

# PROSPECTS FOR DEVELOPMENT OF EARLY POTATO PRODUCTION IN ROMANIA

## PERSPECTIVE PRIVIND DEZVOLTAREA PRODUCȚIEI DE CARTOF TIMPURIU IN ROMANIA

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**Abstract.** *Production of early potato (*Solanum tuberosum* L.), is a traditional cultural practice in Romania, especially in the South and Vest region. This enables crop producers to obtain a high income, after a short period of time. The theme chosen for study is of great interest if we consider that far in our country are too few data on early potato crop efficiently and influence on physiological processes and productivity of potato culture. Concrete knowledge on the role of biological and physiological characteristics and indicators in increasing yields, could help increase the chances of creating crop genotypes with improved performance and yearly yields. In fact the early potato consumption, which means that crop as the harvesting period from the second half of May and continuing along the month of June. To increase early production at harvest must be respected potato cultivation technology generally and the early consumption.*

**Key words:** early potato, production, marketing, efficiency

**Rezumat.** *Producerea cartofului timpuriu (*Solanum tuberosum* L.), este o practică tradițională cultural în România, în special în zona de Vest și Sud. Acest lucru a culturilor permite producătorilor de a obține un venit ridicat, după o perioadă scurtă de timp. Tema aleasă pentru studiu este de mare interes dacă avem în vedere faptul că până în prezent în țara noastră sunt prea puține date cu privire la eficiența culturii de cartof timpuriu și influența unor procese fiziologice asupra precocității și productivității culturii de cartof. Îmbogățirea cunoștințelor privind rolul unor caracteristici și indicatori biologici și fiziologici în sporirea randamentelor, poate contribui la creșterea șanselor de creare a unor genotipuri cu performanțe îmbunătățite și recolte timpurii. De fapt prin cartof pentru consum timpuriu, se înțeleg acele culturi care au ca perioadă de recoltare începând cu a doua jumătate a lunii mai și continuând-se de-alungul lunii iunie. Pentru creșterea producției la recoltările timpurii trebuie respectata cu strictete tehnologia de cultivare a cartofului, în general, și a celui pentru consum timpuriu.*

**Cuvinte cheie:** cartof timpuriu, producție, marketing, eficiență

### MATERIAL AND METHOD

The research methodology used in this paper has considered the following aspects: • bibliographic study of national and international literature; • collecting factual information of the investigated area; • ordering, processing and presentation of results in summary form; • analysis and interpretation of results, conclusions and recommendations.

## RESULTS AND DISCUSSIONS

The importance of the potato crop is given, on the one hand, the large area allocated to this crop in the world and in our country, and secondly by the quantity of potato tubers consumed by the population. The weight of the use of vegetables in the diet of the population is an indicator for assessing the standard of living of a people. For a human adult daily diet (3,000 calories) are needed such as food and animal 714g and 1225g of vegetables, which represents a total annual consumption of 110 – 148 kg vegetables. Average consumption of vegetables in countries U.E. is 121 kg/an/cap capita, while Romania, with an average consumption of 149kg/an/cap capita, is among the countries of the world's largest consumer of vegetable (Ciofu, 2003). The total consumption of 125 – 150 kg vegetables a year per capita potato consumption is included, which after Draica, 1999, quoted by Nicola, in 2007, reaching approximately 75 - 80kg/an.

Starting from this general analysis is proposed based on potato culture current premises in future projections, both in terms of production activity and the scientific research.

Potato cultivation advantages resulting from the fact that this culture leaves the field early, maintenance costs are lower and the culture finds favorable climate and soil conditions due to remaining water reserves in soil and cooler climate that spring.

Other advantages are:

- Reduce the period of vegetation in the open.
- Growing potatoes in optimal conditions - favorable to this crop.
- Getting a product for the early date.
- As a result - making the product affordable.

The need for research conducted on the potato crop is given low areas and low yields obtained in our country to this new culture. Average production in Romania is around 14.5 t / ha, which is - 3 3% of yields obtained frequently in western and northern countries – west of Europe and only February 1 to May 1% of potential biological production Variety used.

Analyzing the potato occupied areas in our country in recent years can be seen that the areas have decreased after 1989 and only since 2004, the area cultivated with potato has started to increase to 260,600 ha (average), ensuring full requirements Romania affordable consumer potato (table 1).

The area planted for early consumption was 20 100 ha in 1989, fell to 10,300 hectares in 1997 and stabilized at 12 900 ha in 2008.

Decrease in areas planted with potatoes and early summer due mainly to low interest for this culture, determined on the application of Law 18 of the land, farm households have no mechanical means necessary for this culture and logistic system for the collection, transport, storage and disposal.

