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OIL CROPS AND VEGETABLE OILS – BETWEEN FOREIGN INVESTORS AND ROMANIAN PRODUCERS

ABSTRACT

The present paper investigates the oilseed and vegetable oil chain as well as the competitiveness of players on the market; at the end, on the basis of constraints and limitations, it comes with proposals for activity improvement in this sector.

Keywords: production, production cost, price, subsidy, competitiveness.

JEL Classification: Q13.

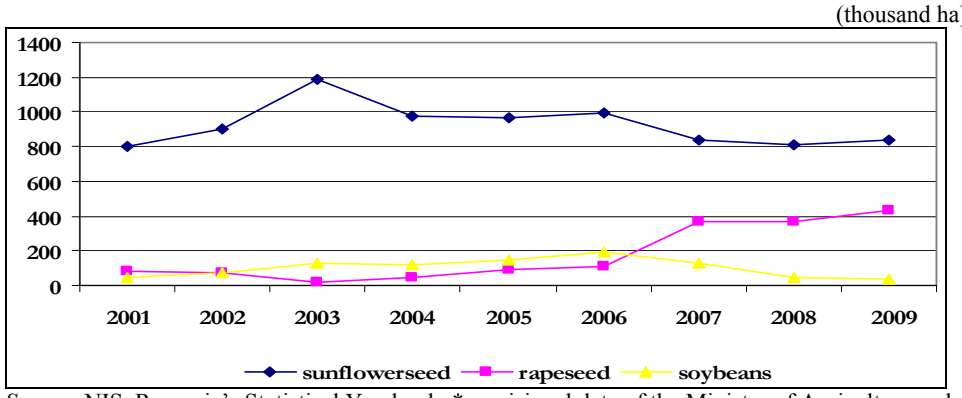
1. INTRODUCTION

Romania has over 150-year tradition in vegetable oils production. It is one of the most important producers of oil crops in Europe. The main oil crops that are cultivated are the following: sunflower (66%), rapeseed (30%), soybean (3%) and others 1%.

The vegetable oil industry had an increasing trend, mainly due to a steady increase of sunflower production and to a constant demand of raw (brut) oil and oilcakes on the foreign markets.

2. ANALYSIS OF THE PRIMARY PRODUCTION SECTOR

The area under oilseeds experienced a general increasing trend in the period 2000-2009 (Figure 1). One of the main causes was the faster increase of areas cultivated with rapeseed compared to the diminution of areas cultivated with sunflower and soybean (as a result of banning the cultivation of genetically modified soybean).



Source: NIS, Romania's Statistical Yearbook, *provisional data of the Ministry of Agriculture and Rural Development.

Figure 1 Total area under oil crops in the period 2000–2009.

If we investigate the areas cultivated with oil crops by types of holdings, we can notice that there is a relatively balanced situation between the individual holdings and the agricultural companies.

On the individual holdings, sunflower is cultivated on the largest areas (55-61%), in the conditions where manual weeding is applied for weed control.

In the case of soybean, this crop is mainly cultivated on the agricultural companies, which have the necessary machinery fleet and experience in cultivating this crop (Table 1).

Table 1

Share of cultivated areas by types of agricultural holdings (%) in the period 2006–2007

	2006		2007	
	Agricultural companies*	Individual holdings	Agricultural companies*	Individual holdings
Total oil crops	53	45	49	47
Sunflower	44	55	37	61
Soybean	79	18	77	20

Source: Ministry of Agriculture and Rural Development, the agricultural companies are represented by the agricultural units established on the basis of Law 31 and Law 36.

The area cultivated with sunflower seeds has experienced a steady increase in Romania since 1989. Crop rotation limited the increase of areas under sunflower to 1 million hectares. Sunflower is the only crop in which self-consumption is under 3%, and in this case the seeds are mainly used for producing cold pressed oil.

Sunflower remains a top product in the Romanian exports, while the exported surplus continues to decrease as the needs for raw materials for processing on the domestic market increase.

Farmers consider that the sunflower is the crop with the simpler cultivation technology, as it does not imply high input costs (small seed quantities for sowing, use only of herbicides); after the plant reached the five-leaves stage, the next work performed by farmers is harvesting.

