

CEREAL OFFER IN MEHEDINȚI COUNTY (2015-2017)

Radu Lucian PÂNZARU¹, Dragoș Mihai MEDELETE¹, Gavril ȘTEFAN²,
Marius VLADU¹

¹University of Craiova, Faculty of Agronomy, 19 Liberty, 200421, Craiova, Romania, Phone: +40 741 180 976 , Fax: + 40 251 418 475, Emails: medelete@yahoo.com, rlp1967craiova@yahoo.com, mariusvladu@yahoo.fr

²USAMV Iași, Faculty of Agriculture, 3 Mihail Sadoveanu, Iași, Romania, Phone/+40 744 708 173, Fax +40 232 219 175, Email: dvbodescu@yahoo.com

Corresponding author: medelete@yahoo.com

Abstract

Mehedinți County is part of the South-west Oltenia region, through its area (total, agricultural and arable – 493,289, 223,344 and 187,957 ha) representing the fifth component under the total surface and third for the agricultural area and the respective arable. The existence of a fairly vast palette of cereal crops is observed: wheat and rye, barley and two row barley, oats, corn grains, sorghum and "other cereals". Within the total area of 108,461.33 ha, maize grains, wheat and rye (weights of 50.63 and 40.37%) predominating, the rest of the crops holding weights below 5%. The county obtains a total production of 429,879.67 t, to which the largest contributions have been brought, maize grains (53.73%-higher than the surface), wheat and rye (39.61%-less weight than in the case of the surface), the rest of the crops having contributions below 4%. In relation to average production, a general level of 3,963 kg/ha is found, compared to which only maize is recorded in excess.

Key words: area, average production, cereals, offer, total production

INTRODUCTION

Mehedinți County is located in the South-western part of Romania, between the historical regions of Banat and Oltenia [11].

Cereals (wheat, rye, barley, oats, maize, sorghum, etc.) are economically important under food, industrial, fodder, agro-technical, technological, as a source of profit and for export [7]. For example, under the Human nutrition report, cereals are the most important source of energy (from 30 to 80% of daily calorie consumption in developed and poor countries) [1].

At the global level, cereals are grown on significant surfaces. According to FAO data, cereals occupy more than half of the arable surface [4].

Cereals are the main vegetable species grown in Romania [3]. The main cereal in Romania is maize, followed by wheat [3].

Development of grain production, based on modern technologies, genetic material performance, irrigation expansion, use of fertilizers and modern methods of crop protection [8].

Currently, cereals (especially wheat, rice and maize) consume about 60% of the total quantity of chemical fertilizers, and by the year 2050, these crops are expected to consume a little over 50% of the consumption of fertilizers [5].

Cereals can be cultivated on an ecological diet. However, Europe is a region where the area cultivated with cereals decreases as a result of the low-scale practice of organic crops for this group of plants [2].

The work seeks to highlight the role of Mehedinți County at regional and national level with regard to the establishment of the primary supply of cereal grains.

MATERIALS AND METHODS

The method of analysis used is the comparison, which is used in time and space [6]. A dynamic series has been built with 4 terms (years 2015, 2016, 2017 and average period).

The indicators used are, the cultivated area (ha), total production (t) and average production (kg/ha). For the first two

indicators, structures (by species) were determined and average production was positioned at species level, compared to the general county situation.

The completion of the analysis is based on the framing of Mehedinți County, at national and regional level, so that its contribution was also

pursued to the achievement of national and regional levels of indicators (%).

RESULTS AND DISCUSSIONS

Table 1, presents the structure of the county area cultivated with cereals, at general level and on crops [10].

