EVOLUTION OF THE AGRICULTURAL SYSTEM OF PILU TOWN FROM ARAD COUNTY

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Abstract: *The economic and social importance of agriculture as a unique source for satisfaction of basic needs for people - food and clothing - and without which we cannot speak of social peace and normal economic development, it is recognized by all countries of the world. The considerable increase in the number of agricultural land owners to over 5 million from which the number of active ones is 1.2 - 1.5 million, raises complex problems regarding the realization of efficient agricultural holdings, which ensure decent incomes for the family and accumulation possibilities for the purpose of its modernization. Through this paper we wish to bring to light the evolution of the agricultural system from Pilu town. The data presented in this paper shows how agriculture evolved from the year 2020 to 2022. The crops with the highest productions in the three years analyzed are cereal crops for grains, where in 2020 a production of 14003 tons was achieved, in 2021 the production obtained was 9720 tons and in 2022 6372 tons were harvested. Of the three years tracked, only in 2021 and 2022 do we find eloquent data regarding the calamity surfaces. In all the 3 years in which the culture of oil plants is found in the scheme culture crops, the first place in terms of the product obtained is the sunflower crop. The year 2021 is the only year in which eloquent data is presented in what concerns the livestock of the locality.*

Keywords: *agriculture, crops, livestock, grains, agronomy*

INTRODUCTION

The economic and social importance of agriculture as a unique source for satisfaction of basic needs for people - food and clothing - and without which we cannot speak of social peace and normal economic development, it is recognized by all countries of the world.

The considerable increase in the number of agricultural land owners to over 5 million from which the number of active ones is 1.2 - 1.5 million, raises complex problems regarding the realization of efficient agricultural holdings, which ensure decent incomes for the family and accumulation possibilities for the purpose of its modernization.

Pilu is located in the plain between Crișul Alb and Crișul Negru, in the western extremity of the country at 46 degrees 32 minutes 3 seconds north latitude and at 21 degrees 38 minutes east latitude on one side and the other of Crișul Alb at a distance of 42 km from the municipality of Arad and 72 km by the municipality of Oradea. The administrative territory of the city is bordered to the East by the territory of the SinteaMare commune (with the villages of Țipari and Adea) and Zărand (Cintei), to the West by the Socodor commune, to the South by the Șimand commune and to the North by the Zerind commune.

From a climatic point of view, it belongs to the climate of the Tisa Plain, that is, to a transitional continental climate, influenced by the current of the West Winds, with mild winters and dry summers with moderate temperatures.

The average annual temperature calculated over a period of 32 years is 10.7 degrees. In 1985, the lowest temperature in the last 40 years was recorded, of -24.9 degrees. The average annual atmospheric pressure is 1005 millibars. Precipitation amounts to an annual average of

561 mm. The highest amount of precipitation was recorded in 1966, 1970, 1974 when the values exceeded 720mm, and the lowest value was 380mm in 1946 and 370mm in 1947 respectively.

Through this paper we wish to bring to light the evolution of the agricultural system from Pilu town. The data presented in this paper shows how agriculture evolved from the year 2020 to 2022.

MATERIAL AND METHODS

In this paper, data from Pilu City Hall were analyzed from a statistical point of view. these data show both the evolution of agriculture in the locality and the farming system used in this locality.

RESULTS AND DISCUSSIONS

The crops with the highest productions in the three years analyzed are grain crops, where in 2020 a production of 14003 tons was achieved, in 2021 the production obtained was 9720 tons and in 2022 6372 tons were harvested.

Table 1.

Field crops of the year 2020

Name of the crops	**Harvested area -hectares-**	**Obtained production -Tons-**
Cereals for grains - total	2043	14003
Autumn wheat	884	4419
Autumn triticale	96	480
Barley	8	34
Autumn oats	97	195
Kernels corn	953	8875
Other cereals	5	
Oil plants - total	799	1863
Sunflower	498	1344
Rape	58	203
Soy beans	243	316
Field vegetables	61	39
Tomato	1	2
Cabbage	3	20
Pepper	1	10
Pea pods	54	
Eggplants	1	2
Other vegetables	1	5
Fodder plants-total	1367	4616
Alfalfa for hay, green mass	457	1829
Clover for hay and green mass	55	220
Other perennials for hay and green mass	745	2237

