

SOME CONSIDERATIONS ON CEREALS PRODUCTION IN THE COUNTY OF DOLJ (2014-2016)

PÂNZARU R.L., MEDELETE D.M.
Faculty of Agronomy, University of Craiova

Key words: *wheat, corn, barley, rice, oats, surface, total production, average production*

ABSTRACT

The paper refers to cereal crops cultivated in Dolj county during the 2014-2016 period, of which individualize: wheat and rye, barley and two row barley, oats, grain maize, sorghum and "other cereals".

Within the total county surface of 317.841 ha, wheat and rye predominate, grain maize (weights of 58.14 and 30.06% respectively), followed at an appreciable distance of barley and two row barley (weight of 8.54%).

The county has a total production of 1,109,568.67 tons of grain, to which

the most contributed were the wheat and rye (54.17% - less weight than the surface), the grain maize (34.86% - the weight larger than the surface) respectively barley and two row barley (8.40% - less weight than the cultivated area).

Compared with the average production (general level) of 3,488 kg / ha, there are exceedances of "other cereals" and grain maize, as well as lower levels of barley and wheat, wheat and rye, oats and sorghum respectively.

INTRODUCTION

The main (technical and economic) characteristics of grain production are presented based on specific indicators.

In our country, the wheat culture dates back over 2,500 years, witnessing the inscriptions on the coins of the old cities on the Black Sea (Tomis, Kallatys). For example, the coins of the Tomis fortress (Constanța) were on the face of the goddess Demeter, the goddess of agriculture, and on the other side, the wheat spike. For agricultural units in Romania, wheat is important for food, industrial, fodder, agro-technological, export and profit.

Barley is one of the oldest crops, from distant times known and cultivated by Indians, Chinese, Egyptian, Greek and Roman. It is considered to be the first plant to be cultivated, the barley being cultivated with the early beginnings of agriculture. Barley and two row barley had importance as fodder, industrial and technological.

The place of oat production in the economy of Romanian farms is given by its fodder, industrial and agro-technological importance.

In Europe, corn was brought from America by Columbus (1,493), first in Spain and Portugal, in our country being introduced into culture towards the end of the seventeenth century, the beginning of the eighteenth century. Existing documents show that in Muntenia, corn was found during the reign of Șerban Cantacuzino (1,678 - 1,688), in Moldavia at the time of Constantin Duca Voda (1,693 - 1,695) and in Transylvania maize was cultivated on large surfaces during the reign of Empress Maria Theresa. The importance and economic benefits of maize production derive from the versatility of its destination: fodder, industrial, agro-technical - technology, export article and source of profit for agricultural units.

The production of sorghum had importance as fodder, industrial and

agrotechnical - technological.

METHOD AND MATERIAL

The paper used the following indicators: the cultivated area (ha), the total production (t) and the average production per production unit (kg / ha) the structure of the area cultivated with cereals. In addition, structure indexes (%) were used for the cultivated area and total production, while at the same time the positioning of the average yields (%) in crops was achieved compared to the general situation of the product group.

Indicators were applied to the following crops or crop groups: total cereals, wheat and rye, barley and two row barley, oats, grain maize, sorghum, other cereals.

Running the analysis refers to the time period between 2014 and 2016, to which the average of the period was added, thus forming a dynamic series consisting of 4 terms.

The comparison method analyzes the results of the agricultural unit and compares it with the reference bases to which it can be called (in the present case the national and regional levels of the indicators). The comparison can be made in time, in space, or it may be a mixed one. The comparison shows a general picture of the evolution of the investigated processes and phenomena based on their analysis in parallel with the terms of reference.

RESULTS AND DISCUSSIONS

Table 1 shows the structure of the county surface cultivated with cereals, at general level and for crops.

Table 1

The cultivated area (2014-2016)

Specification	The year						Average**	
	2014		2015		2016		Eff. (ha)	Str. (%)
	Eff. (ha)*	Str. (%)**	Eff. (ha)*	Str. (%)**	Eff. (ha)*	Str. (%)**		
Total cereals	308,200	100.00	302,951	100.00	342,372	100.00	317,841.00	100.00
Wheat and rye	179,261	58.17	173,998	57.43	200,993	58.71	184,750.67	58.14
Barley and two row barley	24,939	8.09	24,478	8.08	32,045	9.36	27,154.00	8.54
Oat	4,080	1.32	4,322	1.43	4,411	1.29	4,271.00	1.34
Maize grain	94,005	30.50	94,208	31.10	98,409	28.74	95,540.67	30.06
Sorghum	920	0.30	1,324	0.44	557	0.16	933.66	0.29
Other cereals	4,995	1.62	4,621	1.52	5,957	1.74	5,191.00	1.63

<http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=AGR108A> (15.11.2017)

*own calculation

The year 2014 is characterized by a total area cultivated with cereals of 308,200 ha, of which the main species held weights: 58.17% wheat and rye - 179.261 ha, 30.50% maize grain - 94.005

ha, 8.09% barley and two row barley - 24.939 ha, 1.69% "other cereals" - 4.995 ha, 1.32% oats - 4,080 ha and 0.30% sorghum - 920 ha.

