, i.e. the selling price (lei/kg). This situation is determined by the multiple possibilities for the recovery of sunflower seeds, depending on which producers can negotiate different levels of the selling price on the basis of the quantitative and qualitative parameters of the seeds, which may be stipulated in the recovery contracts or which may be taken into account at the time of sale on the open market, to various beneficiaries. It should be noted that Romania is the main grower and producer of sunflowers in the European Union (about 24% of the total area harvested and about 25% of total production respectively). Addressing the subject, aimed to highlight the differences between the 8 development regions existing at national level, in Romania. The price is characterized by a multiannual national average of 1.39 lei/kg, with limits of 0.99 lei/kg for the West Region in 2014 and 1.61 lei/kg for the South Muntenia Region at the level of 2016. If we look at the indicator in the light of its evolution over time, we see the existence of fluctuating trends.

Key words**:** *price, production, amplitude of variation, evolution, sunflower*

INTRODUCTION

Sunflower, is a crop of multivalent importance: industrial, forage, agrotechnical-technological, export and source of profit [5].
For Romania, sunflowers are the most important oil crop [6].
In the context of membership of the European Union, Romania is the main sunflower grower (1,010,215.2 compared to 4,175,246 ha – 24.19%), as well as the main producer (2,396,570.6 vs. 9,229,647.2 t – 25.97%). The level of technological performance is somewhat convenient (2,372 compared to 2,211 kg/ha -107.28%) – multiannual averages for the period 2014 - 2018 [2]. In addition to Romania, in the European Union, other major growers are represented by Bulgaria, Spain, France and Hungary [9].
At the same time, Romania is in line with the European trend of reducing areas cultivated with maize and increasing areas related to sunflower cultivation [11].
The work, is carried out when Romania, recorded during the period 2013-2018, increases by 42.8% in total production, 2.1% for the area harvested and 40.7% for the average production [8].
At national level, it is noted that the South East and South Muntenia development regions are the largest suppliers of sunflowers [1], which can also have consequences for the price level.
Romania is also notable for its surplus trade balance in sunflowers [7]. This is underlined by the fact that Romania is the world's leading exporter of sunflowers [10].

MATERIALS AND METHODS

In order to prepare the paper, it was operated with the selling price (lei / kg) for sunflower seeds, which is presented at national and regional level.
The documentation was based on accessing specialized sites, such as the database of the Romanian National Institute of Statistics [4] and the database of the United Nations Food and Agriculture Organization (FAO).
The analysis was performed both nationally and regionally (eight development regions), presenting the positioning of each region

against the national average price, the absolute variations of the indicator (lei/kg) and the dynamics of the indicator (%). The study was conducted for a period of 5 years (2014-2018), operating with the average period (6 terms). In the case of the regions Center and Bucharest - Ilfov, there are no data for the years 2014 and 2015, as such the dynamic series have only 4 terms (2016-2018 and the average of the period).
For this purpose, the percentage method and the comparison method were performed.

RESULTS AND DISCUSSIONS

Table 1 contains data on the specific situation in terms of sunflower seed prices - national and regional levels.
For 2014, the average price at national level was 1.26 lei/kg, compared to which there were for the region, both supra-unit values and sub-unit levels. Thus, the South East region is characterized by a supra-unitary level: 1.30 lei/kg. Consequently, we are talking about an absolute increase of 0.04 lei/kg, an increase that in relative size was 3.17%. The subunit levels reached: 0.99 lei/kg for the West Region (-0.27 lei/kg and -20.16%), 1.05 lei/kg for the North West and South West Oltenia regions (-0.21 lei/kg and -15.32%), 1.14 lei/kg in the case of the North East Region (-0.12 lei/kg and -9.52%), 1.23 lei/kg for the South Muntenia Region (-0.03 lei/kg and -0.81%).
The year 2015 is characterized by price variation limits of 1.32 lei/kg for the South Muntenia Region (-0.18 lei/kg and -12.0% compared to the national situation) and respectively 1.50 lei/kg in the case of the South East Region (level of equity with the national one). Consequently, we are talking about regions that have registered lower levels, compared to the reporting base (national level of the indicator - 1.50 lei/kg) - 1.34 lei/kg South West Oltenia Region (-0.16 lei/kg and -10.67%), 1.45 lei/kg for the North West and West regions (-0.05 lei/kg and -3.33%), 1.48 lei/kg at the level of the North East Region (-0.02 lei/kg and -1.33%).