Annual for hay and green mass	110	330

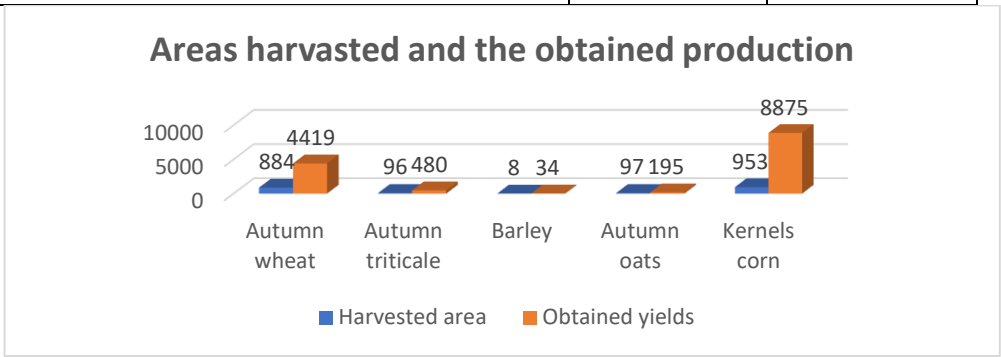

Fig. 1. Harvested areas and yields obtained in 2020 cereal crops

The highest obtained production from the cereal for grains section was the kernels corn with 8875 tones.

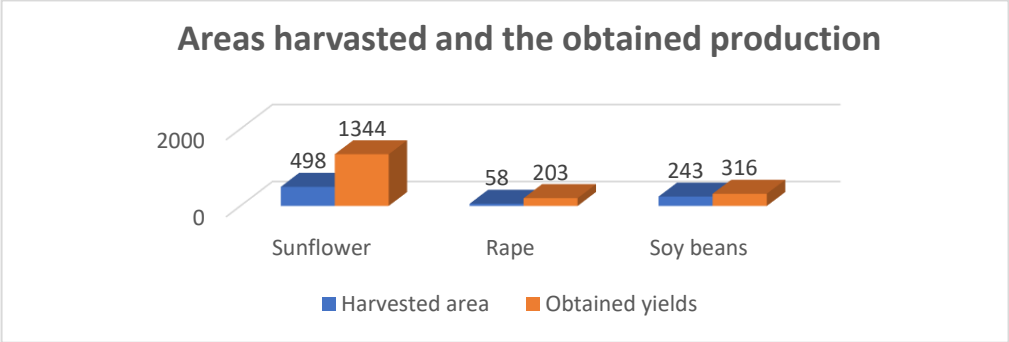

Fig. 2. Harvested areas and obtained yields of oilseed crops 2020

In the year 2020, after analyzing the data, the sunflower crop is in the first place in terms of harvested area, the soybean crop is in the second place and the rapeseed crop is in the last place, within the oil plant crops.

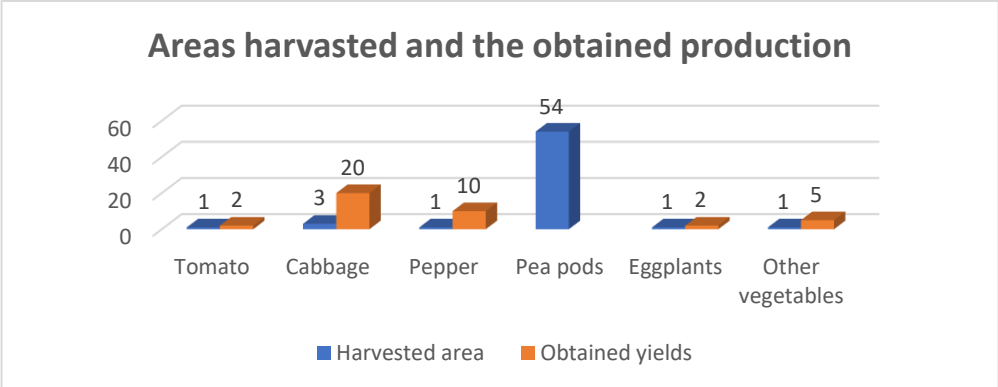

Fig. 3. Harvested areas and obtained yields of field vegetable crops 2020

Tomato, eggplant and pepper crops occupy equal areas in the year 2020 each crop is cultivated on 1 hectars.