Another aspect to be mentioned is that it share of area under potato has fallen early and summer and autumn increased potato weight. This was due to destruction of irrigation systems in areas with low rainfall, stopping here is cultivated potato (areas suitable for potato crop in early summer and irrigated), with a preference for other crops, especially cereals. In this sense, we consider that in Romania, will significantly reduce

the area planted with potato in the coming years there will be focus and specialization of production, will remain on the market that may prove competitive with producers in the European Union or elsewhere. This will not decrease the total production of potatoes, but the concentration of production on larger areas, operated by fewer farmers and increasing productivity per hectare.

Table 1

**Evolution of the potato growing areas in the period 1989 - 2008**

Year	Total Thousands ha	Area (thousands ha)		%	From which:					
		State sector	Private sector		Early variety	%	summer variety	%	autumn variety	%
1989	351.4	26.4	325.0	92.5	20.1	5.7	46.2	12.1	288.7	82.2
1990	289.6	21.1	268.5	92.7	147.0	5.1	29.4	10.2	245.5	84.4
1991	234.9	17.5	217.4	92.5	9.6	4.1	30.6	8.8	204.7	87.1
1992	218.7	14.9	203.8	93.2	8.2	3.7	18.6	8.5	191.9	87.7
1993	249.0	18.5	230.5	92.6	9.8	3.9	23.1	9.3	216.1	86.8
1994	248.6	13.8	234.8	94.4	9.6	3.9	23.0	9.3	216.0	86.9
1995	244.3	9.5	234.8	96.1	10.2	4.2	22.4	9.2	211.7	86.6
1996	257.0	10.0	247.0	96.1	10.1	3.9	22.9	8.9	224.0	87.2
1997	253.2	9.6	243.6	96.2	10.3	4.1	21.7	8.5	221.2	87.4
2004	260.6	0	260.6	100	13.7	5.3	19.3	7.4	227.6	87.3
2005	261,3	0	261,3	100	13,1	5,0	21,3	8,1	226,9	86,9
2006	282,7	0	282,7	100	12,5	4,4	23,5	8,0	246,7	87,6
2007	276,1	0	276,1	100	11,8	4,3	23,9	8,2	240,4	87,4
2008	275,0	0	275,0	100	12,9	4,7	23,1	8,4	238,9	86,9

Source: MADR

There are great possibilities of the area occupied by potato decrease early especially since some areas have climatic conditions such as the light soil (sandy-clay) of N.-V. Transylvania S. Oltenia, Banat V., and Ilfov counties. Romania can become a producer of potatoes for consumption early (second half of May and June), both for domestic consumption, but mainly for export (both N -V Europe and Central Europe and N. East). It is true that traditional early potato producers face competition from producers in the Mediterranean (Italy, Spain, Portugal), which provides good quality potatoes at relatively low prices but using the technology works and minimum pedo-climatic benefits, Romania may become a country known in early potato production. There are other cheaper suppliers of early potatoes such as those in Morocco, Israel, Egypt and Cyprus which provides potatoes at prices 12-17% lower prices for local producers, but the quality of potatoes is weaker, especially because of the taste grown in sandy soil.

Regarding the consumption of potato early to say that is an important component for human consumption. In 2008, potato consumption and early summer is 15 kg / inhabitant, with no significant differences compared to the previous three years except in 2005 when it was higher.

Human consumption of potato winter, the largest quantity of potatoes consumed, because it's best to store over winter in the range of 70-80 kg / capita and price depending on the price of other food commodities.

Early potato consumption is lower, representing 12% - 14% of total production. In industrial potato consumption decreased in 2008 by two times compared with 1992, from 60,000 tons to 30,000 tons. For the year 2007 stood at 30,000 tons, but an increase over 2005 when industrial consumption was 10,000 tons. Potatoes are consumed as food industrialized flaked and extruded. After 1990 no longer used in the manufacture of alcohol or potato starch instead of being taken by the cereal with a much lower price, and finished products are much cheaper. In 2008 we are dealing with human consumption decreased by 4.4% compared to 2007, fresh potato consumption. Most human consumption is fresh potato, 81.7 kg / capita (average) and a very small proportion of industrialized potato. Early potato production growth in Romania is an important measure for improving this crop. From studies in different parts of the potato in our country and in Suceava County, showed that an important role they are very different varieties. Depending on the length of vegetation are consumed early potato varieties for consumption in summer, autumn and winter consumption and industrialization. As a result of potato growers to choose varieties according to potato culture. Given market demands for industrial potato, processing, consumption and early potato, many manufacturers have turned to the potato seed imports from the EU.

