

AGRICULTURAL SYSTEM OF BRETEA ROMÂNĂ COMMUNE, HUNEDOARA COUNTY

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Abstract: *Within this paperwork will be presented the harvested areas, the productions obtained during two years 2016-2017 for the main crop plants (cereals, potatoes, vegetables and fodder plants) in the commune Bretea Română, Hunedoara County as well as fertilizers, amendments and pesticides applied. The economic and social importance of agriculture as the sole source for meeting basic needs of people - food and clothing - and without which there is no talk of social peace and normal economic development, is recognized by all countries of the world. The significant potential of the Romanian agriculture, as well as the increase of prices for agricultural products internationally, could keep the interest of foreign investors in this sector high. This is one of the conclusions of economic analysts with interest in the field of agriculture. They argue that Romania has the highest level of use of unpaid family workers in agriculture in the EU-27. Also, low investment rates have increased the vulnerability of Romanian agriculture to weather conditions and have induced this sector to be highly volatile. The Bretea Română commune is located in the south-central part of Hunedoara County, at a distance of:*

- 38 km from the municipality of Deva - county residence
- 20 km from the municipality of Hunedoara

The administrative territory of the Bretea Română commune is 10096 ha (100.96 km²), representing 1.42% of the county's surface..

The relief of the Bretea Română commune is made up of mountainous peaks, hills and the meadow area, located in the immediate vicinity of the Streiului Valley.

- The hills on the right side of the Strei
- The hills on the left side of Strei

The pedographic characteristics of the studied area (Bretea Română commune), reflect the genetic conditions related to the rock, the marne, the altitude, the slope, the exposure of the slopes. Streiului meadow with its alluvial soils is the best agricultural area of the commune. Here the inhabitants of the villages: Poplar, Bretea Streiului, Bretea Română, Rusi, Batalar, cultivate cereals, vegetables, potatoes, technical plants, etc., the crop yields obtained here are larger than in the other areas of the commune.

Key words: *agricultural systems, soil, Bretea Română, crops, areas*

INTRODUCTION

The Bretea Română commune is located in the south-central part of Hunedoara County, at a distance of: (BLAGA GH., RUSU I., UDRESCU S., VASILE D., 1996)

- 38 km from the municipality of Deva - county residence
- 20 km from the municipality of Hunedoara

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The relief of the Bretea Română commune is made up of mountainous peaks, hills and the meadow area, located in the immediate vicinity of the Streiului Valley. (BLAGA GH., FILIPOV F., RUSU I., UDRESCU S., VASILE D., 2005)

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By agricultural system is understood the complex of natural and anthropogenic factors that compete for the natural development of the agricultural production process. Agricultural systems have evolved together with the development of the agricultural production process, with the evolution of science and technology, with the increase of the population and with the modification of the social economic relations. (COSTE I., BORZA I., ARSENE G.G., 2001)

From a practical point of view, the agricultural system is a set of ecological, economic and social components in interaction, created by humans in order to obtain agricultural and animal agricultural products, necessary to satisfy the human needs of food, clothing, shelter and culture. (BORCEAN I., TABĂRĂ V., DAVID GH., BORCEAN EUGENIA, ȚĂRĂU D., BORCEAN A., 1996)

Specialized agricultural systems are characterized by the fact that their activity aims to obtain a single product or type of agricultural product, or to perform certain agricultural services. (DOBREI A., 2003; DOBREI A., ROTARIU LILIANA, MUSTEA M., 2005)

Bretea Română is a commune in Hunedoara County formed of the villages Bățălar, Bercu, Bretea Română (residence), Bretea Streiului, Covragiu, Gânțaș, Măceu, Ocolîșu Mare, Plopi, Ruși, Vâlcelele Bune, Vâlcele and Vâlceluța. (IANOȘ GH., 1999; ȚĂRĂU D., LUCA M., 2003)

It is crossed, approximately in the middle, on the south-north direction by the Strei River. Inside it there is a beautiful mountain area on the eastern and western edges, the piedmont hills, terraces and the Streiului meadow. Bretea Română commune is located in the southern central part of Hunedoara County, at a distance of 38 km from Deva Municipality, 20 km from Hunedoara Municipality, 60 km from Petroșani Municipality, 10 km from Călan Municipality, and 11 km from Hațeg Municipality. (NIȚĂ L. D., 2004)

The geographical position within the depression and the marginal hills, the geographical features and the vegetation influence the elementary climatic levels and are reflected in the diversity of climatic and microclimatic aspects of the commune Bretea Română. Thus we can observe climatic aspects that characterize the high deposits as well as those characteristic of the depression zone. (MIHUȚ CASIANA, RADULOV ISIDORA, 2012; ROGOBETE GH., 1993)