Soybean continues to be a crop that is mostly sold on the market. The agricultural companies that had access to irrigations and modern technology began to increase the areas under this crop.

Although the soybean yields, under non-irrigated system, in the last three years, averaged 2 tons / hectare (in the case when the crop is established on the chernozems with surface water), in the past average yields of even 0.6 tons / hectare were obtained under drought conditions (before 1989, when the cultivated area was extended outside the zone suitable for this crop). Thus, in the years with drought, the soybean crop can be compromised in the absence of irrigation.

Stimulated by the increased demand for biofuel, farmers began to cultivate larger areas with rapeseed, since the autumn of 2006.

In general, rapeseed is considered by farmers a crop that does not need irrigations. Yet, in the autumns with drought, the crop may be compromised if no irrigations are applied. However, this rarely happens, as generally when water is no longer available in the irrigation canals, the farmers give up establishing this crop.

In the future, as there is an increased demand for the rapeseed seeds, we expect that the rapeseed will become an irrigated crop, and the production gains and incomes will be significant.

Another risk factor in rapeseed cultivation is represented by the excessive frost in winter, which can partially or totally compromise the harvest, as well as by the extremely mild winters, which make it possible for the flower buds to appear even in the month of December; in both cases, the yields are negatively affected.

Another significant impediment is represented by the losses due to pod shattering at harvesting. In general, farmers cultivate rapeseed only if they have performant combine harvesters and have well-designed plans for cultivating their areas with winter crops so as to perform the harvesting of rapeseed and small grains in due time. The farmers who do not know to plan the structure of crops on the basis of their own harvesting capacity can have serious losses due to rapeseed pod shattering. The National Agency for Agricultural Consultancy (ANCA) should provide advice to farmers in planning their crops for the following market year.

Production costs – case study

- The total costs for *sunflower* for an average yield of 2010 kg/ha obtained on an area of 747 ha were 1599 RON (Box 1).

Box 1 Production costs and profitability for the sunflower crop – case study 2007			
DESCRIPTION	**UM**		**Subsidy**
Area	*Ha*	*747*	
Average yield	*kg/ha*	*2010*	
TOTAL COSTS, out of which %	**RON/ha**	**1599**	**320**
MECHANICAL WORKS	**%**	**56**	
Ploughing	%	14	
Disking and harrowing	%	4	
Preparation of germination bed	%	3	
Sowing	%	4	
Herbicide application	%	2	
Weeding	%	5	
Harvesting	%	19	
INPUTS	**%**	**18**	
Seeds	%	8	
Fertilizers	%	0	
Crop protection	%	10	
MANUAL LABOUR	**%**	**0**	
Overheads	**%**	**22**	
Salaries	%	19	
Amortization	%	2	
Insurance	%	1	
Production cost	**RON/ton**	**796**	
Selling price	*RON/ton*	**1000**	
Profit with subsidy	**RON/ton**	**204**	
Profit without subsidy	**RON/ton**	**45**	

Source: Field data.

The sunflower subsidy accounted for 20% of total costs, out of which 95% is the direct payment per hectare and 5% the Diesel oil subsidy.

- The total costs for *rapeseed* for an average yield of 2686 kg/ha obtained on 600 ha reached 1505 RON (Box 2).

The rapeseed subsidy was 47% of total costs out of which 44% is the direct payment per hectare and 22% seeds, 26% fertilizers, 9% crop protection products.

