

ANALYSIS OF PERFORMANCE FROM PROCESSING AND PRESERVING OF FRUIT AND VEGETABLES

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Abstract:

Given that the world population is increasing continuously in recent years, and natural resources are becoming increasingly scarce, ensuring healthy food problem is a global challenge. Nutritional value, palatability, and high degree of assimilation by the body makes fruits and vegetables are recommended and widely used in food, both fresh and preserved.

The study aims at comparing the activity of manufacturing fruit and vegetable juices with the processing and preservation of fruit and vegetables to highlight which of the two is more efficient in the economic and financial point of view. Through a descriptive and comparative analysis of specific indicators are reflected the main aspects of the performance of the two sectors in Romania. The main source of information is the National Agency for Fiscal Administration. The period analyzed is from 2008, when started financial and economic crisis in Romania, and 2015, because until this year were available the necessary information, which can explain the evolution of performance not only during the crisis, as well as after it is finished.

In this study, it was found that the industry processing and preservation of fruits and vegetables in Romania is quite efficient and has been constantly developing, but mainly in the processing and preservation of fruits and vegetables, the production of fruit and vegetables recording much lower.

Key-words: performance, turnover, fruits, vegetables, processing, preservation, food industry

JEL Classification: M49, O13

1. Introduction

The food industry is based increasingly more on health insurance and, in this respect, receives additional support through specific measures taken by governments around the world and international organizations.

Consumers are more demanding with the products that they consume and seek those that meet their individual expectations perfectly.

To provide the body with all the nutrients needed for a complete diet, balanced and diversified. Such a regime includes regular consumption of **fruit** and **vegetables**. There are numerous studies that attest to the decisive importance of daily consumption of fruits and vegetables because they provide a significant contribution of vitamins, minerals, fiber and antioxidants, essential nutrients that help the body to fight against various diseases. In a balanced nutrition, fresh and processed fruit and vegetables cover approximately 15% of human energy and contribute to a varied diet.

Because of microorganisms and enzymes, fruits and vegetables spoil easily and retention duration decreases. For insuring the consumption throughout the year and in any corner of the earth, vegetables and fruits are subjected to the process of preservation by dehydration, boiling or baking with technological devices able to retain the organoleptic qualities.

Etymologically, the word derives from the French term **conserv**, meaning the treatment that prevents spoilage caused by biological agents, physical, chemical weathering on perishable products.

Increasing demand for food for the population, while recording an enhanced requirement to agri- food products, requires extensive use of various methods and techniques of conservation, to diversify and improve the quality of food products. The assortment of the preservative include canned vegetables in water, brine, broth or tomato juice, oil, or various compotes and juices of vegetables and fruits etc. There preservation methods that can be applied to most of the products (for example, refrigeration, freezing, heat treatment, etc.) or in certain products (for example, smoking). There is also conservation method which does not require special equipment (for example, salting, saccharification, etc.) and methods using specific equipment (such as refrigeration, freezing, sterilization, etc.). Some preservation processes involve psycho sensorial profound modification of qualities of the product (for example, souring pickles), while the other ensures the preservation of the qualities as intact native (for example, conservation by refrigeration).

2. Literature review

Performance is found in a variety of areas with different meanings, and its definition is a challenge for specialists because there is no unitary vision on this concept. Etymologically, the term performance comes from the Latin origin **performare**, meaning to make whole thing, but its significance comes from the verb from English **to perform**, which means to make something of a convenient manner by regular method and enforcement. [7]

If some authors believe that the performance is unstable equilibrium resulting from the evolution of concepts of efficiency and effectiveness [4] - [11], others argue that the performance a company includes productivity, competitiveness, profitability and efficiency. [5] - [9] Moreover, some authors argue that performance is an expression of the wealth created by the company by implementing a comprehensive strategy viable, that allows the use of resources attracted and opportunities competitive environment by meeting the requirements of partners in terms of survival they term [7], while others interpret the concept of business performance as good or successful plan successful general or specific activity of the company. [10]

A company is considered successful in the new conditions of globalization of the world economy that takes into account the opinion of employees, create added value for its shareholders, meet customer demand and protect the environment. [1]

Regarding the performance of agriculture and agro-processing activities were conducted various studies both Romanian specialists [2] - [3] - [6] and foreigners. [8] - [12]

Processing and preserving fruits and vegetables industry, component of the food industry is regulated by a set of rules both international and national.

Therefore, European Parliament and European Union Council approved Regulation 178/2002 which refers to the general principles and requirements of food law and the establishment of the European Food Safety Authority. ISO 22000: 2005 is the international standard for ensuring safety in the food industry worldwide.

Nationally, the most representative acts are the Law. 312/2003 regarding the production and enhancement of vegetables field, published in Official Gazette no. 537 / 25.07.2003, the Government Decision no. 1614/2003 approving the Methodological Norms for applying Law no. 312/2003 regarding the production and enhancement of vegetables field, published in Official Gazette no. 58 / 23.01.2004, Law no. 348/2003, Law Tree Growing, published in Official Gazette no. 541/28.07.2003, the Government Decision no. 156/2004 approving the Methodological Norms for applying Law Tree Growing, published in Official Gazette no. 149 / 19.02.2004, Order no. 510/768/319/2003 of the Ministry of Agriculture, Water and Environment, Ministry of Health and the National Authority for Consumer Protection for approving the Norms concerning the nature, composition, manufacture and labeling of fruit juices and certain similar products intended for human consumption - Official Gazette 660/17.IX.2003, Order no. 523/808/351/2003 of the Ministry of Agriculture, Water and Environment, Ministry of Health and the National Authority for Consumer Protection for approving the Norms regarding the nature, content, production and labeling of jams, jellies and marmalades and puree sweetened chestnut intended for human consumption - Official Gazette 755/5.XI.2003.

