

OILCROPS EVOLUTION IN ROMANIA AND DOBRUDJA - TULCEA COUNTY

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Abstract

This paper aims to present the evolution of grown areas and productions of oilseed crops in the period 2007 - 2011 in Romania, and in Dobrudja region - Tulcea County. It is based on statistical data extracted from the Romanian Statistical Yearbook and data supplied by the Department for Agriculture and Rural Development from Tulcea. The data were processed into following indices: oilseed crops grown in Romania and in Dobrudja - Tulcea County; total grown area and for each species; total productions and average yields in evolution during the analyzed time interval. In the period under review grown areas and productions fell in the first two years and then gradually increased from year to year. So, in 2011 in Romania sunflower crop area increased by 17.9% and production of 2.4 times, rapeseed area increased by 4.6% and production by 106% and soybean area decreased by 48% and production had an increase of 8.1%. In Dobrogea - Tulcea County area cultivated with sunflower increased by 17.7% and production 3.3 times, rapeseed area increased by 20.4% and production by 52% and the area planted with soybeans decreased by 37% while production increased by 15%. It is to emphasize that in Romanian, in Dobrudja region and in Tulcea County there are very favorable conditions for oilseed crops growing.

Key words: evolution, oil crops, growing area, seeds yields, Romania and Tulcea County

In oilseed crops domain in our country there are remarkable achievements, especially in sunflower crop. Romania is one of the largest sunflower growers in the world and is the first country that introduced and cultivated sunflower hybrids. There are important achievements related to sunflower growing technology, but in oil flax and castor-oil plant breeding and growing too.

Vegetable fats have numerous uses in human nutrition and food industry. They are a concentrated form of energy, being the main energy provider for the organism. By burning a gram of fat releases 9.3 kcal, and twice from carbohydrates or proteins. Vegetable edible oils have good taste and high digestibility (around 95%) surpassing animal fats, and being only by butter digestibility exceeded (98%). A disadvantage of vegetable oils is that, in the processing industry, they lose a lot of fat soluble vitamins (A, D, E, K).

Vegetable oils are widely used in canning and baking industry. By hydrogenation it is possible to obtain margarine, used in direct food or confectionery.

Besides fat content, oilseeds contain large amounts of proteins (16/45%). These two

components represent about 60-80% of the seed weight. Lately, there are concerns for extending the use of oilseeds proteins.

Significant amounts of vegetable oils are using in soap industry, varnishes, paints, linoleum, and others as lubricants, in metallurgy, tannery.

Vegetable oils which are liquid at temperatures below 0°C (soybean, sunflower, rapeseed oils) can be used as fuel for diesel engines, but with some drawbacks (deposits, wear) and after some relatively large engines adjustments and fuel supply.

After oil extraction, the remaining cakes and meals are concentrated feed rich in protein (30-35%), carbohydrates, fats and vitamins.

Cakes from certain oilseeds, from which oil was extracted by cold pressing, are used in the preparation of halva and other confectionery.

Oilseeds crops are important from agrotechnical point of view. Those harvested early (oil flax, early crucifers) are very favorable previous crops for winter cereals.

Oilseeds species as hoes crops, and well cultivated, they contribute to weeds control in crop rotations.

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MATERIALS AND METHODS

The work was carried out during year 2012, in which they used information from Romanian specialized literature. Were also consulted reports results obtained from competent national institutions.

The main indicators used for this analysis were: growing areas, seeds yields and total productions. Data used for this analysis are official data drawn from statistical yearbooks available from the Romanian National Institute of Statistics and also statistics released by the Department of Agriculture and Rural Development of Tulcea County.

RESULTS AND DISCUSSION

Table 1 presents the evolution of oilcrops growing areas. In 2008 compared to 2007 the areas decreased by 2.6% for sunflower and by 62.5% for soybean, and rapeseed area had a slight increase. In 2009 the areas with sunflower decreased by 5.9% compared to previous year, rapeseed has increased by 15% and soybean area reduced by 22%.