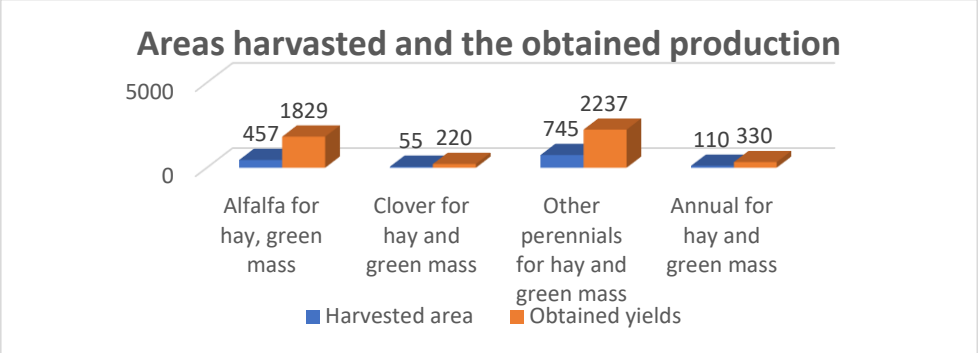

Fig. 4. Harvested areas and obtained yields of forage crops 2020

From the point of view of fodder plants in 2020, alfalfa for hay and green mass occupies the second place, the first place being occupied by other perennials for hay and green mass, and the last places are the annual plants for hay and green mass and clover crop for hay and green mass, in terms of production obtained.

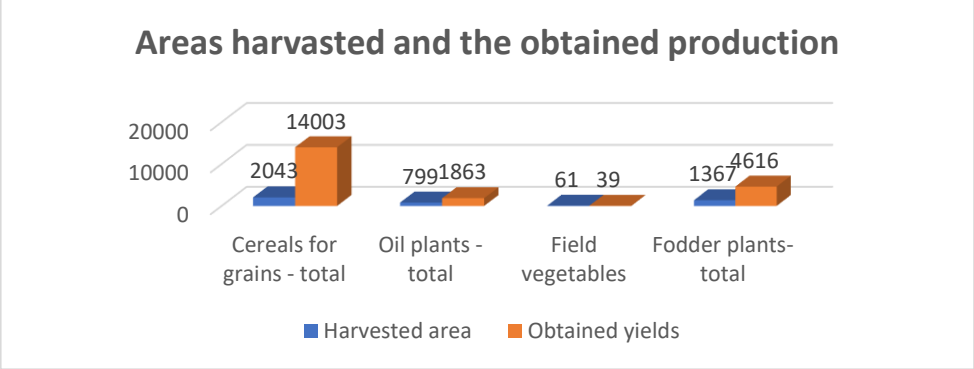

Fig. 5. Harvested areas and obtained yields of all important crops 2020

In 2020, among the most important cultivated crops, the last place is occupied by field vegetables in terms of harvested area and production.

Table. 2.

Fertilizers, amendments and pesticides applied in calendar year 2020

Name of the indicators	**Surface -hectares-**	**Quantity -tons-**
Chemical fertilizers		
Nitrous	2400	300
Phosphorous	2400	150
Phosphorous	2400	120

Natural fertilizers	70	2100
Insecticide	1000	100
Fungicides	1000	1000
Herbicides - total	1736.54	3400
Wheat	883.79	1000
Maize	852.75	2400

Table3.

