

## AGRICULTURAL SYSTEMS PRACTICED IN THE ORȚIȘOARA COMMUNE, TIMIȘ COUNTY, ROMANIA

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**Abstract:** *The purpose of this paper is to highlight the situation of agriculture in the commune of Orțișoara through the areas and productions obtained and the agricultural systems practiced. Located in the northern part of Timiș County, Orțișoara, the commune with the same name, is 24.1 km away from Timișoara. In the composition of this administrative territory are Orțișoara, Călăcea, Cornești and Seceani. The geographical location of the commune during the passage between the plain and the hill areas has allowed, from ancient times, to develop an efficient agriculture in these lands. Orțișoara commune covers an area of 12,960 ha, of which 12,907 ha represents the agricultural land. The agricultural area of the commune is 12,907 ha and it consists of the following categories: arable 11,595 ha, pastures 645 ha, haymaking 589 ha, orchards 69 ha and living 9 ha. As for the classification of this area in quality classes, for the "arable" category, the situation is as follows: 1<sup>st</sup> class 2,563 ha (19.88%), 2<sup>nd</sup> class 5,687 ha (44.0%), 3<sup>rd</sup> class 292 hectares (17.0%), 4<sup>th</sup> class 855 ha (6.6%) and 5<sup>th</sup> class 1,610 hectares (12.5%). [6,7,8]. The limiting factors that strike on the quality of the land (soils) in that the cadastral territory of Orțișoara commune is characterised by the soil reaction (due to the low values on 47.7%), the low humus content (34.8%), slope and surface erosion (17.5%). The paper includes data on the area cultivated with various crops, the yields obtained, the application of fertilizers, amendments, the agricultural parcel, the livestock sector, companies and agricultural constructions during the years 2015-2017. The main crops are: wheat, sorghum, triticale, corn, soybeans, sugar beet, rape and sunflower. Both cultivated areas and yields vary from year to year according to the chosen crop technology (rotation, care, etc.) and pedo-climatic conditions. In addition to cultivating various crops, farmers also deal with animal husbandry. In Orțișoara, there are 33 agricultural companies, which together have an agricultural area of 9,415.25 ha: this shows that agriculture is one of the main occupations of the population in the area, a source of sustainable income and an area in continuous development.*

**Keywords:** *agricultural systems, soils, uses, crops and yields*

### INTRODUCTION

Located in the northern part of Timiș County, Orțișoara, the commune with the same name, is 24.1 km away from Timișoara. In the composition of this administrative territory are Orțișoara, Călăcea, Cornești and Seceani.[13,14] The geographical location of the commune during the passage between the plain and the hill areas has allowed, from ancient times, to develop an efficient agriculture in these lands. Orțișoara commune covers an area of 12,960 ha, of which 12,907 ha represents the agricultural land. The agricultural area of the commune is 12,907 ha and it consists of the following categories: arable 11,595 ha, pastures 645 ha, haymaking 589 ha, orchards 69 ha and living 9 ha.[1,2,3]

Agriculture is a traditional branch of the Romanian economy, which has as a means of production the land fund (all land located within the boundaries of a country, including those under water), which provides the necessary food for the population, raw materials for industrial branches and products for export.[4,5,7]

The natural and social conditions that influence agricultural production are:

- Natural conditions represented by the relief play a role of thermal threshold, causing a differentiation of agricultural practices on large relief units: animal breeding predominates in mountain areas; viticulture and fruit growing, and animal husbandry predominate in hill and plateau areas; cereals, industrial and vegetable plants predominate in plain area despite phenomena that partially compromise crops (frost, drought, etc.); [16], soils are highly fertile in the plain (molisols), medium fertile in hill and plateau areas (argiluvisol and cambisol), sometimes affected by geomorphological processes requiring melioration; [6,9,10]

- Demographic conditions: increase of the number of inhabitants requires larger and more diversified productions, while in areas with high population density it is necessary to practice cultures that require more labour force, and in the low-density areas, mechanization of agriculture;[8,11,12]

- Industrial conditions are represented by the industrial branches that are conditioned by the distribution of agricultural crops (sugar, oil, canning, etc.), thus placing their location in cultural areas in order to reduce production costs and to make the production more efficient.[15,17]

## MATERIALS AND METHODS

For the elaboration of the paper, we used data obtained through our own observations, through data accessed from the Statistical Yearbook of Romania, from M.A.D.R., I.N.S.S.E., APIA, AFIR, Nadlac commune, and from discussions with the farmers.