Table 1. Area cultivated (2015-2017)

Specification	Year						Average**	
	2015		2016		2017			
	Eff. (ha)*	Str. (%)**	Eff. (ha)*	Str. (%)**	Eff. (ha)*	Str. (%)**	Eff. (ha)	Str. (%)
Total cereals	107,481	100.00	111,304	100.00	106,599	100.00	108,461.33	100.00
Wheat and Rye	42,329	39.38	44,210	39.72	44,836	42.06	43,791.67	40.37
Barley and Two row barley	4,224	3.93	4,896	4.40	5,017	4.71	4,712.33	4.34
Oats	3,676	3.42	3,649	3.28	3,710	3.47	3,678.33	3.39
Maize	56,113	52.21	57,203	51.39	51,411	48.23	54,909.00	50.63
Sorghum	6	0.01	33	0.03	178	0.17	72.33	0.07
Other cereals	1,133	1.05	1,313	1.18	1,447	1.36	1,297.67	1.20

*<http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table> (Accessed on 20.12.2018)

**own calculation.

The year 2015, is characterized by a total area cultivated with cereals of 107,481 ha, of which the main species held weights of: 52.21% corn grains – 56,113 ha, 39.38% wheat and rye – 42,329 ha, 3.93% barley and two row barley – 4,224 ha, 3.42% oats – 3,676 ha 1.05% "other cereals" – 1,133 ha, and 0.01% sorghum – 6 ha.

If we analyze the situation of 2016, we find variable surfaces of cereals, as follows: 33 ha sorghum, 1,313 ha - "other cereals", 3,649 ha oats, 4,896 ha - barley and two row barley, 44,210 ha wheat and rye, 57,203 ha grain corn. These areas led to a total of 111,304 ha cultivated with cereals, of which the following weights were recorded: 0.03% sorghum, 1.18% "other cereals", 3.28% oats, 4.40% barley and two row barley, 39.72% wheat and rye, 51.39% corn.

For 2017, at the county level the total area cultivated with cereals was 106,599 ha, of which the main species occupied: 48.23% corn – 51,411 ha, 42.06% wheat and rye – 44,836 ha, 4.71% barley and two row barley - 5,017 ha, 3.47% oats - 3,710 ha, 1.36% "other

cereals" - 1,447 ha and 0.17% sorghum - 178 ha.

The average of the analyzed period, shows at county level, a total area cultivated with cereals of 108,461.33 ha, of which the main cereal species achieved: 0.07% sorghum (72.33 ha); 1.20% "other cereals" (1,297.67 ha); 3.39% oats (3,678.33 ha); 4.34% barley and two row barley (4,712.33 ha); 58.14% wheat and rye (43,791.67 ha); 50.63% grain maize (54,909.0 ha).

Reported at national level, Mehedinți County held: 2.17% of the area allocated to the maize corn crop, 2.16% to the oats, 2.08% to wheat and rye, 2.02% to the general level, 1.0% to the barley and two row barley crop area, 0.59 % of the sorghum surface (fig. 1.). Analyzing the situation of Mehedinți County, in the context of the South-West Oltenia Development Region, it is observed that it had variable weights (in the main species) from 2.54% in the case of sorghum, up to 20.27% in the case of oat. (Fig. 1.).

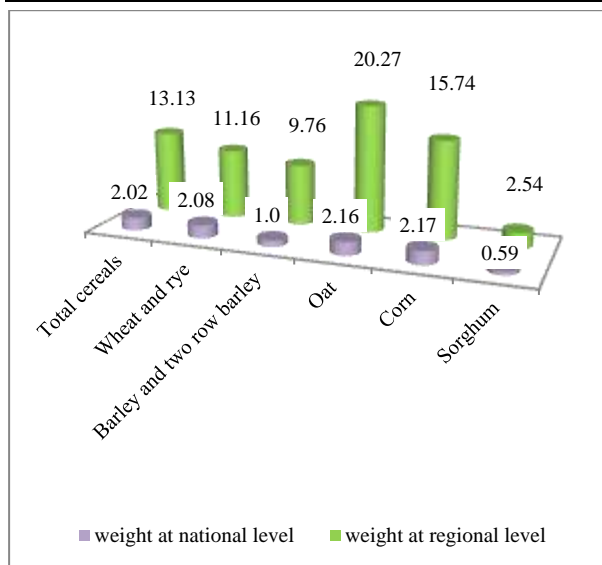


Fig. 1. The cultivated surface. Mehedinți county share at national and regional level - average of the period (%)

Source: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table> (Accessed on 20.12.2018)

The structure of the county cereal production, on a general level and on crops are shown in Table 2.