The area of the meadow and the terraces of the Strei, where the 9°C annual isotherm passes (it follows the Strei Valley and the foothills of the depression)

The area of the piedmont hills that make contact with the surrounding mountain region - crossed by the 8°C annual isotherm. (TEACI D., 1970)

Groundwater, in this area, is found at depths of over 5 m, and on the lower terraces the depth ranges between 3 and 5 m. The relief of the Bretea Română commune is made of mountain risings, hills and the meadow area next to the Streiului Valei. Considering the position of the hills against the river Strei, we can divide them into:

- The hills on the right side of the Strei River
- The hills to the left of Strei River

The administrative territory of the Bretea Română commune is 10096 ha (100.96 km²), representing 1.42% of the county's surface. The territory of the Bretea Română commune totals an area of 10096 ha, of which 6610 ha agricultural land.

The agricultural land consists of 3155 ha of arable land, 2146 ha of grassland, 1309 ha of meadows.

The non-agricultural land, with an area of 2257 ha, includes forests.

The Streiului meadow with its alluvial soils is the best agricultural area of the commune. Here the inhabitants of the villages: Poplar, Bretea Streiului, Bretea Romana, Rusi, Batahar, cultivate cereals, vegetables, potatoes, technical plants, etc., the crop yields obtained here are larger than in the other areas of the commune.

MATERIAL AND ETHODS

For the elaboration of the present paper, the data retrieved is taken from different sources of statistics, municipalities and public institutions from Bretea Română, Hunedoara County.

RESULTS AND DISCUSION

The agriculture of the Bretea Română commune, Hunedoara County, is very well developed, and includes a wide range of crops: cereals, technical and fodder plants, vegetables.

In this paper are presented the surfaces harvested, the yields obtained during two years 2016-2017 for the main crop plants (cereals, potatoes, vegetables and fodder plants) within the Bretea Română commune, as well as the fertilizers, amendments and pesticides applied to these crops.

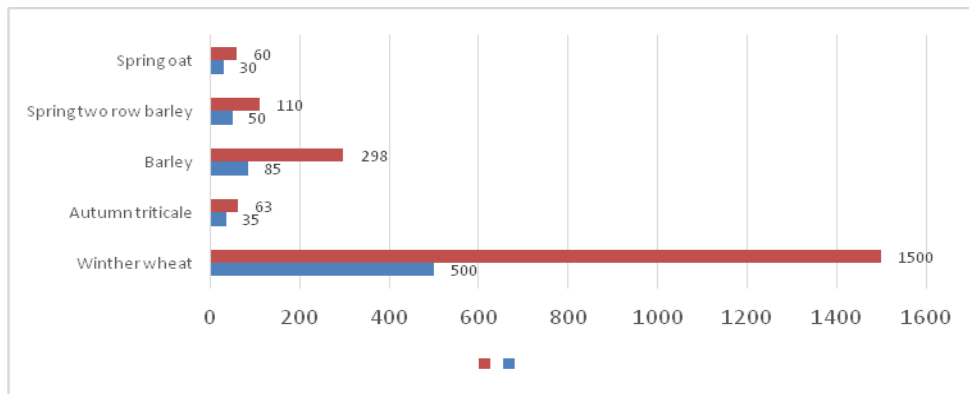


Fig. 1. Surface area and cereal yield in 2016

In 2016, the following areas are cultivated with cereals: 500 ha cultivated with wheat, 85 ha barley, 50 ha two-row barley, 30 ha oats and 35 triticale, and the yields obtained are: 1500 t of wheat, 298 t of barley, 110 t of two-row barley, 60 t of oats and 63 t of triticale.