Field crops of the year 2021

Name of the crops	**Harvested area -hectares-**	**Obtained production -Tons-**
Cereals for grains - total	2157	9720
Autumn wheat	1022	5110
Durum winter wheat	2	1
Autumn triticale	80	400
Barley	14	64
Spring oats	6	13
Corn kernels	1028	4112
Other cereals	5	20
Oil plants - total	821	1279
Sunflower	428	1156
Rape	49	123
Soy beans	344	
Field vegetables	5	27
Tomato	1	2
Cabbage	2	10
Pepper	1	10
Other vegetables	1	5
Total fodder plants	1367	3131
Alfalfa for hay, green table	653	1632
Clover for hay and green table	181	454
Other perennials for hay and green table	397	774
Annual for hay and green table	136	271
Natural pastures in use	2106	3159
Natural hay in use	174	348

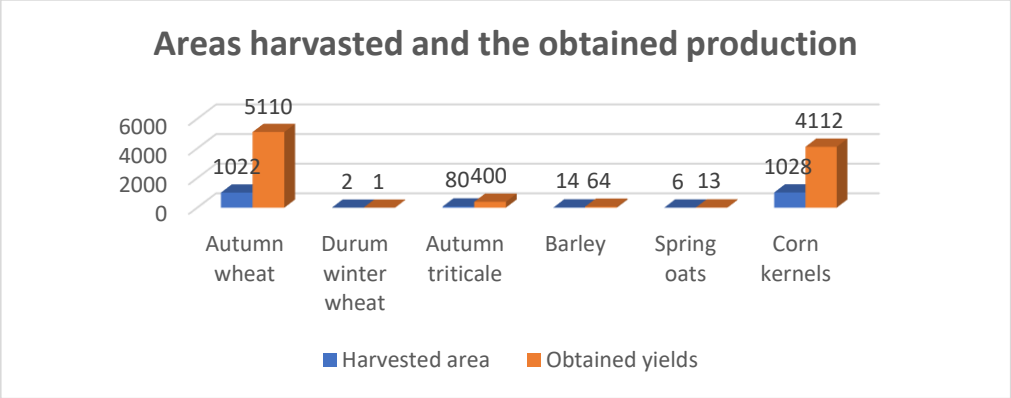

Fig. 6. Harvested areas and yields obtained in 2021 cereal crops

In 2021, winter wheat represents the crop with the highest production achieved, 5110 tons within cereal crops.

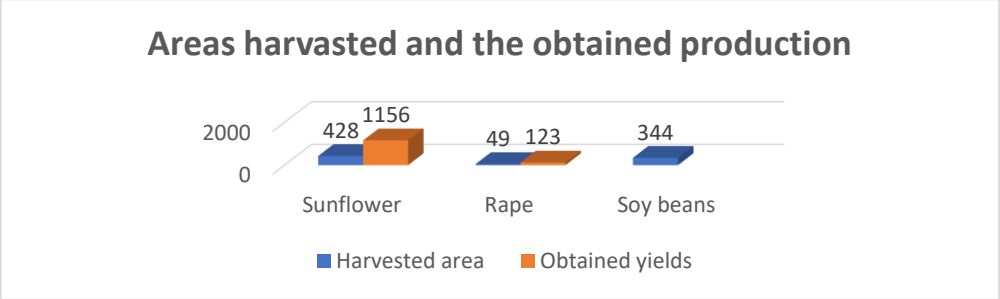

Fig. 7. Harvested areas and obtained yields of oilseed crops 2021

We note that the highest production of oil crops is the sunflower crop with 1156 tons.

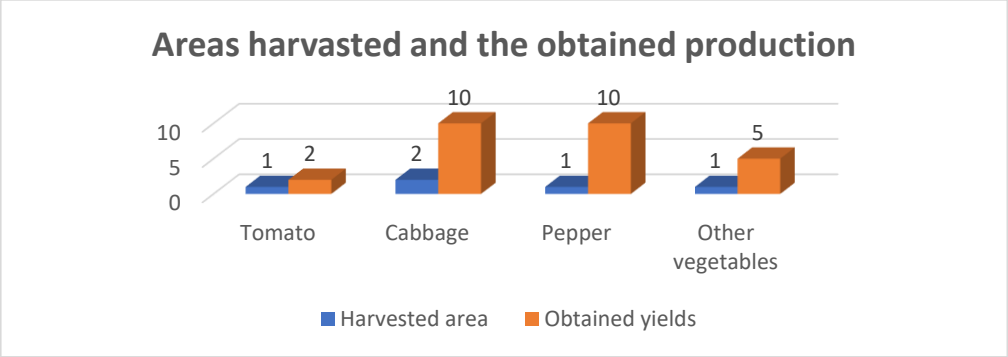

Fig. 8. Harvested areas and obtained yields of field vegetable crops 2021

In 2021, the crops with the highest productions are pepper and cabbage crops, both with 10 tons each, followed by other vegetables with 5 tons and the tomato crop with 2 tons.