Box 2 Breakdown of rapeseed production costs – case study 2008			
DESCRIPTION	**UM**		**Subsidy**
Area	*ha*	*600*	
Average yield	*kg/ha*	*2686*	
TOTAL costs, out of which (%)	**RON/ha**	**1505**	**712**
MECHANICAL WORKS	**%**	**52**	
Ploughing	%	12	
Disking and harrowing	%	9	
Preparation of germination bed	%	3	
Sowing	%	4	

Box 2 (continued)

Herbicide application	%	2	
Fertilization	%	7	
Harvesting	%	17	
INPUTS	**%**	**39**	
Seeds	%	10	
Fertilizers	%	12	
Crop protection	%	16	
MANUAL LABOUR	**%**	**3**	
Overheads	**%**	**5**	
Salaries	%	2	
Amortization	%	2	
Insurance	%	1	
Production cost	**RON/ton**	**560**	
Selling price	**RON/ton**	**1200**	
Profit with subsidy	**RON/ton**	**640**	
Profit without subsidy	**RON/ton**	**375**	

3. ANALYSIS OF THE PROCESSING SECTOR

The Romanian oil industry is booming, being very competitive, with great investments from the large foreign companies in this field (Cargill, Bunge) absorbing almost 950 thousand tons of sunflower seeds and about 235 thousand tons soybeans. The peasant oil presses are processing about 70 thousand tons/year, with an extraction rate of 25% for sunflower, while the extraction rate under industrial system is 42% on the average.

Romania is on the third position in Europe with regard to the refined oil production. The market has developed very fast in recent years, the concentration level increased very much, so that the international processors (mainly from the United States) produce two-thirds of the domestic oil production. The Romanian oil production value is estimated at over 300 million USD (this value does not include the 20 thousand tons of oil obtained in the peasant oil presses that go to self-consumption.

The domestic demand, which remained constant, is largely satisfied from the domestic production. A recent trend, which is quite interesting, is represented by the acceptance of soybean oil in the human consumption, obviously in the poorer regions, sensitive to price variations. For the 2007/2008 season, vegetable oil imports were expected, at attractive prices for the Romanian consumers, such as the palm oil.

The industry continues to get consolidated by significant investments in replacing the equipment, mainly the bottling and labeling equipment, and quality control for getting in line with the EU standards. Two companies from the United States (Bunge and Cargill), with 50% market share on the Romanian market, are in

full expansion, Romania being the center of raw materials (together with Ukraine and Russia) and it will be soon the greater refined oil supplier from Europe. There are also local investors with significant market shares (Argus Constanța 20%, Agricover Buzău 9.5%) and other 10 similar companies, which are struggling to survive in an increasingly competitive environment.

Soybean processing industry is dominated by a Swiss investor. The oil production capacity is 400 thousand tons, still not fully used due to the low consumption per capita of only 10–11 kg/year (representing only half of the consumption average of the European Union), which is a limiting factor for production.

Owing to the very little diversified preferences, the Romanian consumers mainly prefer the sunflower oil. There are several Romanian brands that are recognized at national level and they are preferred depending on the consumers' incomes. Both the local producers and the importers are trying to diversify their supply and to strengthen their role on the market.

The soybean oil is mainly used in margarine production. The margarine market slightly decreased, as the trend of consumption expenses increased. The first three producers (Unilever, Orkla and Rozal Brinkers) have 90% of sales. The margarine market is estimated at 60 million USD, almost fully covered by the Romanian production. The competition is very high in obtaining best prices possible for raw oil for margarine production.

Biodiesel

Biofuels have over one century long history. The White Paper of the European Commission from November 1997 stipulated the general objective to double the non-conventional fuel consumption so that by 2010 this should represent 12% of the total fuel consumption. The biodiesel production is quite heterogeneous in Europe, as different raw materials and different production technologies are being used. Mainly rapeseed oil is used for biodiesel production, but some other raw materials are also used, namely recycled vegetable oils and even animal fat, but their market is very limited. It is absolutely necessary for the biodiesel to have a high quality so as to be acceptable for the automobile industry and for the public. As regards the processing industry, this is represented by 39 factories, and the total biodiesel production capacity is 1.8 million tons / year. The biodiesel impact upon the environment cannot be overlooked, in the present situation of the global warming. The research studies revealed that the gas emissions of the biodiesel are lower compared to conventional Diesel oil

Biodiesel represents 80% of the biofuels market in the European Union. This represents a significant change on the vegetable oil market, in terms of stocks, and price fluctuations appear as a result of these changes. Owing to biodiesel standards in the EU, the rapeseed is the most demanded raw material for biodiesel

production. An increasing trend is also noticed in sunflower and soybean oil utilization for biodiesel production.

