

THE EVOLUTION OF THE ORCHARD AREAS AND THE FRUIT PRODUCTION OBTAINED IN BIHOR COUNTY IN THE PERIOD 2020-2021

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Abstract: The purpose of this paper is to analyze the orchard areas and fruit production obtained in Bihor county between 2020 and 2021. In Bihor County, horticulture is a traditional activity of great economic importance, developed over time, as a result of the favorable natural conditions it finds. Unlike other crops, an orchard is a long-term investment, which can provide significant production for many years, once the plantation bears fruit (3-4 years after planting).

Key words: orchard, fruit production, crop, Bihor County

INTRODUCTION

An orchard has a lifespan of decades. The normal growth and development of trees and especially the productivity and quality of fruits depend on a number of factors such as: zoning (choice of location), choice of land, water source, choice of species / varieties [3].

The high cost of investing in fruit growing requires the location of tree orchards in areas where the species or variety will meet the maximum of natural conditions for growth and fruiting:

- the lands with fertile soils will be chosen, preferably with medium, loamy, loamy-sandy and even sandy texture, permeable, medium to deep, with a pH between 4.7 and 9.3;
- from the point of view of the slope, the lands with a slight slope of 3-6% are very good, which allow a good maintenance of the soil as well as an easy transport of the fruits [12];
- the tree orchards can be placed in good conditions on the land with a slope of 6-12%, with the orientation of the rows on the direction of the level curves and even slopes up to 18-20%, provided that they are uniform [8];
- the priority condition for setting up an orchard is the water source necessary for spraying and watering the trees, especially in areas with low rainfall during the year;
- care will be taken to protect the area as much as possible from late spring frosts and winter frosts [9];
- it must be taken into account that in fruit growing the big mistakes are manifested after 4-5 years from planting, when it is too late for remediation;
- excessively damp and undrained lands, such as those with a water table below 1.5 m, are excluded from planting [4].

However, in order to get the best results, setting up an orchard of fruit trees requires great attention to detail [1].

MATERIALS AND METHODS

The key research methods employed were analysis and synthesis, analogy, and graphics to resemble the results.

RESEARCH RESULTS

The types of fruit plantations differ in relation to the purpose of production, cultivated area, fruit quality, etc., in:

- commercial, aim to obtain large productions, homogeneous in variety and quality, intended for sale as fresh fruit or for industrialization. They include 1-3 species, with a small number of varieties, which allows the application of a correct care technology. They can be made in a super-intensive system, with over 1250 trees / ha, in an intensive system, with 400-1250 trees / ha and in a classic system, with up to 400 trees/ha [10];

- didactic and experimental, they are set up in profile resorts, faculties, profile schools. In these plantations, the behavior of the varieties or of the different technological variants is followed. These are divided into plots, according to the rules of experimental technique [11];

- family - are located around the houses or a short distance from them and have the main role of supplying the family with fruit throughout the year, plus (possibly) a reserve for the market. They are also a possibility to spend free time, having an aesthetic, anti-pollution role. They include a large number of species and varieties, with staggered ripening [13];

- alignment - are practiced along roads, highways, irrigation canals, railways, etc. They are made of species and varieties resistant to frost and disease and use large trees: walnut, mulberry and some varieties of apple, pear, plum. This type is less and less practiced [5].

The establishment of an orchard of fruit trees is done for the purpose of harvesting and marketing fresh fruit, preparing canned food or for the production of distilled alcohol. Of course, the intention is to produce as much fruit as possible, of superior quality, long-term and very long-term. These performances are obtained only if the establishment will be done on the right soil. In general, the most suitable soil for fruit trees is the one rich in humus [7]. Very moist or compact soils are not the most suitable for the orchard. Soil quality correction can best be done by composting. Other substances forcibly added to the soil, such as limestone, peat or even chemical fertilizers, are not necessarily beneficial. Soil enrichment is recommended only when necessary, after its laboratory analysis, and the detection of deficiencies that could affect the crop [6].

Horticultural crops have a special significance for the population and the economy due to the quality products obtained, they being requested by consumers and industry in a much wider range, compared to other products of vegetable and animal origin [15]. Horticultural crops, through their products, they make an essential contribution to the rational nutrition of the population, both due to their content in nutrients and energy, but especially through the favorable influence they have on the functions of the human body. In Romania, horticulture is a traditional activity of great economic importance, developed over time, as a result of the favorable natural conditions it finds [2].

Obtaining high productions in fruit plantations is closely correlated with the choice of place for planting but also with the most efficient systems and methods of soil maintenance and tree care. It is very important that the recommended culture technologies are respected and applied in time for each culture [14].

Bihar County is located in the North Western part of Romania, on the Crișul Repede rivers and Crișul Negru, bordered on the East by the Apuseni Mountains, and on the West by the Tisa Plain, having as neighbors: North Satu Mare county; to the East the counties of Sălaj, Cluj, Alba; to the South, Arad County; Western Hungary [15]. The continental-moderate climate is influenced by the Western humid air masses, which are more humid. The average annual temperature varies between 6 ° C and 10.5 ° C, and the amounts of precipitation grow from West to East, being between 500 and 1200 mm.

Bihar County comprises a variety of landforms, representing an optimal area for diversified agricultural crops. The agricultural area of Bihar occupies approximately ¾ of the area total of the county, with about 3% above the national average and of which over

63% is arable. The areas occupied by orchards and vineyards are well below the national average.

Regarding the fruit production obtained in Bihor County, in 2021 a quantity of 49928 tons was obtained and in 2020 a production of 35807 tons.