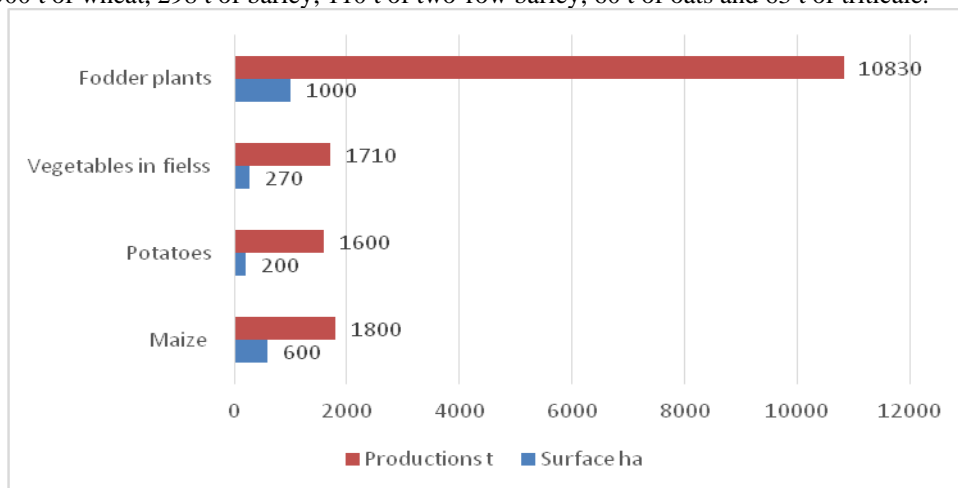


Fig. 2. The area and yield of maize, vegetables, potatoes and fodder plants in 2016

The figure above shows the cultivated areas and the yields obtained for maize, potatoes, vegetables and fodder plants in 2016

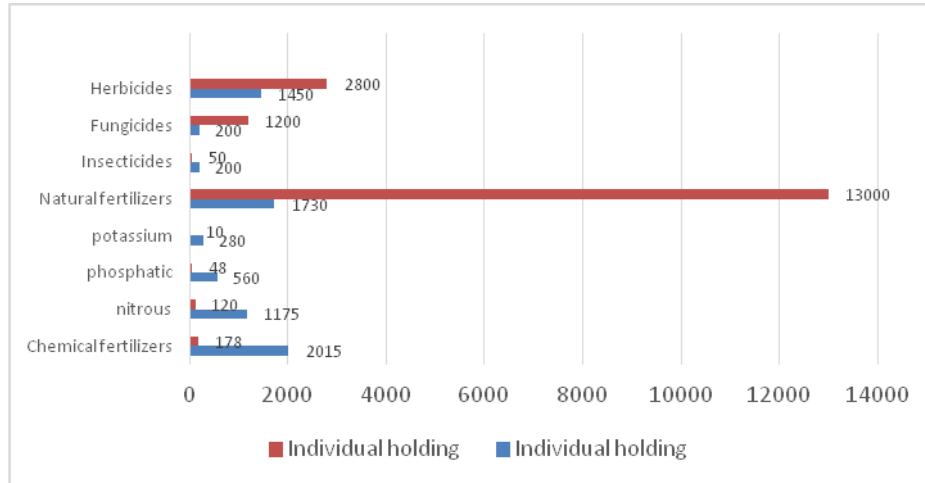


Fig. 3. Application of fertilizers, amendments and pesticides in 2016

In 2016, the following were applied in total: chemical fertilizers on an of 2015 ha in the amount of 178 tons, natural fertilizers on a area of 730ha in the amount of 1300 kg and herbicides on a surface of 1450 ha in the amount of 2800 kg .

Natural fertilizers used on crops in 2016 were administered on a total area of 1730 ha, in the amount of 8500 tons.

Chemical fertilizers used on crops in 2016 were administered to the following crops: wheat, rye, maize, vegetables, potatoes and fodder plants, on a total area of 1930 ha, in the amount of 169 tons.

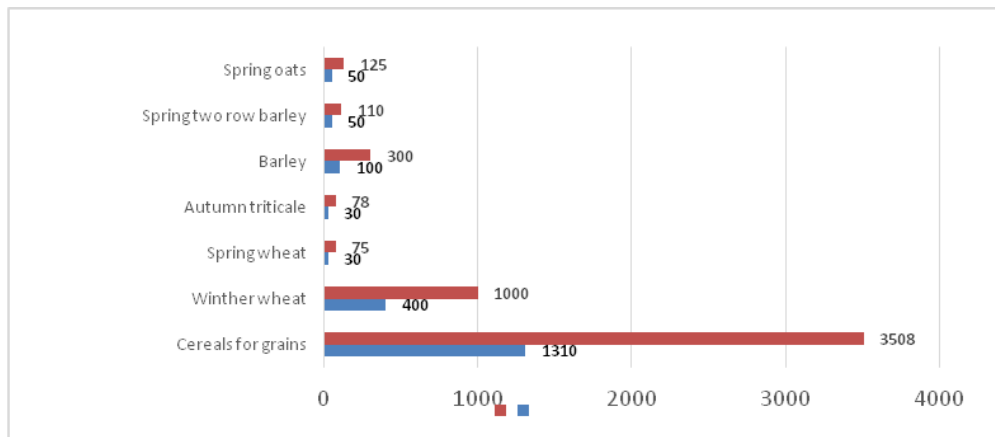


Fig. 4. Area and yield obtained from cereals in 2017

In 2017, the following areas are cultivated with cereals: 400 ha cultivated with wheat, 30 ha of spring wheat, 100 ha of barley, 50 ha of two-row barley and oats, 30 ha of triticale, and the yields obtained are: 1000 t of wheat, 300 t of barley, 110 t of two-row barley, 125 t of oats and 78 t of triticale.

