PRESENTATION OF THE AGRICULTURAL SYSTEM IN SEPREUS, ARAD COUNTY

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Abstract:*The agricultural system is a set of sectors, technologies, machines and technological aggregates where the soil is used as the main production resource for agricultural crops, fruit trees, viticulture, vegetables, flowers and livestock. The structure of the sectors may vary from one farm to another. In Europe, in the agricultural sector, depending on the technologies used, their level of intensification, specialization, biomass quantity and quality, environmental relations, etc., different systems of agriculture are practiced: sustainable, conventional, biological, organic, precision, extensive.*

Key words: *agriculture, system, Arad county*

INTRODUCTION

The Șepreuș Commune is situated in the northern part of Arad County, in a plain area, bordering in the north on the territory of the Apateu and Mișca communes, in the west on the territory of the Sintea Mare commune, in the south on the territory of the Șicula commune ad in the east on the territory of the Cermei commune. [1,5]

The researched territory is characterised by a temperate moderate-continental climate with shorter and milder winters with a certain circulation of air masses of various types, determined either by action centres of dynamic origin (azoic and subtropical anticyclone), or by seasonal thermal action centres (Siberian anticyclone, Asian or Mediterranean depression).[2,4]

MATERIALS AND METHODS

For the elaboration of this paper, data resulting from own observations were used, data from the Romanian Statistical Directory, from M.A.D.R. and I.N.S.S.E and from the Șepreuș locality mayor hall. The agricultural production manifested very diverse specific dynamics, from a sector point of view (vegetal and animal), as well as from a regional point of view, depending on the diversity of agri-climatic usability conditions, as well as the production factor usage degree.[3]

RESULTS AND DISCUTIONS

Table 1

Statistic situation of the land pertaining to the Sepreuș locality [2]

Land category	Surface(ha)
Tillable land	1062
Pastures	149
Hay land	0
Vineyards	0
Orchards	0

Forests and other silvic land	45
Water land and reed water land	167
Access ways and railways	101
Land with constructions and yards	11
Degraded and non-productive land	142
Total agricultural land	5268
Total non-agricultural land	536
Total land fund	5804

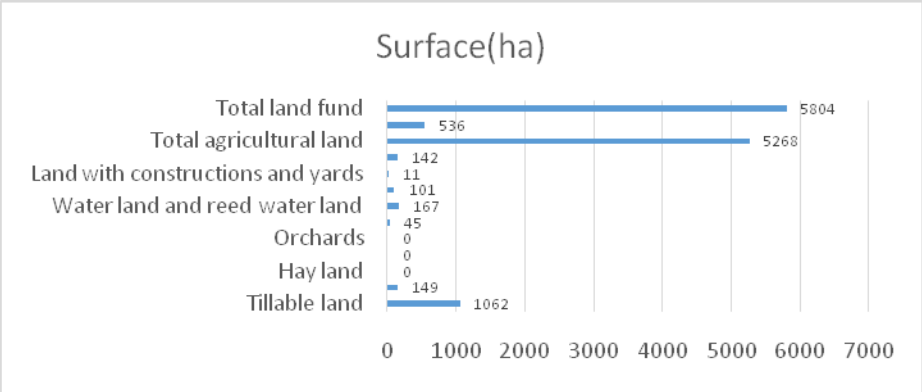

Fig. 1 Statistic situation of the land pertaining to the Sepreuş locality

As one may observe, the above graph presents the statistical situation of the land pertaining to the Sepreus locality, agricultural land covering the largest surface with a total of 5268 ha. The graph also shows that the tillable land covers a surface of 1062 de ha, pastures 149 ha, forests and other silvic land 45 de ha, land with sulphur containing water 167 de ha, access roads and railways 101 ha, land containing constructions and yards 142 ha, and there are no hay land, vineyards and orchards, appearing in the graph as 0 ha.

Table 2

Surface cultivated with grain cereals

Crop	Sur. 2013 (ha)	Sur. 2014 (ha)	Sur. 2015 (ha)
Wheat	300	400	391
Triticale	450	360	198
Barley	30	15	12
Autumn two-row barley	0	332	332
Oat	250	70	65
Corn	500	285	310

In table 2, one may observe that, during 2014, corn was the cereal crop covering the largest land surface with 500 de ha, followed, in 2015 respectively 2016, by wheat, and oat was cultivated on the smallest surface during all three years.

Table 3

Evolution of cereal cultivated surfaces 2014-2016

	Wheat	Triticale	Barley	Two-row barley	Oat	Corn
2013	300	450	30	0	250	500
2014	400	360	15	332	70	285
2015	391	198	12	332	65	310

Table 3 presents the cereal evolution regarding the surfaces cultivated during 2014, 2015 and 2016, and shows us the most cultivated cereals in the Sepreuș locality area.

Table 4

Oleaginous and technical plants

Crop	Sur. (ha) 2013	Sur. (ha) 2014	Sur. (ha) 2015
Sunflowers	300	147	55
Mustard	0	138	180
Poppy	0	2	2
Potatoes	41	32	30
Sorghum for brooms	4	6	4

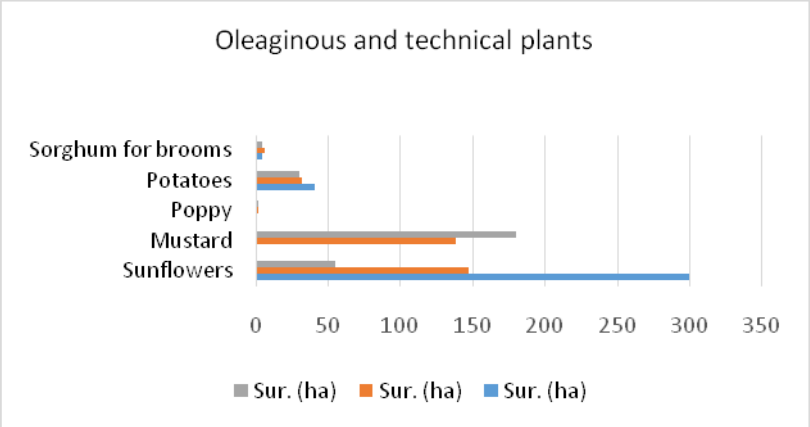

Fig 2. Oleaginous and technical plants

The figure above shows that the most cultivate plant is sunflower, covering the largest surfaces during the years under study.