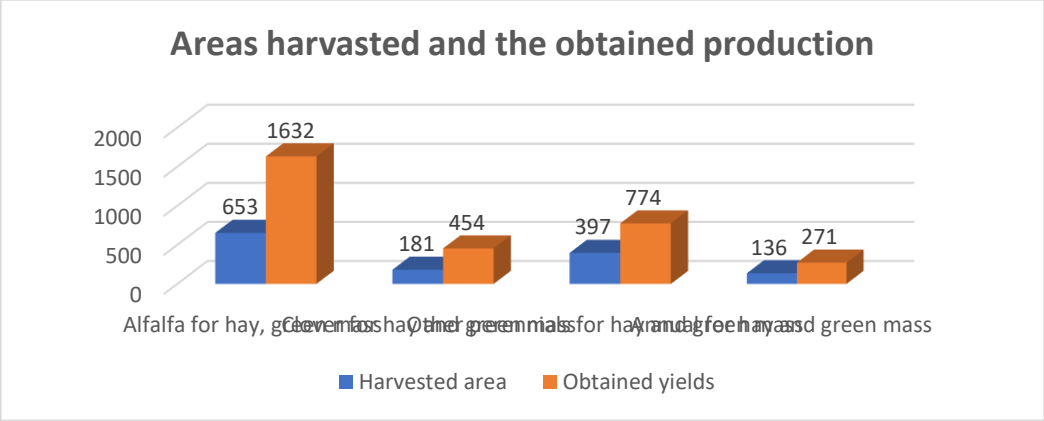

Fig. 9. Harvested areas and obtained yields of forage crops 2021

The crop with the smallest harvested area among the crops of fodder plants is the crop of annuals for hay and green mass.

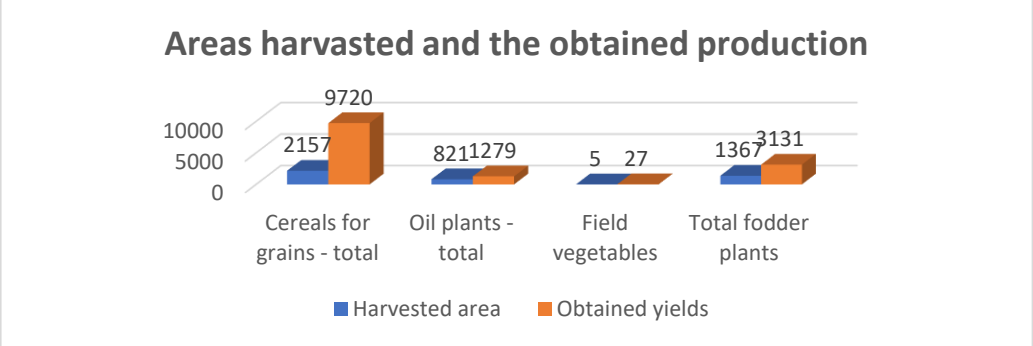

Fig. 10. Harvested areas and obtained yields of all important crops 2021

In the year 2021, among the most important cultivated crops, the first place is occupied by the crop of cereals for grains in terms of the harvested area and the production obtained.

Table 4.

The number of trees in 2021

Tree species	**Fruited -pc-**
Fruit trees - total	6292
Apples	887
Bristle	376
Peaches	220
Apricots and blackberries	307
Cherries and sour cherries	354
Plum	3984
Nuts	87

Table 5.

The agricultural area affected in 2021

Natural risk factors	Calamited agricultural area	
	Total agricultural	Arable
Drought	145.51	145.51
Total	145.51	145.51

Table 6.