If we analyze the situation in 2015, we find variable grain areas as follows: 1,324 ha of sorghum, 4,322 ha of oats, 4,621 ha of "other cereals", 24,478 ha of barley and barley, 94,208 ha of maize grain, 173,998 ha of wheat and rye. These areas led to a total of 302,951 ha cultivated with cereals, of which the following weights were recorded by species: 0.44% sorghum, 1.43% oat, 1.52% "other cereals", 8.08% barley and two row barley, 31.10% maize grains, 57.43% wheat and rye.

For the year 2016, the total area cultivated with cereals was 342,372 ha, of which the main species occupied: 58.71% wheat and rye - 200.993 ha, 28.74%

grain maize - 98.409 ha, 9.36% barley and two row barley - 32.045 ha, 1.74% "other cereals" - 5.957 ha, 1.29% oats - 4.411 ha and 0.16% sorghum - 557 ha.

The average of the analyzed period shows at county level a total area cultivated with cereals of 317,841 ha, of which the main cereal species have achieved: 0.29% sorghum (933.66 ha), 1.34% oat (4.271 ha), 1.63% "other cereals" 5,191 ha), 8.54% barley and two row barley (2,7154 ha), 30,06% grain maize 95,540.67 ha), 58.14% wheat and rye (184,750.67 ha - fig.1).

Table 2 shows the structure of county cereal production, at both general and crop level.

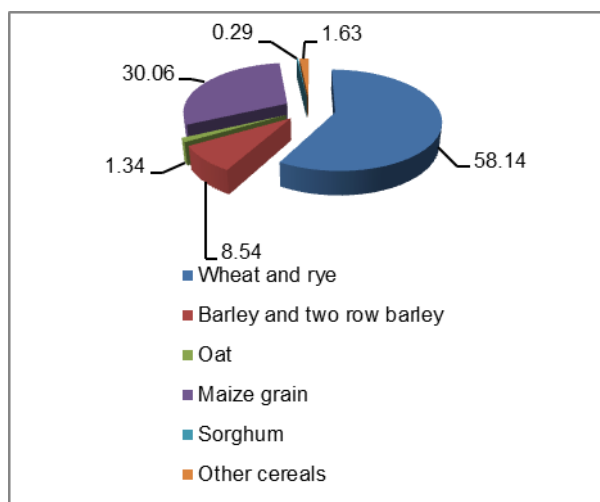


Fig. 1. The cultivated area. Structure - the average of the period (%)

Table 2

Total production (2014-2016)

Specification	The year						Average**	
	2014		2015		2016		Eff. (t)	Str. (%)
	Eff. (t)*	Str. (%)**	Eff. (t)*	Str. (%)**	Eff. (t)*	Str. (%)**		
Total cereals	1,099,429	100.00	1,011,284	100.00	1,217,993	100.00	1,109,568.67	100.00
Wheat and rye	558,143	50.77	575,470	56.90	670,015	55.01	601,209.33	54.17
Barley and two row barley	76,184	6.93	83,032	8.22	120,372	9.88	93,196.00	8.40
Oat	8,007	0.73	6,333	0.63	8,600	0.71	7,646.67	0.69
Maize grain	437,407	39.78	326,960	32.33	396,105	32.52	386,824.00	34.86
Sorghum	1,907	0.17	2,266	0.22	838	0.07	1,670.33	0.15
Other cereals	17,781	1.62	17,223	1.70	22,063	1.81	19,202.34	1.73

<http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=AGR109A> (15.11.2017)
own calculation

In 2014, of the total county of 1,099,429 t, it is observed that the main

crop was wheat and rye with 55,8143 t - 50.77% of the total, followed by grain

maize with 437.407 t - 39.78%, barley and two row barley with 76.184 t - 6.93%, "other cereals" with 17.781 t - 1.62%, oat with 8.007 t - 0.73% and sorghum with a total production of 1.907 t - 0.17% of the total.

The year 2015 is characterized by a county level of the total cereal production of 1,011,284 t, of which the following crops had the following weights: 56.90% wheat and rye - 575.470 t, 32.33% maize grain - 326.960 t, 8.22% barley and two row barley - 83,032 t, 1.70% "other cereals" - 17,223 t, 0,63% oats - 6,333 tons and 0,22% sorghum - 2,266 tons.