Table 1. The situation of the average purchase price at national and regional level (lei/kg)

Specifiction	Year										Average**	
	2014		2015		2016		2017		2018			
	Eff.*	% compared to the national level **	Eff. *	% compared to the national level **	Eff. *	% compared to the national level **	Eff. *	% compared to the national level **	Eff. *	% compared to the national level **	Eff.	% compared to the national level **
National level	1.26	100	1.50	100	1,51	100	1.37	100	1.32	100	1.39	100
North West Region	1.05	83.33	1.45	96.67	1.32	87.42	1.27	92.70	1.19	90.15	1.26	90.65
Central Region	-	-	-	-	1.32	87.42	1.23	89.78	1.18	89.39	1.24	89.21
North East Region	1.14	90.48	1.48	98.67	1.37	90.73	1.16	84.67	1.26	95.45	1.28	92.09
South East Region	1.30	103.17	1.50	100.0	1.48	98.01	1.36	99.27	1.34	101.52	1.40	100.72
Bucharest Ilfov Region	-	-	-	-	1.40	92.72	1.36	99.27	1.32	100.0	1.36	97.84
South Muntenia Region	1.23	99.19	1.32	88.0	1.61	106.62	1.46	106.57	1.37	103.79	1.40	100.72
South West Oltenia Region	1.05	84.68	1.34	89.33	1.40	92.72	1.31	95.62	1.25	94.70	1.27	91.37
West Region	0.99	79.84	1.45	96.67	1.39	92.05	1.39	101.46	1.18	89.39	1.28	92.09

*http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table (20.12.2020)
**Own calculation.

If we refer to the specific situation of 2016, there is a national price of 1.51 lei/kg, compared to which the development regions were positioned as follows: -12.52% each

North West and Central regions (-0.19 lei/kg), - 9.27% North East Region (-0.14 lei/kg), -7.95% West Region (-0.12 lei/kg), -7.28% Bucharest Ilfov and South West Oltenia Regions (-0.11 lei/kg), -1.99% South Region East (-0.03 lei/kg), + 6.62% South Muntenia Region (+0.10 lei/kg).

In the case of 2017, it is observed that the price varied from 1.16 lei/kg in the North East Region (-15.33% respectively -0.21 lei/kg compared to the comparison term) to 1.46 lei/kg in the case of the South Muntenia Region (+6.57% respectively +0.09 lei/kg), and the national level of the indicator was 1.37 lei/kg. Exceedances of the national level are found for the West Region (+0.02 lei/kg respectively +1.46% in relative values). There are also decreases compared to the national level: -0.01 lei/kg for the South East and Bucharest Ilfov regions (1.36 lei/kg respectively -0.73%), -0.06 lei/kg South West Oltenia Region (1.31 lei/kg respectively -4.38%), -0.10 lei/kg North West Region (1.27 lei/kg respectively -7.20%), -0.14 lei/kg Central Region (1.23 lei/kg respectively -10.22%).

For 2018, a national level of 1.32 lei/kg of the sale price was registered, with limits of 1.18 lei/kg in the Central and West regions (-10.61% and -0.14 lei/kg compared to the national situation) and of 1.37 lei/kg in the South Muntenia Region (+ 3.79% and +0.05 lei/kg). Below the reference level are: North West Region - 1.19 lei/kg (-0.13 lei kg and -9.85%), South West Oltenia Region - 1.25 lei/kg (-0.07 lei/kg and -5.30%), North Region East - 1.26 lei/kg (-0.06 lei/kg and -4.55%). For the Bucharest Ilfov Region, the price was equal to the national one, and in the case of the South East Region the price was super-unitary (1.34 lei/kg, exceedances by 0.02 lei/kg and 1.52% respectively).

Starting from the annual situations presented above, the average of the period was determined, characterized by a national level of the indicator of 1.39 lei/kg. Compared to this state of affairs, the development regions were positioned as follows (Fig. 1): 89.21% Center Region (effective level 1.24 lei/kg, absolute decrease of 0.15 lei/kg); 90.65% North West Region (1.26 lei/kg effective level, 0.13 lei/kg absolute decrease); 91.37% South West Oltenia Region (effective level 1.27 lei/kg, absolute decrease of 0.12 lei/kg); 92.09% North East and West regions (1.28 lei/kg effective level, 0.11 lei/kg absolute decrease); 97.84% Bucharest Ilfov Region (effective level 1.36 lei/kg, absolute decrease of 0.03 lei/kg); 100.72% South East and South Muntenia regions (1.40 lei/kg effective level, 0.01 lei/kg absolute increase).