Sacrifice		TOTAL	Individuals
			Family farms (GP)
Cattle Total		308	308
Cattle 2 years and over	Cows	190	190
	in lactation		190
	Heifers	15	15
	Males for reproduction	2	2
Young cattle under 1 year	Males and females for slaughter	58	58
	Females for breeding	43	43
Total pigs		655	655
	Breeding sows	193	193
Pigs fattened over 50 kg	Between 50-80 kg	83	83
	Between 80-100 kg	59	59
	Over 100 kg	10	10
Pigs 20-50 kg	MALES	160	160
	FEMALES	150	150
Ovin-totally		13585	13585
	Sheep	7006	7006
	Breeding rams	236	236
Goats - totally		7	7
	Goats	7	7
Birds - total		3491	3491
	Egg-laying birds	3491	3491
	Chickens	3491	3491
	Goose	59	59
	Ducks	124	124
Horses Total		21	21
	Workhorses	21	21
Bee families- families		310	310

Table 7.

Name of the crops	Harvested area -hectares-	Obtained production -Tons-
Cereals for grains - total	2460	6372
Autumn wheat	1232	4928
Autumn triticale	153	612
Barley	11	44
Spring barley	5	20
Spring oats	3	4
Corn kernels	674	764

Oil plants - total	607	1212
Sunflower	501	1000
Rape	61	122
Soy beans	45	90
Field vegetables	2	12
Cabbage - total	1	10
Sweet corn	1	2
Total fodder plants	1052	1371
Fan lucerne, green table	440	880
Clover for hay and green table	294	294
Other perennials for hay and green table	197	197
Annual for fan and green table	121	
Natural pastures in use	2106	
Natural hay in use	174	

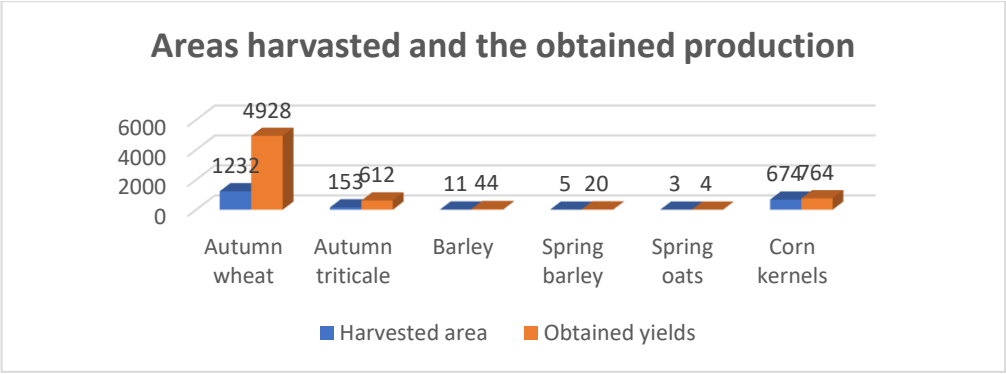

Fig. 11. Harvested areas and yields obtained in 2022 cereal crops

In the year 2022, winter wheat represents the crop with the highest production obtained, 5110 tons within the cereal crops and the spring oat crop is located at the opposite pole with 4 tons.

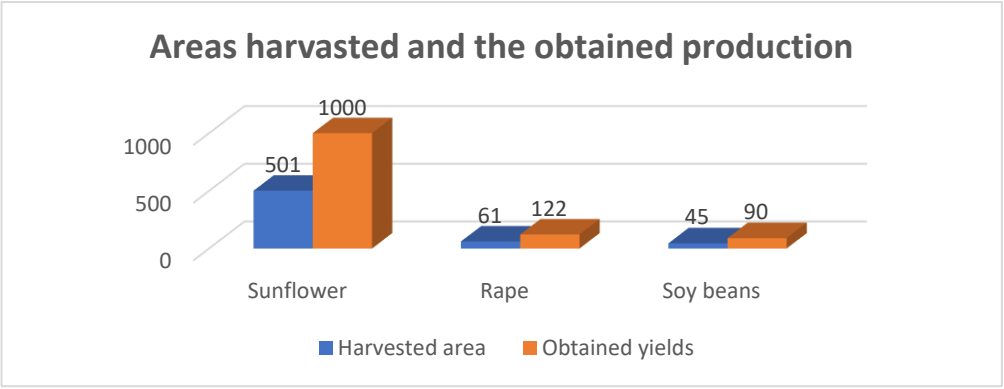

Fig. 12. Harvested areas and obtained yields of oilseed crops 2022

We note the fact that within the oilseed crops, the soybean crop had a production of 90 tons, being harvested from an area of 45 hectares.