If we look at the situation in 2016, we can see that total grain production - 1,217,993 t - was constituted by variable sequential contributions. Thus - in

ascending order - the crops contributed with: 838 t sorghum - 0.07% of the total, 8.600 t oats - 0.71%, 22.063 t "other cereals" - 1.81%, 120.372 t barley and two row barley - 9.88%, 396.105 t maize grain - 32.52% and 670.015 t of wheat and rye - 55.01%.

Based on the data presented above, the average of the period was made, which is characterized by a total county level of 1,109,568.67 t, whose structure (fig.2) was the following: 54.17% wheat and rye - 601.209.33 t; 34.86% maize grain - 386.824 t; 8.40% barley and two row barley - 93,196 t; 1.73% "other cereals" - 19,202.34 t; 0.69% oats - 7,646.67 t; 0.15% sorghum - 1.670.33 t.

Table 3 shows the average production yield per production unit (kg / ha).

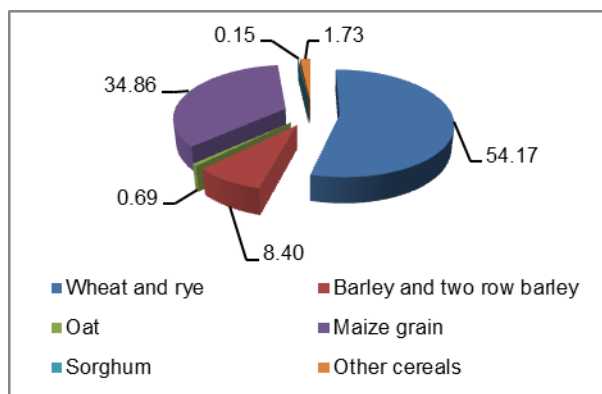


Fig. 2. Total production. Structure - the average of the period (%)

Table 3

Average production per hectare (2014-2016)

Specification	The year						Average **	
	2014		2015		2016		Eff. (kg/ha)	% compared to the total
	Eff. (kg/ha) *	% compared to the total **	Eff. (kg/ha) *	% compared to the total **	Eff. (kg/ha) *	% compared to the total **		
Total cereals	3,567	100.00	3,338	100.00	3,558	100.00	3,488	100.00
Wheat and rye	3,114	87.30	3,307	99.07	3,334	93.70	3,252	93.23
Barley and two row barley	3,055	85.65	3,392	101.62	3,756	105.56	3,401	97.51
Oat	1,963	55.03	1,465	43.89	1,950	54.81	1,793	51.40
Maize grain	4,653	130.45	3,471	103.98	4,025	113.13	4,050	116.11
Sorghum	2,073	58.12	1,711	51.26	1,504	42.27	1,763	50.54
Other cereals	3,560	99.80	3,727	111.65	3,794	106.63	3,694	105.91

<http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=AGR110A> (15.11.2017)

own calculation

In 2014, the county obtained a total average production of 3,567 kg / ha, compared to which - at the level of the crops of the group - the situation was the following: 3,114 kg / ha for wheat and rye (87.30% beside the comparison period), 3,055 kg / ha for barley and two row barley (85.65%), 1,963 kg / ha for oats (55.03%), 4,563 kg / ha for grain maize (130.45%), and 2,073 kg / ha for sorghum (58.12%) and 3.560 kg / ha for "other cereals" (99.80%).

In the year 2015, the average yield was 3,338 kg / ha and the cereal crops were 43.89% oat - 1.465 kg / ha, 51.26% sorghum - 1.711 kg / ha, 99.07% wheat and rye - 3.307 kg / ha, 101.62% barley and two row barley - 3.392 kg / ha, 103.98% maize grains - 3.471 kg / ha and 111.65% "other cereals" - 3.727 kg / ha.

For the year 2016, at the county level, average yields were obtained from

1.504 kg / ha in the case of sorghum (-57.73% compared to the general county level) up to 4.025 kg/ha in the case of grain maize (+ 13.13%). The rest of the crops were placed either below or above the overall indicator level (3,558 kg / ha), as follows: -45.19 and -6.30% oats, wheat and rye respectively (1.950 and 3.334 kg / ha); +5.56 and + 6.63% barley and two row barley respectively "other cereals" (3.756 and 3.794 kg / ha).