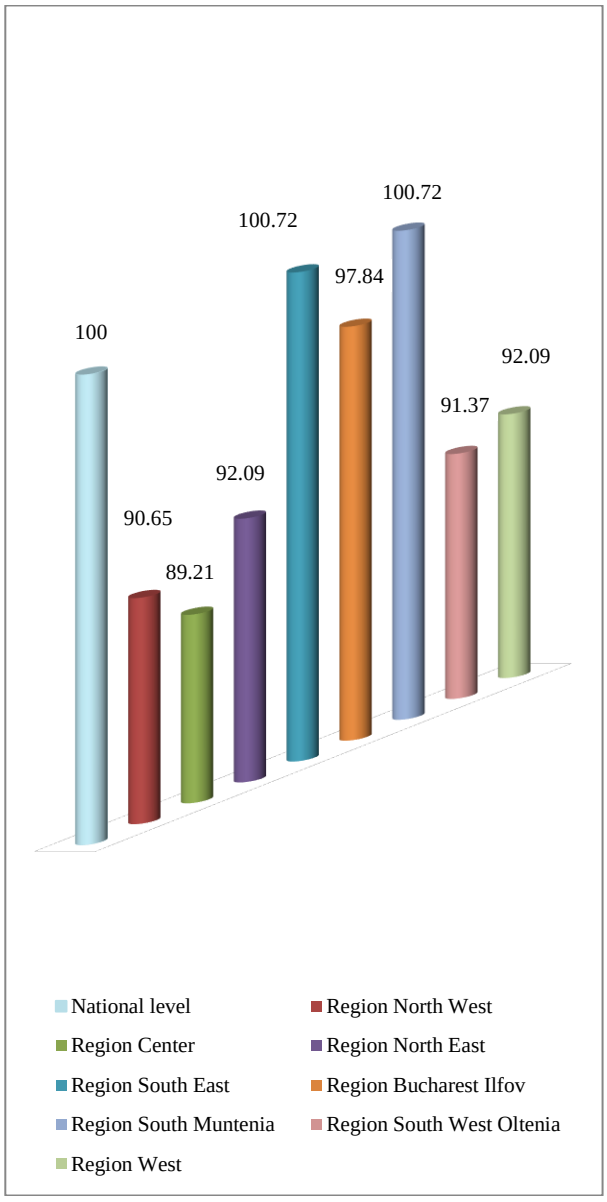

Fig. 1. Positioning of development regions in relation to the national level of the average purchase price (% of the period average)
Source: Own design and calculations.

Table 2 shows the absolute variation of the price (lei/kg), at national and regional level.

Table 2. Absolute variation of the average purchase price at national and regional level (±lei/kg)*

Specificare	±Δ 2015 vs. 2014	±Δ 2016 vs. 2015	±Δ 2017 vs. 2016	±Δ 2018 vs. 2017	±Δ media vs. 2018
National level	+0.24	+0.01	-0.14	-0.05	+0.07
North West Region	+0.40	-0.13	-0.05	-0.08	+0.07
Central Region	-	-	-0.09	-0.05	+0.06
North East Region	+0.34	-0.11	-0.21	+0.10	+0.02
South East Region	+0.20	-0.02	-0.12	-0.02	+0.06
Bucharest Ilfov Region	-	-	-0.04	-0.04	+0.04
South Muntenia Region	+0.09	+0.29	-0.15	-0.09	+0.03
South West Oltenia Region	+0.29	+0.06	-0.09	-0.06	+0.02
West Region	+0.46	-0.06	-	-0.21	+0.10

Source: own calculations.

At national level, there is a fluctuation in the selling price of sunflower, the lowest negative differences being 0.05 lei/kg in 2018 compared to 2017, and the most pronounced reached 0.14 lei/kg for 2017 compared to 2016. There are also increases in 2015 compared to 2014 - 0.24 lei/kg, in the case of 2016 compared to 2015 - 0.01 lei/kg. Under these conditions, the average for the period exceeded the level of 2018 by 0.07 lei/kg (Fig. 2).

For the North West Region, there are decreases in 2016, 2017 and 2018 compared to the reporting bases (-0.13, -0.05 and -0.08 lei/kg), but also their exceedances in 2015 and for the average of the period (+0.40 and respectively +0.07 lei/kg).