## RESULTS AND DISCUSSIONS

This paper presents data on the harvested area and the yields obtained, the application of fertilizers, amendments, the agricultural parcel, the livestock sector, companies and agricultural constructions for the period 2015-2017.

Table 1.

Year	Area (ha)				
	Wheat	Barley	Two-row barley	Triticale	Sorghum
2015	3970	300	650	800	22.5
2016	4212	420	500	825	22.5
2017	3780	320	200	460	0

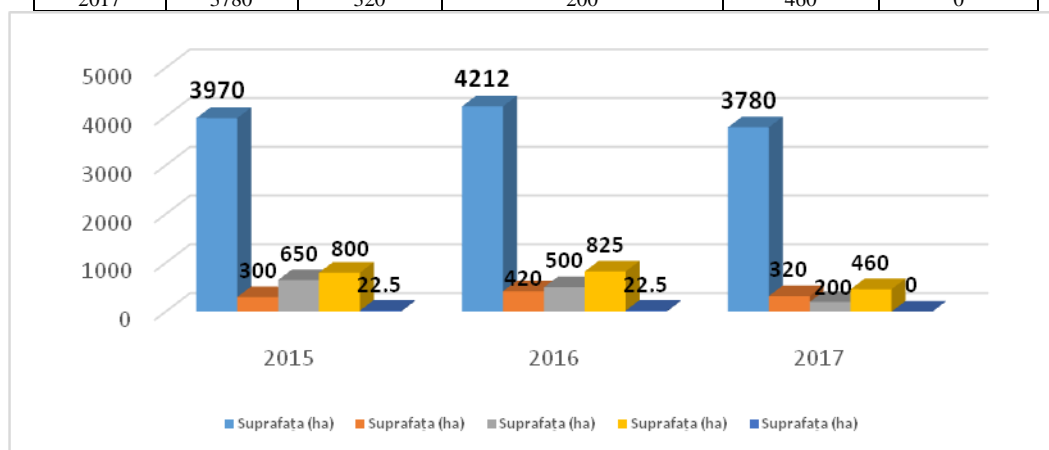


Fig. 1. Area cultivated with cereals

As we can see in the above graph, the differences between the areas are not very high. Sorghum, in 2017, was no longer cultivated (0 ha). Wheat occupied the largest areas.

Table 2.

Year	Area (ha)			
	Sunflower	Rape	Soy	Sugar beet
2015	1240	900	630	170
2016	1130	7800	850	170
2017	1380	1100	120	0

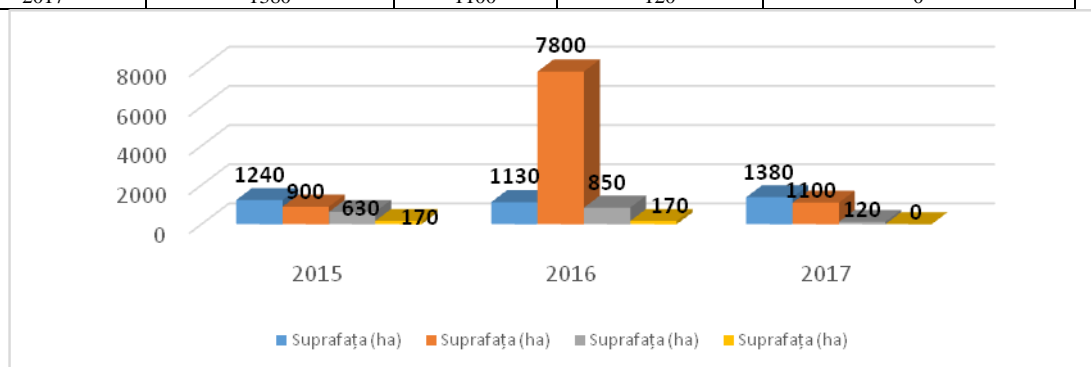


Fig. 2. Surface cultivated with sunflower, rape, soy, sugar beet

Figure 3 shows a significant increase in surface area in rape in 2016 compared to other years, the cultivated area being 7,800 ha, and one important thing that is also noticeable in the graph is that sugar beet in 2017 was not cultivated (0 ha) due to the fact that there were no processing facilities.