In 2015, from the county total of 309,590 t, it is observed that the main crop was maize with 157,557 t - 50.89% of the total, followed by wheat and rye with 129,866 t - 41.95%, barley and two row barley with 12,580 t - 4.06 %, oats with 5,833 t - 1.88%, "other cereals" with 3,748 t - 1.21% and by sorghum with a total production of 6 t - 0.01% of the total.

The year 2016, is noted by a county level of total cereal production of 391,524 t, of which, the component crops held weights, as follows: 51.41% maize corn - 201,282 t, 41.30% wheat and rye - 161,715 t, 4.08 % barley and two row barley - 15,960 t, 2.02% oats - 7,916 t, 1.17% "other cereals" - 4,566 t and 0.02% sorghum - 85 t.

Table 2. Total production (2015-2017)

Specification	Year						Average**	
	2015		2016		2017			
	Eff. (t)*	Str. (%)**	Eff. (t)*	Str. (%)**	Eff. (t)*	Str. (%)**	Eff. (t)	Str. (%)
Total cereals	309,590	100.00	391,524	100.00	588,525	100.00	429,879.67	100.00
Wheat and Rye	129,866	41.95	161,715	41.30	219,285	37.26	170,288.67	39.61
Barley and Two row barley	12,580	4.06	15,960	4.08	20,298	3.45	16,279.33	3.79
Oats	5,833	1.88	7,916	2.02	8,792	1.49	7,513.67	1.75
Maize	157,557	50.89	201,282	51.41	334,067	56.76	230,968.67	53.73
Sorghum	6	0.01	85	0.02	99	0.02	63.33	0.01
Other cereals	3,748	1.21	4,566	1.17	5,984	1.02	4,766.00	1.11

*<http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table> (Accessed on 20.12.2018)

**own calculation.

If we analyze the situation of 2017, we notice that the total cereal production - 588,525 t - was constituted by variable sequential contributions. Thus - in ascending order - the crops contributed: 99 tons of sorghum - 0.02% of the total, 5,984 t "other cereals" - 1.02%, 8,792 t oats - 1.49%, 20,298 t barley and two row barley - 3.45%, 219,285 t wheat and rye - 37.26% and 334,067 t of maize - 56.76%.

Based on the data presented above, the average of the period was determined, which is characterized by a total county level of 429,879.67 t, whose structure was the

following: 53.73% maize - 230,968.67 t; 39.61% wheat and rye - 170,288.67 t; 3.79% barley and two row barley - 16,279.33 t; 1.75% oats - 7,513.67 t; 1.11% "other cereals" - 4,766.0 t; 0.01% sorghum - 63.33 t.

Analyzing the situation of the county Mehedinți, at national level, it is observed that it had variable weights (in the main species) from 0.17% in the case of sorghum, to 1.98% in the case of oats (Fig. 2.) - weights lower than those held of the cultivated area. Reported, in the situation specific to the South-West Oltenia Development Region, Mehedinți County obtained: 21.94% for oats,

15.80% from the production related to the maize crop, 13.28% at the general level, and 11.42% from the wheat and rye production, 8.87% from barley and two row barley production and 1.09% from sorghum production (Fig. 2).

Table 3 contains information regarding the level of average production per productive unit (kg/ha).