At the county level, the average of the period shows an average production of 3,488 kg / ha, of which the position of the crops was the following: -49.46% sorghum - 1.763 kg / ha; -48.60% oats - 1.793 kg / ha; -6.77% wheat and rye - 3.252 kg / ha; -2.49% barley and two row barley - 3.401 kg / ha; + 5.91% "other cereals" - 3,694 kg / ha; + 16.11% grain maize - 4,050 kg / ha.

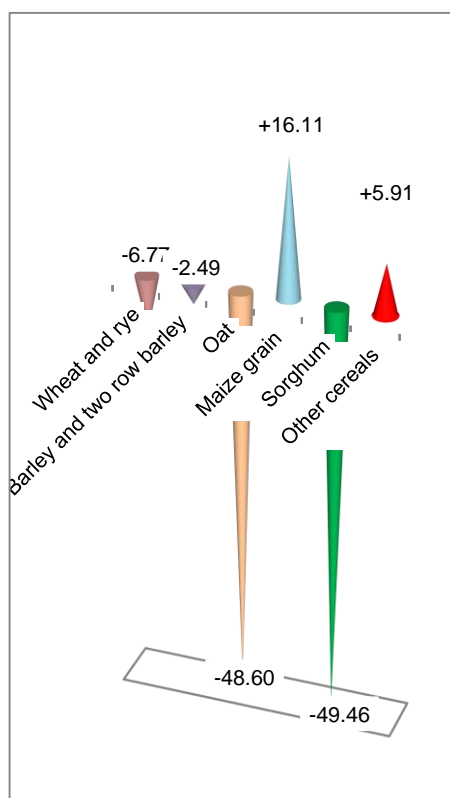


Fig. 3. Average yield, crop position relative to grain total = 100%.
- Average of the period (±%)

CONCLUSIONS

First of all, it is worth mentioning a wide range of cereal crops practiced at the county level: wheat and rye, barley

and two row barley, oats, grain maize, sorghum and "other cereals".

Regarding the cultivated area it is noticeable:

- the indicator evolved unevenly over time for the entire cultivated area, which is manifested in most crops (wheat and rye, barley and two row barley, "other cereals" and sorghum - in the latter case, change of minimum and maximum years), except for oats and corn, which recorded increases in the indicator. Generally, variations are not very high except for sorghum;

- Dolj County owned: 8.68% of the wheat and rye area, 6.75% of the sorghum area, 5.81% at the general level, 5.55% of the area related to the barley and two row barley culture and 3.72% of the area allocated to the crop of corn;

- analyzing the situation of Dolj County, in the context of the South-West Oltenia Development Region, it was observed that it had variable weights (for the main species) from 26.74% for grain maize to 57.99% for barley and two row barley.

If we do not refer to total production, the following points should be noted:

- the evolution of the indicator was uneven (as for the cultivated area, indicating a link between the two indicators), similar developments being recorded for oats, grain maize and "other cereals". For wheat and rye, respectively barley and two row barley, the trend is ascending, while for sorghum the trend of evolution is descending;

- analyzing the situation of Dolj county at national level, it is observed that it held variable weights (for the main species) from 3.65% in the case of grain maize, to 7.50% for wheat and rye;

- in relation to the specific situation of the South-West Oltenia Development Region, Dolj County obtained: 59.43% of the barley and two row barley production, 47.73% of the wheat and rye production, 40.15% of the total, 30.91% of the corn and 21.19% of sorghum production.

In terms of average production, it is worth highlighting:

- in general, the indicator has fluctuated, a situation that also occurs for oats and maize grains. Wheat and rye, barley and two row barley and "other cereals", respectively, recorded upward trends, while for sorghum the evolution was a descending one;

- reported at national level, Dolj County achieved average outputs per unit of production strictly sub unitary;

- analyzing the situation of Dolj county in the context of the South-West Oltenia Development Region, it is observed that it exceeded the reporting term for barley and two row barley, total cereals and grain maize, while in the rest of the crops the effective level of the county average production is under the term of reference.

It can be appreciated that Dolj county is an important supplier of cereals at national and regional level, but this state of affairs must be improved by increasing the productive performances, based on the improvement of the endowment of the producers, the way of organizing the activity, the prefabrication professional training and stimulation of interest for the specific activity carried out.

BIBLIOGRAPHY

1. Barbu C., Pânzaru R.L., 2000, Agrarian economy, Hyperion publisher, Craiova
2. Constatin M., 2016, Dictionary of agromarketing, Tribuna Economică Publishing House, Bucharest
3. Pânzaru R.L., Medelete D. M., Ștefan G., 2009, Economics of Vegetable Production, Universitaria Publishing House Craiova
4. Ștefan G., 2006, Agrarian economy, Junimea publishing, Iași
5. www.insse.ro
6. www.fao.org