Table 3.

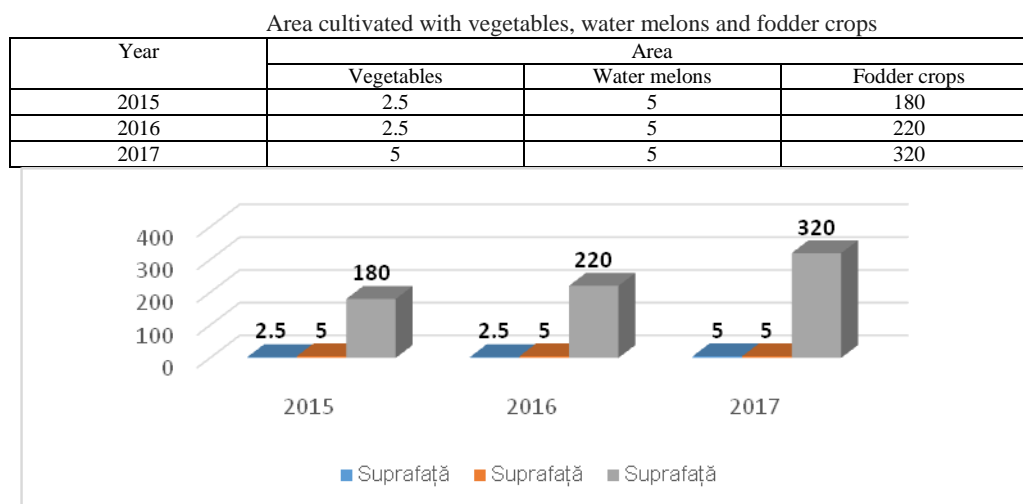


Fig. 3. Area planted with vegetables, water melons and fodder crops

The areas cultivated with vegetables and water melons during the three years studied did not show large differences (they were almost constant); only in 2017, the area cultivated with vegetables increased by 2.5 ha. A visible increase is observed in fodder crops, also.

The livestock sector included swine, sheep and cattle, with sheep ranking first.

## CONCLUSIONS

In 2015, the main crops cultivated were cereals, maize, sorghum, oil plants, sugar beet, vegetables, water melons and fodder crops. The largest area was occupied by wheat with a total of 3,970 ha, followed by maize with 2,700 ha and sunflower with 1,240 ha.

In 2016, the wheat area grew to 4,212 ha, whereas maize and sunflower fell to 2,430 ha and 1,130 ha, respectively. The area decreased as compared to 2015 in barley with 150 ha and in rape with 120 ha. Instead, areas grew in triticale with 25 ha, 120 ha in barley, 220 ha in soy, and fodder crops with 40 ha. The rest of crops, namely sorghum, sugar beet, vegetables and water melons, had the same area as in 2015.

In 2017, compared to the two preceding years, there was a decrease of the areas cultivated with wheat, triticale and barley, with some crops not cultivated at all – sorghum and sugar beet. Instead, the area cultivated with maize, sunflower, rape, soy and fodder crops grew.

The arable land of Orțișoara had an area of 11,570 ha, the grasslands had 1,559 ha, agricultural land had 13,730 ha, non-agricultural land had 833 ha, degraded and unproductive land 337 ha, and vineyards and orchards had 0 ha.

There are 33 agricultural holdings, which, together, had an agricultural area of 9,415.25 ha.

The livestock sector of the locality had a total of 5,983 cattle, sheep and pigs.

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