In spite of all these, the human consumption of vegetable oils is expected to remain relatively stable. Depending on the availability and price, we can expect the replacement of different types of oils. The human consumption of palm oil is expected to rise, as a result of much more attractive prices and generally die to consumers' preference for trans fatty acids.

By its [position on the oilseed market, Romania is considered an important source of raw materials for the factories from Western Europe, mainly in the case of rapeseed.

Although Romania has a total processing capacity for biofuels of 280 thousand tons/year, in the year 2007 only 30,000 tons of biodiesel were produced, and 20,000 tons of biodiesel were imported.

4. STORAGE SECTOR ANALYSIS

At present, the main player on the oilseeds storage market is the company Cargill, which has about 10 % of total storage capacity and about 50 % of the effectively used storage capacity. Here the best storage conditions are provided, yet the storage prices are quite high; these prices are not only the result of the good services provided, but rather of the regional monopoly the company has. Thus, only the loading/unloading from silo costs 10 euro/ton of product. Cargill is a company that can pay the stored product the next day after its reception, but the prices are slightly higher than the average prices practiced in the zone.

Almost all farmers sell their oilseeds production at the harvest time, as they do not have adequate storage facilities; even when they have storage premises, they cannot control very well the self-heating phenomenon that is very common in the case of oilseeds.

Cargill totals 70 million dollar investments in Romania

Cargill has invested more than 70 million dollars in Romania since the beginning of its activity 12 years ago. Out of the invested amount, 10 million dollars were allocated for revamping the oil factory Olpo Podari and silos. The company has about 1300 employees in the 46 different locations and a yearly income of 100 million dollars. Cargill began its activity in 1996 and bought the first silo in Călăraşi in the year 2000; it gradually became the most important operator on the grain storage market in Romania, having a total storage capacity of 1 million tons.

Seed grading

The National Grain Grading Commission (NGGC), in charge of implementing the grading system in Romania, has the web page http://domino.iqm.ro/gradare/home, where all the information can be found referring to seed grading, including weekly grading reports.

According to NGGC data, the oilseeds received and graded in the year 2006 accounted for 65 % of total production. 59% of sunflower production went to warehouses, and grade 1 was found in 19% of the stored production. Hence we can conclude that the combines used for sunflower harvesting have a high wear and tear degree. 81–83 % of the soybean and rapeseed production went to warehouses, and 61% of the delivered rapeseed was classified into grade 1, while for soybean grade 1 represented only 44% (Table 2).

Table 2

Oilseeds delivered to warehouses, out of which grade 1, in the period 2006–2007

Specification	2006			2007		
	Total production (tons)	% stored production in total production	Out of which % grade 1 of stored quantity	Total production (tons)	% stored production in total production	Out of which % grade 1 of stored quantity
Sunflower	1,525,309	59	19	544,118	83	41
Soybean	344,538	81	44	137,706	53	82
Rapeseed	174,580	83	61	340,048	84	94
Total oilseeds	**2,044,427**	**65**		**1,021,872**	**79**	

Source: National Grain Grading Commission.

Although much progress has been made in monitoring the oil seeds quality, as long as the reporting is not made by production zones but by total country, the players on the oilseeds market know only half of the reality, i.e. the oil seeds quality, and not the geographic area where they can buy them.

5. MARKETING SECTOR ANALYSIS

The oilseeds are among the few vegetable products for which the payment is made on the spot (immediately), as they are sold at the very moment of harvesting.

In sunflower production, only 70 thousand tons of seeds do not enter the producer, depositor, processor or trader system. This quantity of seeds is used by farmers for obtaining oil in small processing units. The oil obtained in this way is used in the very next period, being prone to oxidation.

Soybean is mainly cultivated by the units with integrated production that have also livestock herds. The beans are processed in specialized units and the processing value is paid. The soybean oil is used in margarine production or it is exported through the intermediary of specialized traders.

The soybean oilcake imports are made through the specialized trade companies on order basis. The trader imports the oilcakes at the moment when all the oilcake quantity that it imports is covered by contracts.