In the case of the Central Region, it is found that the indicator showed two decreasing trends (-0.09 and -0.05 lei/kg in 2017 and 2018, respectively) and an increasing trend for the average of the period. (+0.06 lei/kg).

The North East region is characterized by the existence of three situations when the indicator increases, compared to the terms of reference, respectively the year 2015, 2018 and the average of the period (+0.34, +0.10 and +0.02 lei/kg) and by two situations of decreasing level of the indicator - the years 2016 and 2017 (-0.11 and -0.21 lei/kg respectively).

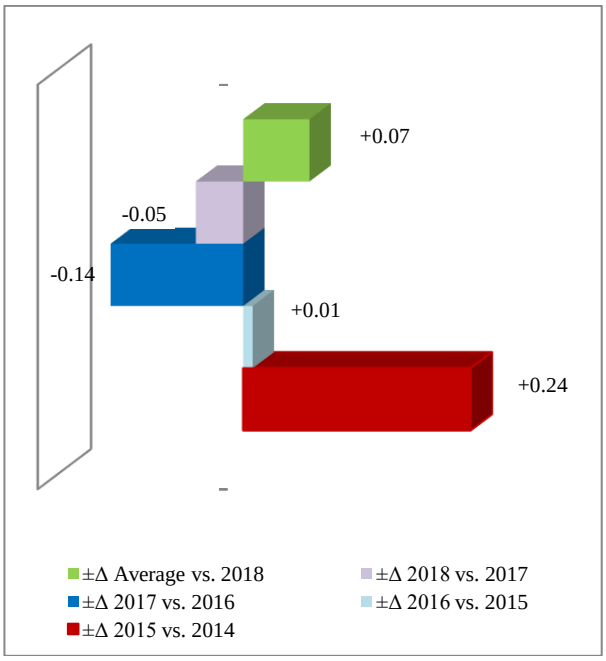

Fig. 2. The absolute variation of the national average purchase price (lei/kg)
Source: own calculations and design.

The South East region presents an evolution characterized by absolute decreases in 2015, 2016 and 2017 (-0.02, -0.12 and -0.02 lei/kg respectively), but also by increases of the indicator in the case of 2015 and for the average of the period (+0.20 and + 0.06 lei/kg).

The Bucharest Ilfov region is characterized by the existence of two subunit levels in the case of 2017 and 2018, respectively (-0.04 lei/kg) and a superunit value for the average of the period (+0.04 lei/kg).

In the case of the South Muntenia Region, there are decreasing trends of the indicator level in 2017 and 2018 (-0.15 and -0.09 lei/kg, respectively) as well as ascending trends in 2015, 2016 and respectively for the average period (+0.09, +0.29 and + 0.03 lei/kg).

South West Oltenia region, shows decreasing trends in 2017 and 2018 (-0.09 and -0.06 lei/kg respectively), as well as increasing trends in 2015, 2016 and for the average period (+0.29, +0.06 and +0.02 lei/kg).

At the level of the West Region, there are two price increase trends (+0.46 lei/kg in 2015 compared to 2014, +0.10 lei/kg for the average of the period compared to 2018), a

stationary trend in 2017 and two trends of decrease (-0.06 and -0.21 lei/kg in the case of 2016 and 2018 respectively).

Regarding the annual amplitudes of variation of the indicator, they were 0.34 lei/kg in 2014, 0.18 lei/kg in 2015, 0.29 lei/kg in the case of 2016, 0.30 lei/kg in 2017, 0.19 lei/kg in 2018 and 0.16 lei/kg for the average of the period (Fig. 3). It can be seen that the highest price uniformity appeared for the average of the period (relative differences of 11.43% between extreme values), and the largest variation is specific to 2014 (relative differences of 23.85% between extreme values - Fig. 3).