In 2015, the county obtained a total average production of 2,880 kg / ha, against which - at the level of the component crops of the group - the situation was the following: 3,068 kg / ha in wheat and rye (106.53% compared to the comparison term - general level of the indicator), 2,978 kg / ha for barley and two row barley (103.40%), 1,587 kg / ha for oats (55.10%), 2,808 kg / ha for maize (97.50%), 1,000 kg / ha for sorghum (34.72%) and 3,308 kg / ha for "other cereals" (114.86%).

The year 2016, registered an average county production of 3,518 kg / ha, against which we find positions of cereal crops as follows: 61.65% oats - 2,169 kg / ha, 73.22% sorghum - 2,576 kg / ha, 92.67% barley and two row barley - 3,260 kg / ha, 98.86% "other cereals"

- 3,478 kg / ha, 100.03% corn - 3,519 kg / ha and 103.98% wheat and rye - 3,658 kg / ha.

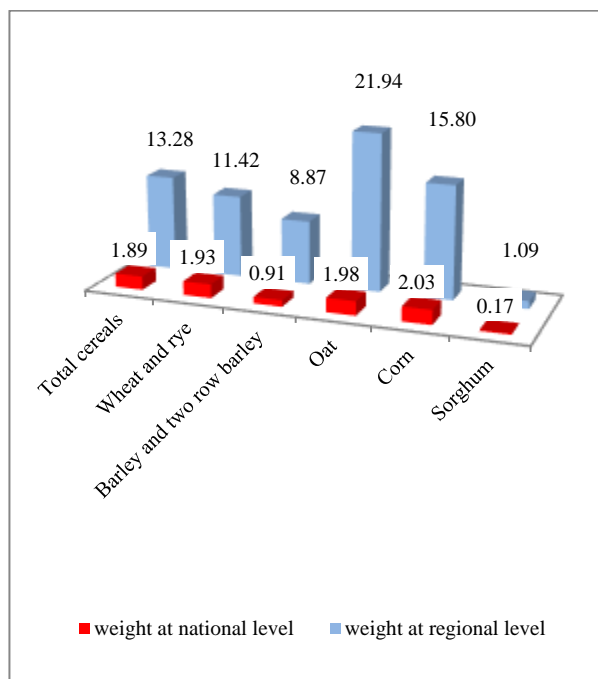


Fig. 2. Total production. Mehedinti county share at national and regional level - average of the period (%)
Source: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table> (Accessed on 20.12.2018)

Table 3. Average yield (2015-2017)

Specification	Year						Average**	
	2015		2016		2017		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	2,880	100.00	3,518	100.00	5,521	100.00	3,963	100.00
Wheat and Rye	3,068	106.53	3,658	103.98	4,891	88.59	3,889	98.13
Barley and Two row barley	2,978	103.40	3,260	92.67	4,046	73.28	3,455	87.18
Oats	1,587	55.10	2,169	61.65	2,370	42.93	2,043	51.55
Maize	2,808	97.50	3,519	100.03	6,498	117.70	4,206	106.13
Sorghum	1,000	34.72	2,576	73.22	556	10.08	876	22.10
Other cereals	3,308	114.86	3,478	98.86	4,135	74.90	3,673	92.68

*<http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table> (Accessed on 20.12.2018)

**own calculation.

For the year 2017, at the county level, average variable yields were obtained from 556 kg / ha in the case of sorghum (-89.92% compared to the general county level) up to 6,498 kg / ha in the case of maize (+ 17.70%). The rest of the crops were below the general level of

the indicator (5,521 kg / ha), as follows: -57.07, -26.72, -25.10 and -11.41% oats, barley and two row barley, "other cereals", respectively wheat and rye (2,370, 4,046, 4,135 and 4,891 kg / ha).

At county level, the average of the period shows an average production of 3,963 kg / ha, against which, the positioning of the crops was the following: -77.90% sorghum - 876 kg / ha; -48.45% oats - 2,043 kg / ha; -12.89% barley and two row barley - 3,455 kg / ha; -7.32% "other cereals" - 3,673 kg / ha; -1.87% wheat and rye - 3,889 kg / ha; + 6.13% maize - 4,206 kg / ha.