If we calculate the difference in 2010 compared to 2009 we can see that for all oil crops the areas increased as follows: by 3.2% for sunflower, by 28% for rapeseed and by 31% for soybean.

The differences for oil crops growing areas in 2011 compared to 2010 were as follows: for sunflower the area increased by 24.5%, for rapeseed the area decreased by 29%, while the soybean crop area increased by 8.3 %.

Table 1.

Evolution of oilcrops growing areas in Romania

Crop	Area (thou ha)				
	2007	2008	2009	2010	2011
Sunflower	835.9	813.9	766.1	790.8	985.3
Rapeseed	364.9	365.0	419.9	537.3	381.6
Soybean	133.1	49.9	48.8	63.9	69.2
Oil flax	0.5	-	-	-	-

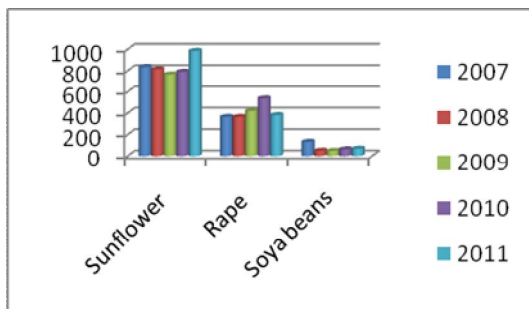


Figure 1 Graphical representation of oilcrops growing areas in Romania

Table 2 shows the evolution of oilcrops productions in Romania. Sunflower crop production in 2008 was higher than previous year of 114%, rapeseed production had a very

significant increase of 86.1%, and soybean crop had a significant decrease of 33.43%.

In 2009 all oil crops productions decreased as follows: sunflower production decreased by 6.1%, rapeseed production by 16.8% and soybean production decline was of 7%.

If productions fell in 2009, the difference between 2010 to 2009 productions show that all crops had increases as follows: sunflower had a significant increase of 15%, and rapeseed and soybean had highly significant increases, respectively 68.5% and 77.8%.

Year 2011 was favorably for sunflower crop and the production increased significantly by 47.6%, in comparison to rapeseed production decreasing by 21% and to soybean by 1.8%.

Table 2

Evolution of oilcrops productions in Romania

Crop	Total production (thou tons)				
	2007	2008	2009	2010	2011
Sunflower	546.9	1170.0	1098.0	1262.9	1864.1
Rapeseed	361.5	673.0	559.6	943.0	744.8
Soyabean	136.1	90.6	84.3	149.9	147.2
Oil flax	0.4	-	-	-	-

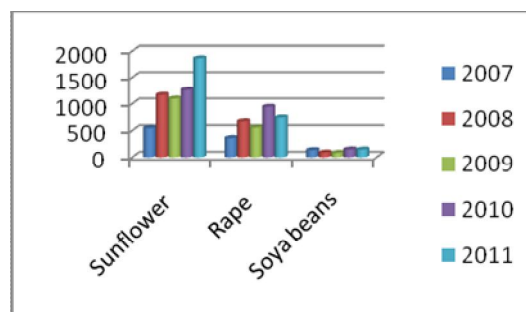


Figure 2 Graphical representation of oilseeds crops productions in Romania

In table 3 presenting the oilcrops areas evolution in Dobrudja – Tulcea County, we can see that the difference of 2008 to 2007 shows a decline of 6.6% of the area grown with sunflower, a very significant growth of 51.2% for rapeseed, and a very significant decrease of 69% for soybean.

Regarding 2009 oilcrops growing area the state was as follows: sunflower decreased by 13.8%, rape decreased by 12.6%, soybean had a slight increase of 3.4%, and mustard growing area increased 10 times.

In 2010, for oilcrops growing areas very significant increases were recorded by 70.4% for rapeseed, by 82% for soybean and by 86.6% for oil flax, and for sunflower and mustard, the areas decreased of 7.1 %.