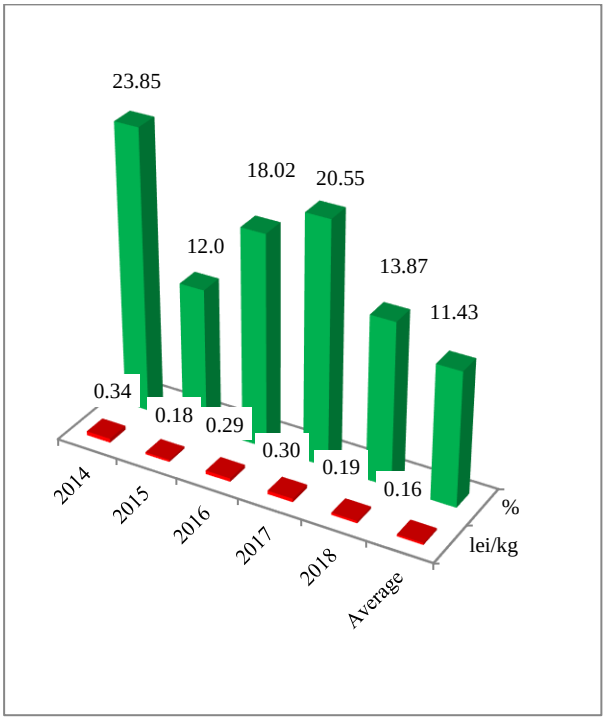

Fig. 3. Annual amplitude of variation of the average purchase price (lei/kg)
Source: own calculations and design.

If we analyze the indicator in terms of the amplitude of variation for each reference level (national and regional), we find the following (Fig. 4): variations of 0.08 lei/kg in the Bucharest Ilfov Region; amplitude of 0.14 lei/kg at the level of the Center Region; changes of 0.20 lei/kg in the case of the South East Region; 0.34 lei/kg for the North East Region; amplitude of variation of 0.25 lei/kg in the case of the national level; variations of 0.35 lei/kg at the level of the South West Oltenia Region; total amplitude of 0.37 lei/kg for the South Muntenia Region; 0.40 lei/kg for the North West Region; changes of 0.46 lei/kg in the Western Region.

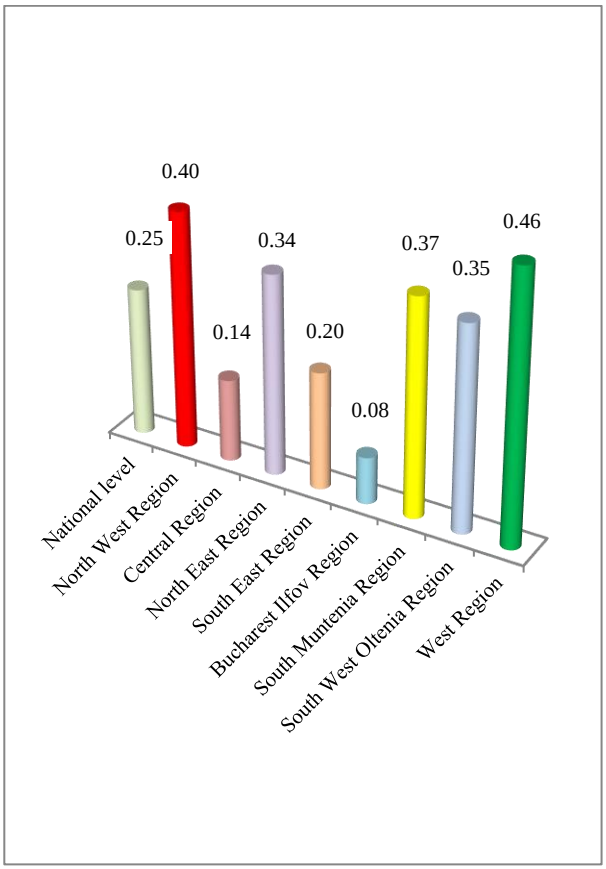

Fig. 4. Amplitude of variation of the average purchase price, at national and regional level (lei/kg)
Source: own calculations and design.

Table 3 shows the price dynamics at national and regional level.

At national level, the dynamics of the indicator contains subunit values in 2017 and 2018 (decreases by 9.28 and 3.65% compared to the previous terms of the dynamic series), but also supraunitary values in the rest (exceedances from 4.76 to 19.84% of the reporting bases). The average of the period is higher than both terms of reference (+10.32 and +5.30% respectively).

The North West region presents a sinuous evolution of the indicator over time. Fixed-base indices range from 113.33% in 2018 to 138.10% in 2015. At the level of mobile-based indices, the variation limits were 91.03 and 138.10% in 2016 and 2015, respectively. Under these conditions, the average period is ahead of 1.20 and 1.05 times the terms of comparison, respectively.