In the recent period, due to the increasing demand for soybean oilcakes on the domestic market, the oil factory from Urziceni used direct imports of soybeans that were subsequently processed depending on the demand on the domestic market.

There are also situations when the large consumers of soybean oilcakes use direct imports of soy beans that they process in specialized units depending on the feed needs.

As a result of the drastic diminution of the domestic soybean production, the milled quantity correspondingly decreased. As the soybean oil demand is very low, the direct oilcake imports are preferred, which account for 65% of the yearly consumption.

The rapeseed production goes mainly to export and it is obtained on the farms with their own combine harvesters. The rape seeds are sold to an exporter at the harvest time.

By tradition, Romania is a net sunflower oil exporter. The sunflower oil export totaled only 61 thousand tons in the season 2007/2008, by about 3 times lower than in the previous season. The diminution of brut oil exports was the result of the increase of exported seeds and and of oil supply diminution implicitly. The main destinations of sunflower brut oil exports were the European Union, 56% (Spain, Hungary and Poland) and Turkey 29%. On the other hand, many firms experienced difficulties, their exports being penalized due to national currency depreciation versus EURO and USD. Further problems appeared, due to very high prices for the raw material. Romania exported 24 thousand tons soybean oil, that is why the production capacity follows and increasing trend. The main destinations of exports were Bulgaria and Turkey.

The sunflower oil cake production will decrease by 25% in the season 2007/2008, to reach 284 thousand tons, following the diminution of the amounts of processed seeds. The local livestock industry will absorb, as in the previous season, 160 thousand tons, due to the rehabilitation of the pig industry and development of the calves and poultry raising sectors.

The soybean oil cake production totaled 120 thousand tons as a result of processing smaller amounts of soybeans. Anyhow, Romania remains deficient in vegetable proteins, soybean processing being dominated by a single processor, which generally offers by 10–15 dollars less than the prices on the world market and tends to discourage the traders from importing soybean oil cakes. The

investments in soybean processing continue and are made both by the oil factories and the livestock production firms.

The incomes from oilseeds exports are quite stable due to previous contracting. This happens not only with the sunflower oil but also with the sunflower oil cakes, where most contracts were previously signed and the exports were covered with merchandise.

The sunflower oil cake exports totaled 190 thousand tons in the year 2006 and they were down by 85 thousand tons in the season 2007/08. The main export destinations are the traditional partners: Turkey 55%, Hungary 20%. The export price (FOB Constanța) ranged from 70 to 95 dollars/ton.

The soybean oil cake imports were up by 32% to reach 81 thousand tons. The main suppliers were Brazil (69% of imports) and Argentina (17%).

The oil factories have low storage facilities, which ensure their operation for one month. That is why they mandate the silos or send representatives to silos to buy sunflower seeds from farmers, at harvest time, and the factory is to pay for the seeds in the shortest time possible.

The oil factories have long-term contractual relations with the silos and it seems that both parts are satisfied with this partnership.

The factories can choose between several variants of sunflower oil distribution:

- They export brut oil and oil cakes via specialized trade companies;
- The refined oil is sold directly from the factory gate to wholesalers or supermarkets;
- The sunflower oil cake is sold on the domestic market on the basis of a schedule and with the payment at the moment of delivery.

Romania has a positive trade balance from the trade with oil seeds, oils and oil cakes (Table 3).

Table 3

Romanian trade with oilseeds in the period 2005–2007

Specification	Imports (thousand tons)			Exports (thousand tons)		
	2005	2006	2007	2005	2006	2007
Soy beans	1.2	11.9	68.6	49.8	54.2	22.1
Rape seeds	0.7	4.7	9.7	111.7	130.9	279.1
Sunflower seeds	53.0	27.8	66.6	188.4	636.4	382.7

Source: National Institute for Statistics.

If we investigate the oil seeds trade in the year 2007, we find out that the trade balance was deficient only in soybeans; for the rapeseeds and sunflower seeds the balance was positive. The import prices for the oilseeds are higher because the imported quantity is to a large extent the result of imports of seeds for sowing, with a unit value much higher compared to that of the commercial seeds.