Reported at national level, Mehedinți County has realized average productions, on the productive unit, strictly subunit, from 29.53 to 93.42% for sorghum and total cereals respectively (Fig. 3).

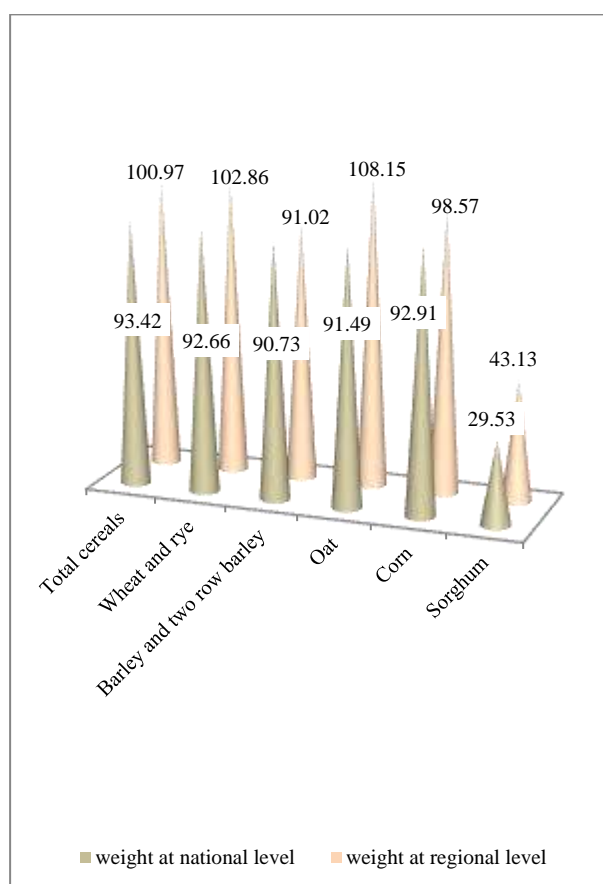


Fig. 3. Average production. Mehedinți county positioning at national and regional level - average of the period (%)

Source: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table> (Accessed on 20.12.2018)

Analyzing the situation of Mehedinți county, in the context of the South-West Oltenia Development Region, it is observed that it has exceeded the reporting term for total cereals (100.97%), wheat and rye (102.86%) and oats (108.15%), and to the rest of the crops, the

actual level of the average county production is below the reference term (from 43.13 to 98.57% for sorghum and maize - Fig. 3).

CONCLUSIONS

If we refer to the cultivated area, within the total area of 108,461.33 ha, maize, wheat and rye predominate (weights of 50.63 and 40.37% respectively), the rest of the crops having weights below 5%. The indicator evolved unevenly over time for the entire cultivated area, an aspect that also manifests itself for oats and maize, respectively, with the exception of the rest of the crops that recorded increases of the indicator. In general, except for sorghum, the variations are not very pronounced.

Regarding the total production, the following aspects are worth mentioning: the county obtains a total production of 429,879.67 t, to which the most contributions were made from maize (53.73% - weight higher than the surface), wheat and rye (39.61% - less weight than in the case of the surface), the rest of the crops having contributions of less than 4%; the evolution of the indicator was an ascending one for all the cultures as well as at the general level of the sector. The most pronounced increases occur at sorghum. For years, the year 2017 is noted with the most important increases.

For the average production, the following aspects are to be highlighted: the general level of 3,963 kg / ha of the indicator, against which there are registered surpluses only in maize; at general level the indicator has evolved upwards, except for the sorghum where the evolution was a fluctuating one.

Mehedinți County, does not constitute an important supplier of cereals at national and regional level, but this situation can be improved (within the limits of the existing possibilities, taking into account the existing relief) by increasing the performances of technical and technological nature.

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