Table 3. Purchase price dynamics (%), at national and regional level

Specification	Year										Average	
	2014		2015		2016		2017		2018			
	Ibf	Ibm	Ibf	Ibm	Ibf	Ibm	Ibf	Ibm	Ibf	Ibm	Ibf	Ibm
National level	100	100	119.05	119.05	119.84	100.67	108.73	90.72	104.76	96.35	110.32	105.30
North West Region	100	100	138.10	138.10	125.71	91.03	120.95	96.21	113.33	93.70	120.0	105.88
Central Region	-	-	-	-	100	100	93.18	93.18	89.39	95.93	93.94	105.08
North East Region	100	100	129.82	129.82	120.18	92.57	101.75	84.67	110.53	108.62	112.28	101.59
South East Region	100	100	115.38	115.38	113.85	98.67	104.62	91.89	103.08	98.53	107.69	104.48
Bucharest Ilfov Region	-	-	-	-	100	100	97.14	97.14	94.29	97.06	97.14	103.03
South Muntenia Region	100	100	107.32	107.32	130.89	121.97	118.70	90.68	111.38	93.84	113.82	102.19
South West Oltenia Region	100	100	127.62	127.62	133.33	104.48	124.76	93.57	119.05	95.42	120.95	101.60
West Region	100	100	146.46	146.46	140.40	95.86	140.40	100.0	119.19	84.89	129.29	108.47

Source: own calculations.

In the case of the Center Region, the indicator decreases in 2017 by 6.82% compared to the first term of the dynamic series, then in 2018 the decreases remain (-10.61 and -4.07% compared to the reporting bases), and the average increases by 5.08% compared to the previous term of the dynamic series.

If we refer to the specific situation of the North East Region, it is found that the first reporting term is exceeded throughout the dynamic series (+29.82, +20.18, +1.75, +10.53 and +12.28% respectively in 2015, 2016, 2017, 2018 and respectively for average of the period). Regarding the indices with mobile base, they are sub-unitary in 2016 and 2017 (92.57 and 84.67%) and super-unitary for the rest of the components of the analyzed period (129.82% in 2015, 108.62% in 2018, 101.59% in the case of the average period).

The South East Region, presents only supra-unitary values of the fixed-base indices (115.38, 113.85, 104.62, 103.08 and 107.69% - 2015, 2016, 2017, 2018 and respectively the average of the period), and the mobile-based indices were sub-unitary in 2016, 2017 and 2018 (98.67, 91.89 and 98.53% respectively) and supra-unitary for 2015 and the average for the period (115.38 and 104.48% respectively).

The Bucharest Ilfov region shows a downward trend of the indicator, a situation highlighted by the fact that the only supra-unit value characterizes indices with a chain base for the average of the period (103.03%). The decreases recorded were 2.86 and 2.94% in 2017 and 2018, respectively, compared to the previous terms of the dynamic series.

The situation of the South Muntenia Region is characterized by the fact that there are increases in 2015, 2016 and for the average of the period (+7.32, +21.97 and +2.19% compared to the previous terms), as well as decreases in 2017 and 2018 respectively (-9.32 and respectively - 6.16% compared to previous years of the dynamic series).

The South West Oltenia Region is characterized by the decrease of the indicator level in 2017 and 2018 by 6.43 and 4.58%, but also by its increase in 2015, 2016 and respectively for the average of the period compared to the previous terms of the dynamic series (+27.62, +4.48 and respectively +1.60%).

For the western region, the evolution trends are uneven, upward in 2015 (+46.46%), downward in 2016 (-4.14%), stationary in 2017, downward in 2018 (-15.11%) - all this compared to previous terms reference. the average is 1.29 and 1.08 times ahead of the comparison bases, respectively.

CONCLUSIONS

The selling price for sunflower registered a national multiannual average of 1.39 lei/kg, with extreme values of 0.99 lei/kg in 2014 for

the West Region and of 1.61 lei/kg in the case of 2016 for the South Muntenia Region (total amplitude variation of 0.62 lei/kg). If we refer to the situation of the European Union, Romania stands at 97.56% of the regional level of the indicator [3].

At national level, the evolution of the indicator is uneven, a phenomenon that is also manifested for the North West, North East, South East, South Muntenia, South West Oltenia and West regions. The Central and Bucharest Ilfov regions are characterized by strictly descending evolutions.

Sunflower producers must be supported by government bodies in order to properly integrate into the product chain in terms of relations with economic actors upstream and downstream.

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