Table 4

Romania's trade with oilseeds in the year 2007

Specification	Imports			Exports			Trade balance
	Tons	thou. euro	Price euro/ton	tons	thou. euro	Price euro/ton	thou. euro
Soy beans	68559	23770	347	22091	4705	213	–19.065
Rape seeds	9704	7903	814	279125	77721	278	69.818
Sunflower seeds	66650	32451	487	382686	105274	275	72.823

Source: National Institute for Statistics.

6. OIL CONSUMPTION IN ROMANIA

In Romania, the total consumption of animal and vegetable fats and oils ranged from 16.52 kg/capita in 1990 to 10.80 kg/capita in 2006. The yearly fluctuations of the consumption of fats and vegetable oils were mainly due to the change in the ratio of vegetable fat prices to animal fat prices correlated with the population's purchasing power.

The structure of consumption of animal and vegetable fats in the year 2006 revealed that 80% of consumption was represented by vegetable fats and only 20% by animal fats. It should be mentioned that in the period December – February the highest consumption of animal fats was found, while in the period September – October the highest level of vegetable fat consumption was noticed. By tradition, in Romania animal fats are consumed in the period of winter holidays, when the pigs are slaughtered; in autumn the maximum level of oil consumption is found, for preparing canned vegetables for winter use. As a particularity of the animal and vegetable fat and oil consumption, we should mention that more than 80% of consumption is represented by the household consumption.

By tradition, the sunflower oil is mostly consumed in Romania, yet a large range of vegetable oils types is also present on the Romanian market, mainly from import.

In order to boost the oil and margarine sales, in recent years specific advertisements emerged, supported by part of processors. At this moment, there is no generic advertising for vegetables oils or for margarine.

7. PRODUCT POLICY

The specific intervention measures in the European Union for oilseeds mainly target the olives and olive oil. As Romania does not have olive and olive oil production, it cannot apply interventions.

In the case when the oilseeds are used for biofuel production, a 45euro/cultivated hectare subsidy is provided, on the condition the farmer has concluded a contract with the biodiesel plant.

8. SWOT ANALYSIS

Strengths	**Weaknesses**
– extremely fertile soils; – strategic position for export; – competitive advantage for producing maize and maize seeds; – functional grain grading system; – farmers benefit from direct payments per hectare	– fragmentation of agricultural holdings – expensive inputs – input use in inadequate amounts and qualities – low average yields – obsolete machinery fleet – technology inadequate to drought conditions – absence of market information – inadequate agricultural advisory services – non-executable contracts from the legal point of view – absence of specific legislation for stock market operation
Opportunities	**Threats**
– land consolidation – submitting applications by NRDP measures for the procurement of agricultural equipment – market information system that will also result in a more transparent input market with lower prices – efficient agricultural consultancy adapted to farmers' needs – specific legislation for commodity exchanges – executory contracts from the legal point of view – gradual increase of direct payment / hectare up to the level of those practised in EU	– extreme weather variations

9. SOLUTION PROPOSALS

- Continuation of the action of providing vouchers for the establishment of winter crops
- Correlation of the diesel oil subsidy with the moment of its use
- Facilities for procuring agricultural equipment
- Executory contracts from the legal point of view
- Almost all the farmers sell their oilseeds production at the harvest time, as they lack adequate storage premises; even if they have these premises, they cannot control the self-heating phenomenon that is very frequent in oilseeds.
- The improvement of farmers' information – use of radio or national television. The farmers complained about not being able to design a marketing or planting strategy as they do not know about the other farmers' planting intents, or about the evolution of harvested yields. At this moment, they make decisions not knowing the real facts. They feel like "the blind that are trying to find the light".

- Commodity exchanges that should operate on the basis of commodity exchange laws, rather than on the basis of the law on commercial companies, which enable making profit. Everywhere in the world the commodity exchanges are non-profit units representing the place where the supply meets the demand.
- ANCA activity improvement – all the interviewed farmers recognized that they have not benefited from ANCA consultancy and that they have never been visited by this employees of this institution. They even signaled aut that many ANCA employees are part of the management staff from the local councils and that their main activity is local councillor.

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