A great importance in setting up orchards and obtaining fruit in Bihor County is the temperate continental climate, the hydrographic network dominated by three main basins, the existence of a network of canals, designed for irrigating land and soil resources suitable for horticultural crops.

In Bihor County, the area occupied by orchards in 2021 is 4089 hectares, of which on 2100 hectares are apples, on 1305 hectares are planted plums, on 161 hectares are pears and 523 hectares represent cherry and sour cherry orchards.

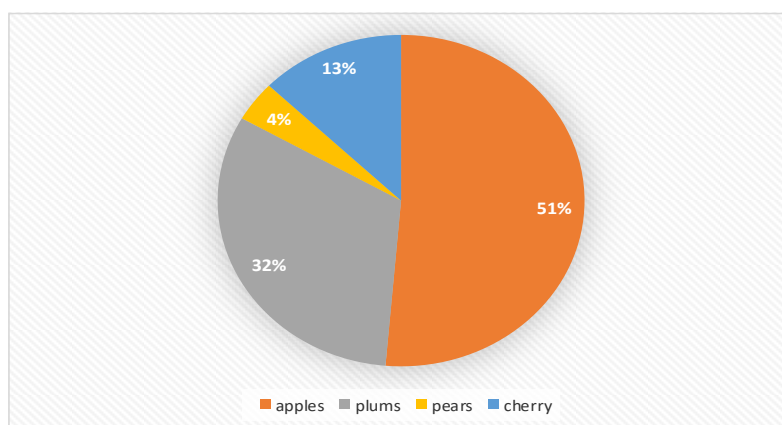


Figure 1. Orchards structure in 2021 in Bihor County

Source: data provided by the National Institute of Statistics

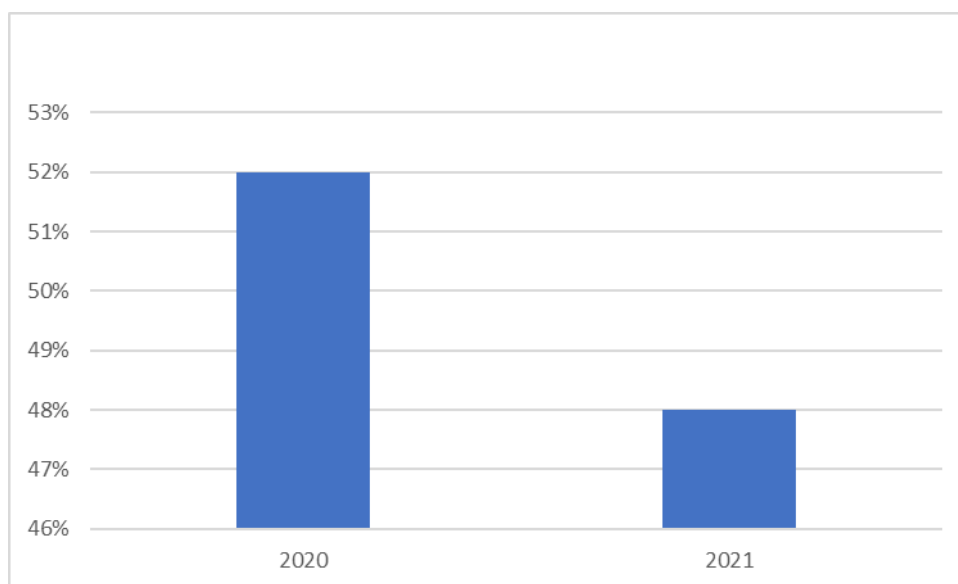


Figure 2. Orchard areas in Bihor County in 2020-2021

Source: data provided by the National Institute of Statistics

In fruit growing, during 2021, an attempt was made to stop the decline in this sector, by increasing the areas with young plantations, with species and varieties of high value, which would eventually lead to an increase in fruit production.

By providing subsidies, the state stimulates investment for the establishment, modernization and deforestation of perennial plantations.

In addition to the rejuvenation of the orchards, in fruit growing there is also a need to develop the processing and storage part, Romania being deficient in fruit growing in these respects. If agricultural production could be processed in the country, farmers would make higher profits. The amounts allocated for this sub-program in fruit growing may be used for the establishment of the plantation, planting material production, support and irrigation system, equipment, storage and processing of production.

The conditions in which the fruit growers from Bihor County carried out their activity in 2020-2021 were not the easiest either from the perspective of the quality of the plantations, approximately 50% of the orchards in Bihor County being aged. This leads to a limited level of financial gain from the start, as the quality of the fruit does not correspond to the standards for consumption, and it is necessary to direct them to the industry, which means lower prices. Also, the aging of orchards, naturally associated with the reduction of the hope of profit, shows the need for massive investments in the fruit sector.

CONCLUSIONS

Bihor county offers favorable pedoclimatic conditions for orchards, it is known the existence of a tradition of fruit growing and fruit trees established in the area, there is a high potential for rapid conversion.

However, the fruit plantations in Bihor County are aging, have a low regeneration rate, outdated, are used uncompetitive production technologies. There is a low degree of association, the local market is dominated by external supply and there is a low capacity for co-financing. The investment capacity in reconversion is very low, as well as weak possibilities for conditioning, storage, processing, transport of fruit. Young people show a low interest in profile schools and faculties.

People should be encouraged to reorient their interest in Romanian fruits and funding programs should be promoted. Also, in order for an orchard to bear fruit and last as long as possible, it is necessary to use a certified planting material.

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