Table 5

Vegetables in the field crops

Crop	Surface (ha) 2013	Surface (ha) 2014	Surface (ha) 2015
Tomatoes	18	3	5
Onion	5	2.5	4
Garlic	3	1.8	2
Cabbage	14	15	18
Pepper	4	6	6
Cucumber	3	3	4

Root vegetables	4	2	2
Peas	8	8	8
Beans	3	2	2
Aubergines	4	3	7
Melon	3	7	10

Regarding vegetable cultivation in the locality area, as one may observe in the above table, several vegetables are cultivated; however, the largest land surface is covered by the autumn vegetables tomatoes and cabbage.

Table 6

Harvested surface and production obtained in 2016

Crop	Cultivated surface	Obtained productions
Autumn wheat	440	1760
Triticale	405	405
Barley	14	54
Spring two-row barley	7	26
Oat	68	238
Grain corn	312	1341
Sunflower	152	304
Raps	15	15
Potatoes	29	183
Vegetables in the field	54	320

Table 7 explains the surface covered by and production of cereals during 2016, where one may observe that autumn wheat covers the largest land portion of 440 de ha with a 1760 tone production, followed by triticale with a 405 ha, and 405 tone production and grain corn with a 312 ha surface, and134 t production.

Table 7

Chemical fertilisers (active substance) by substance and crop type, regarding the production of the agricultural year 2016

Indices		Individual agricultural exploitations					
		Nitrogenous		Phosphorous		Potassic	
		Surface (ha)	Quantity (t)	Surface (ha)	Quantity (t)	Surface (ha)	Quantity (t)
Applied fertilisers Total		687	140,3	687	56	687	8,9
	Wheat and barley	250	38	250	13.5	250	2.5
	Grain corn	180	36	180	14.5	180	1
	Sunflower	97	33.5	97	10.5	97	
	Potatoes	18	3.6	18	1.8	18	0.5
	Vegetables	30	4.2	30	4.2	30	1.6
	Fodder	500	4.6				
	Natural pastures	112	25	112	11.5	112	3.3

Table 8

Animal livestock in 2013-2015

Species	2013 (head count/fam)	2014 (head count/fam)	2015 (head count/fam)
Bovine	402	404	302
Porcine	1312	1202	1102
Ovine	8050	7760	15770
Caprine	69	74	70
Poultry	6400	8030	6000
Equine	101	105	60
Bee families	2000	1400	1150

The animal livestock of the Sepreuș locality, is presented in table 9. One may observe that ovines predominate with a livestock of 8050 heads in 2013, followed by poultry with 8030 heads in 2014 and, in 2015, again ovines with 15770 heads. It also represents an important income source for the area inhabitants.

Table 9

Number of individual trees

Tree species	Total in agriculture		Private sector			
			Private total		Individual agricultural exploitations	
	With fruit –piece-	Young – piece	With fruit – piece-	Young – piece	With fruit – piece-	Young –piece
Fruit trees-total	21180	3920	21180	3290	21180	3290
Apple	2500	100	2500	100	2500	100
Pear	800	30	800	30	800	30
Cherry and sour cherry	1000	100	1000	100	1000	100
Plum	16000	3000	16000	3000	16000	3000
Walnut	500	50	500	50	500	50
Hazelnut	80	5	80	5	80	5

In the locality, fruit trees are also cultivated, presented in table 10. The cultivated fruit tree species are as follows: apple, pear, cherry, sour cherry, plum, walnut and hazelnut with a total of 21180 pieces. The most cultivated trees are plumtrees with a total of 16 000 and apple trees with a total of 2 500 pieces.

Table 10

Situation of the park age regarding the main equipment on 31.12.2015

Equipment	Of which			
	Not amortized		Amortized	
	Existent	In function	Existent	In function
Tractors	96	92	2	2
Strawy croppers	10	10		
Ploughs	80	73	1	1
Disc harrow	52	50		
Strawy seeders	7	6		
Hoeing seeders	14	12		
Fodder croppers	3	3		
Windrowers	0	0		
Baling presses	10	10		
Hauled attachments	44	44		

CONCLUSIONS

The agriculture practiced in the Șepreuș locality is an extensive one, with intensification tendencies, but this mission is almost impossible to fulfil without foreign capital, and major investments in technique, specialists, land agglomeration and supporting subventions from the Romanian states.

The locality benefits a lot from the soil resources, leading to highly qualitative and quantitative yields, a large part of the active population working in agriculture.

Productions obtained from vegetable cultivation insure a decent living for the people in the area, but lead to higher cost, mirrored by working hours.

Agricultural organisations in the area offer a multitude of working places in the area.

Governmental aid programs for agriculture also influence the economy of the Șepreuș locality area in a positive ways.

The agricultural system in the Șepreuș locality area is an agricultural one, with agro-zootechnical influences.

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