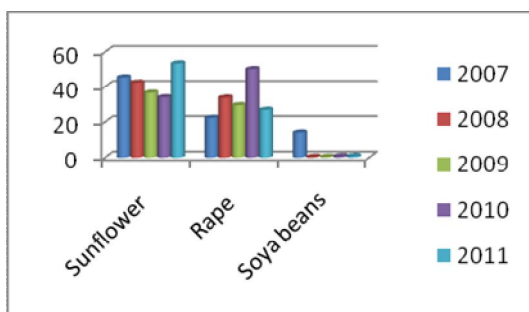
A comparison of the year 2011 to 2010 shows a very significant increase of the area grown with sunflower of 57.3% and an increase of 6.3%

for soybean, instead for rapeseed, oil flax and mustard, the areas decreased very significantly, namely: by 46.5% for rapeseed, by 68.9% for oil flax and by 61% for mustard.

Table 3

**Evolution of oilcrops growing areas
in Dobrudja-Tulcea County**

Crops	Area (thou ha)				
	2007	2008	2009	2010	2011
Sunflower	45.42	42.43	36.57	33.96	53.45
Rapeseed	22.32	33.75	29.48	50.24	26.87
Soybean	14.09	0.44	0.45	0.82	0.88
Oil flax	0	0	0.39	0.74	0.23
Mustard	0	0.065	0.73	0.68	0.27
Safflower	0	0.008	0	0	0



**Figure 3 Graphical representation
of oil growing areas in Dobrudja-Tulcea County**

Table 4 presents the production of oilcrops in 2007-2011. Year 2008 compared to 2007 shows a very significant increase in crop yields for sunflower and rapeseed, 1.7 times respectively 1.9 times. Regarding soybean crop even cultivated area had a decrease of 69%, production was higher by 18.4%.

Output gap in 2009 compared to 2008 shows that production had a very significant increase of 1.8 times for mustard crop and for other oil crops productions fell by 33.7% for sunflower, by 32.6% for rapeseed, and by 7.1% for soybean.

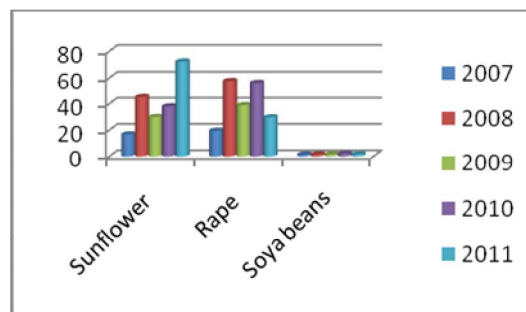
Table 4

**Evolution of oilcrops productions
in Dobrudja-Tulcea County**

Crops	Total production (thou tons)				
	2007	2008	2009	2010	2011
Sunflower	16.62	44.95	29.81	37.86	72.16
Rapeseed	19.36	57.53	38.78	56.13	29.55
Soybean	1.37	1.62	1.51	2.18	1.58
Oil flax	0	0	0.39	0.67	0.207
Mustard	0	0.15	0.42	0.56	0.195
Safflower	0	0.013	0	0	0

As regards 2010 as compared to 2009, production increased in all oilcrops, as follows: there was a very significant increase for oil flax by 70%, and a distinct significant increase for all other crops, respectively: 27% for sunflower, 44.8% for rapeseed, 44.5% for soybean and 32.6% for mustard.

Productions from 2011 to 2010 show a very significant increase of 91% for sunflower, and significant decreases of 47.3% for rapeseed, of 69.2% for oil flax, and of 65.2% for mustard, instead soybean production dropped by 27.7%.



**Figure 4 Graphical representation
of oilcrops productions in Dobrudja-Tulcea County**

CONCLUSIONS

In recent year's sunflower and rapeseed growing areas increased due to lower soybean acreage, because of the European Union restrictions to cultivate genetically modified soybean.

2008-2011 periods registered increased growing areas for oil flax and mustard in Dobrudja – Tulcea County, and very significant increases of productions.

Year 2011 was very favorable for sunflower and rapeseed crops, and as a consequence productions increased of almost 2 times more, in comparison to 2010.

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