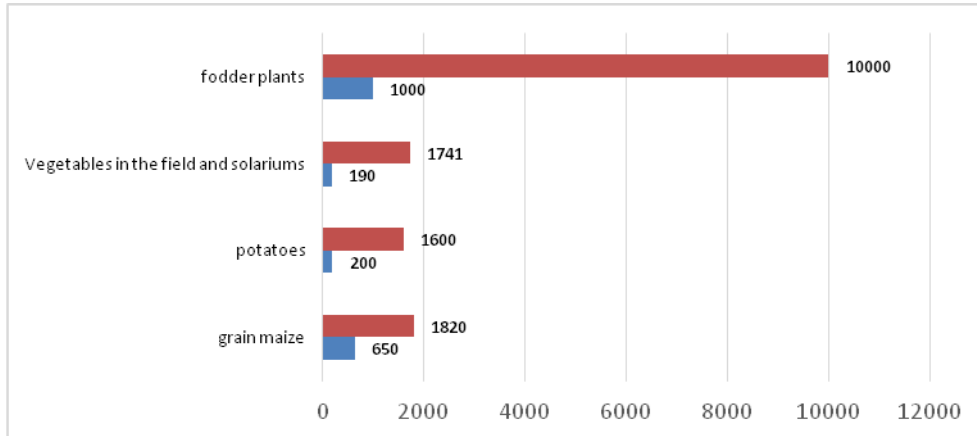


Fig. 5. Area and yield obtained for maize, vegetables, potatoes and fodder plants in 2017

Figure 4 and figure 5 show the cultivated areas and the yields obtained for maize, potatoes, vegetables and fodderplants in 2017.

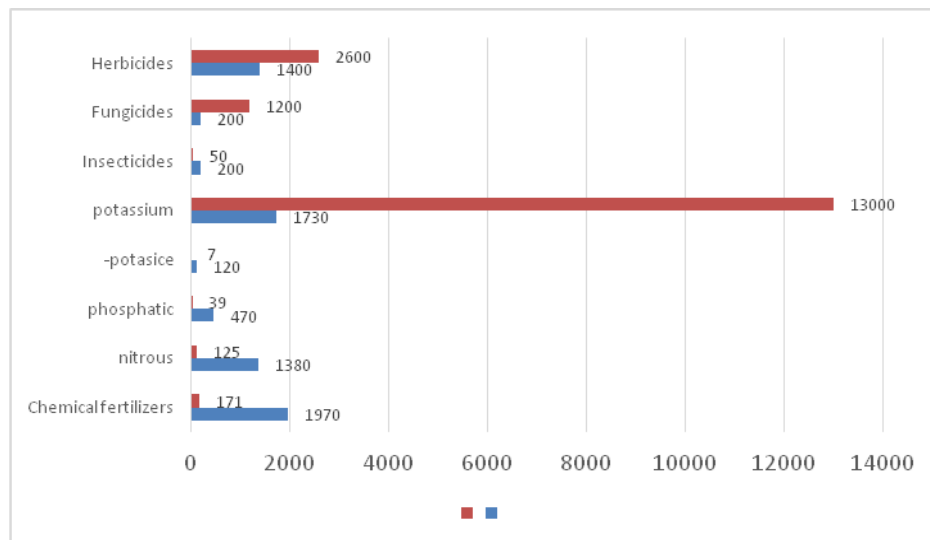


Fig. 6. Application of fertilizers, amendments and pesticides in 2017

In 2017, a total of 171 tonnes of chemical fertilizers were applied on a surface of 1970 ha, 1300 kg of natural fertilizers on a surface of 1730 ha, and 2600 kg of herbicides on a surface of 1400 ha.

In 2016, 13000 tonnes of natural fertilizers were used on crops, on a total area of 1730 ha.

In 2017, 171 tons of chemical fertilizers were used following crops: wheat, rye, maize, vegetables, potatoes and fodder plants, on a total area of 1970 ha.

CONCLUSIONS

Small differences were observed in the case of areas on cereals over the years.

In 2017, spring wheat was grown on an area of 30 ha.

There has been an increase in the areas cultivated with maize from year to year.

For potatoes, both the area and the yield were constant during the two years.

For vegetables and fodder plants, the cultivated areas decrease with the passing of years.

The favorable agricultural year, with the best yields, was 2016.

The application of natural and chemical fertilizers used on crops is kept close both as applied areas and as quantity with very small exceptions.

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