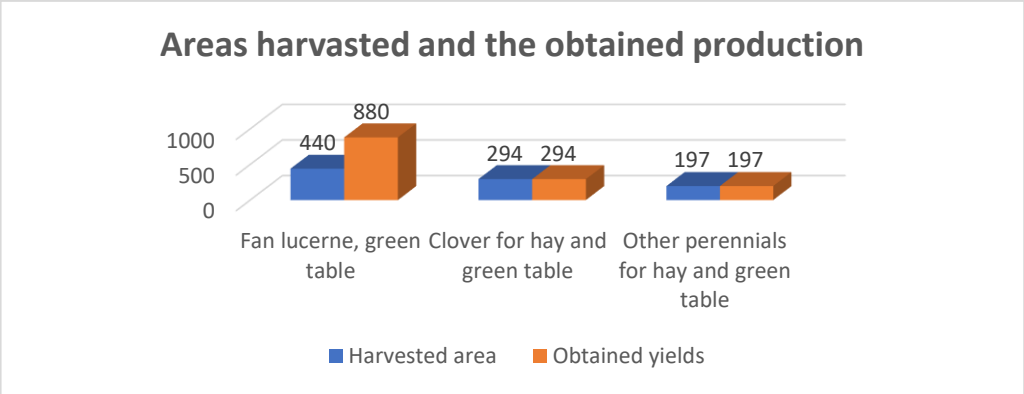

Fig. 16. Harvested areas and obtained yields of forage crops 2022

In the year 2022, alfalfa for hay, green mass is the crop with the highest production obtained 880 tons, from the cultivated fodder slopes.

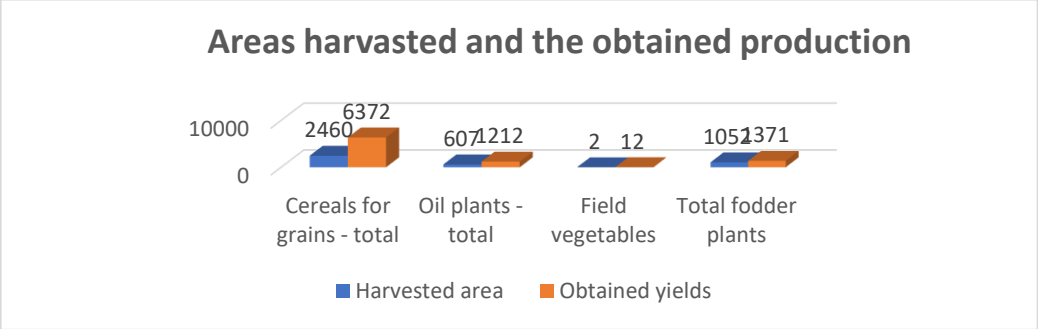

Fig. 15. Harvested areas and obtained yields of all important crops 2022

From the point of view of the obtained production, grain crops for grains are in first place, followed by oilseed crops in second place, and fodder plants are in third place.

Table 8.

Tree species	**Fruited -pc-**
Fruit trees - total	6595
Apples	887
Bristle	376
Peaches	220
Apricots and blackberries	307
Cherries and sour cherries	354
Plum	4364

Nuts	87

Table 9.

Natural risk factors	Calamited agricultural area	
	Total agricultural	Arable
Drought	1806	1806
Total	1806	1806

CONCLUSIONS

1. The year 2021 is the only year in which we are presented with eloquent data in what concerns the livestock of the locality.
2. In all the 3 years in which oilseed crops are found in the crop scheme, the first place in terms of the production obtained is the sunflower crop
3. The fruit crops present in two of the three years analyzed complete the assortment of crops of the locality.
4. In the years 2021 and 2022, the highest amounts of natural fertilizers were applied.
5. Of the three years tracked, only in 2021 and 2022 do we find eloquent data regarding the affected areas.
6. Following the analyzes carried out, we can conclude that 2021 was a year with the highest productions in terms of the autumn wheat crop.

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