Table 2

**Evolution of the potato growing areas in the period 1989 - 2008**

Year	Total Thousands ha	Area (thousands ha)		%	From which:					
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2005	261,3	0	261,3	100	13,1	5,0	21,3	8,1	226,9	86,9
2006	282,7	0	282,7	100	12,5	4,4	23,5	8,0	246,7	87,6
2007	276,1	0	276,1	100	11,8	4,3	23,9	8,2	240,4	87,4
2008	275,0	0	275,0	100	12,9	4,7	23,1	8,4	238,9	86,9

Source: MADR

Table 3

## Evolution of the destinations and offer potato varieties in Suceava County

Nr. Crt.	Variety	Destination	UM	Years		
				2005	2006	2007
1	LAURA	Gross production	To	728,75	780,0	645,0
		Commercial production 85%	To	619,44	663,0	548,25
		From which: 20 % seeds	To	123,89	132,60	109,65
		consumption	To	495,55	530,40	438,60
2	COSMOS	Gross production	To	562,5	577,5	512,5
		Commercial production 85%	To	450,0	462,0	410,0
		From which: 20 % seeds	To	67,5	69,3	61,5
		consumption	To	382,5	392,7	348,5
3	MIRABELA	Gross production	To	744,0	754,5	1170,0
		Commercial production 85%	To	632,4	641,33	994,50
		From which: 20 % seeds	To	94,86	96,20	149,18
		consumption	To	537,54	545,13	845,32
4	REDSEC	Gross production	To	397,0	412,0	365,0
		Commercial production 85%	To	337,45	350,2	310,25
		From which: 20 % seeds	To	50,62	52,53	46,54
		consumption	To	286,83	297,67	263,71
5	DESIREE	Gross production	To	675,0	712,5	607,5
		Commercial production 85%	To	607,5	641,20	546,75
		From which: 20 % seeds	To	60,75	64,13	54,68
		consumption	To	546,75	577,07	492,07
6	SANTE	Gross production	To	700,0	724,0	603,0
		Commercial production 85%	To	630,0	651,6	542,7
		From which: 20 % seeds	To	126,0	130,32	108,54
		consumption	To	504,0	521,28	434,16
7	AGATA	Gross production	To	100,0	110,0	93,5
		Commercial production 85%	To	95,0	104,5	88,83
		From which: 20 % seeds	To	-	-	-
		consumption	To	95,0	104,5	88,83
8	ROSARA	Gross production	To	220,0	230,0	205,0
		Commercial production 85%	To	209,0	218,5	194,75
		From which: 20 % seeds	To	-	-	-
		consumption	To	209,0	218,5	194,75

From the table, it is apparent that commercial quantity is extracted from a rate of 15 to 20% of seed potato and the difference is the date for consumption, trading performance is best at present and Rosaria AGATA varieties because they are early potatoes with a uniformity much better growth and used in potato consumption in the market as "early vegetables (potatoes).

In 2008 the potato crop occupies a total area of 28,826 hectares in the Suceava County, 85% of the program that is 34,140 hectares. In this area, 624 hectares have been planted in farms viable, with opportunities and materials that could best meet technological links to produce the most potatoes. Also, the total area of potatoes planted, 80 hectares are early potatoes, potatoes are 1740 hectares and 27,006 hectares are summer winter potatoes.

## CONCLUSIONS

In the context of current social and economic effects of global crisis manifests itself with greater intensity in one of the most important sectors of Romanian economy - agriculture. In a world faced with climate shocks, energy and food crisis, remains the most important potato crop and is expected to be a solution that would ensure global food security for the period following decades.

The need for research conducted on the potato crop is given the low level of production achieved in our country. Average production in Romania is around 14.5 t / ha, which is - 3 3% of yields obtained frequently in western and northern countries - western Europe and only February 1 to May 1% of potential biological production the varieties used.

Early potato consumption is lower, representing 12% - 14% of total production. In industrial potato consumption decreased in 2008 by two times compared with 1992, from 60,000 tons to 30,000 tons.

Early potato production growth in Romania is an important measure for improving this crop. The studies showed that they have an important role are very different varieties. Depending on the length of vegetation are consumed early potato varieties for consumption in summer, autumn and winter consumption and industrialization.

To increase production early harvest should be strictly respected potato cultivation technology in general, and the early consumption. Agro-technical measures are specific each end of the culture (early consumption, consumption, summer variety) and each variety under irrigation and differentiated within the same scope and variety.

## REFERENCES

1. **Istudor N., 2000** - *Modele de organizare a piețelor agroalimentare*. Ed. Economică, București, pag. 19.
2. **Letiția Zahiu, Victor Manole, Vintilă Rotaru, 1998** – *Management, Marketing Agroalimentar*. Lito ASE, București, pag. 246.