3. Research methodology

The study aims at comparing the activity of two sectors, namely: the production fruit juices and vegetable processing and preservation of fruit and vegetables to highlight which of these two is better.

Issues study's approach is qualitative, but also quantitative and the analytical methods are descriptive and comparative.

The main source of data is the National Agency for Fiscal Administration and the analyzed period is the period 2008 - 2015. We chose this time to reflect the evolution of performance since the onset of the financial crisis and 2015, because the 2016 are not yet available all necessary data.

The study results provide added value to state of knowledge in this area through the following qualitative aspects of scientific research: making a brief description of the industry processing and preserving fruits and vegetables and the presentation of its evolution by comparing two sectors in the period 2008 - 2015, that period during the financial crisis and the after.

4. The analysis of the evolution performance of industry processing and preservation fruit and vegetables in Romania

According to the classification of the national economy, industry processing and preserving of fruit and vegetables contains three sectors, namely:

- processing and preserving potatoes (NACE code 1031);
- manufacture of fruit and vegetables juices (NACE code 1032);
- processing and preservation of fruit and vegetables (NACE code 1039).

The processing and preservation of fruit and vegetables in Romania has the characteristics of the sector was in a slight increase, as confirmed by the following (table no. 1):

- number of operating companies has increased slightly (only in 2010 there was a decrease in the number of companies 1.3%), from 232 companies in 2008 to 295 companies in 2015;
- turnover in industry increased during the period 2008-2015, with an average rate of 5.62% / year (three years of the review there was diminishing turnover - in 2010 to 12.8% in 2011 7.5% and in 2014 1.6%);
- dynamic sales / employee is positively in analyzed period with the exception of 2014.

Table no. 1 The evolution of performance processing and preservation activity of fruits and vegetables

Elements	2008	2009	2010	2011	2012	2013	2014	2015
No. companies Turnover> 0	232	234	238	235	247	258	268	295
Dynamics of companies	0,90%	1,70%	-1,30%	5,10%	4,50%	3,90%	10,10%	0,90%
Average number of employees	4.898	5.367	4.662	4.009	4.862	4.125	4.407	4.296
Total turnover (mill. Euro)	297,21	343,52	299,64	277,12	348,21	369,54	363,64	414,06
Dynamics of turnover		15,6%	-12,8%	-7,5%	25,7%	6,1%	-1,6%	13,9%
Turnover / employee (EUR / year)	60.678,99	64.006,53	64.272,37	69.125,20	71.618,03	89.585,72	82.514,16	96.381,53
Dynamic sales / employee		5,5%	0,4%	7,6%	3,6%	25,1%	-7,9%	16,8%

Source: <https://www.anaf.ro/indicatori/indfinanciari.html> and own processing

The main players in the industry are: S.C. Star foods E.M. S.R.L., S.C. Intersnack S.R.L., S.C. Efes Export, S.C. Contec Foods S.R.L., S.C. Ava 3 company S.R.L., S.C. Fralvil S.A., S.C. Mib Prodcom S.R.L., S.C. Golden Foods snacks S.R.L., S.C. Klevek Factory S.R.L. și S.C. AnnaBella S.R.L.

4.1. Analysis of the evolution performance of the manufacturing industry fruit and vegetables juices

The activity of manufacturing fruit and vegetable juices in Romania is characterized by multiple changes in the analyzed period (table no. 2). Therefore, if the number of operating companies increased nearly twice the analyzed period (from 33 companies in 2008 to 60 companies in 2015) in terms of average number of employees and total turnover, they decreased high (from 924 employees in 2008 to 185 in 2015 and a turnover of 67.8 million Euro in 2008 to 5.1 million Euro in 2015). Regarding turnover per employee, which registered very high growth in the first six years analyzed, and in the last two years has decreased significantly, which express the poor performance of the sector.

Table no. 2 Evolution of performance in the activity for the production of fruit and vegetable juices and the percentage in total sector

Elements	2008	2009	2010	2011	2012	2013	2014	2015
No. companies Turnover> 0	33	40	41	39	40	42	59	60
The share of sector in total industry (%)	14,22	17,09	17,23	16,60	16,19	16,28	22,01	20,34
Average number of employees	924	813	121	158	177	169	176	185
The share of sector in total industry (%)	18,86	15,15	2,60	3,94	3,64	4,10	3,99	4,31
Total turnover (mill. Euro)	67,8	59,2	8,7	11,5	15,6	15,0	4,5	5,1
The share of sector in total industry (%)	22,81	17,23	2,90	4,15	4,48	4,06	1,24	1,23
Turnover/employee (EUR/year)	73.408	72.787	71.924	72.598	88.376	88.941	25.719	27.669

Source: <https://www.anaf.ro/indicatori/indfinanciari.html> and own processing

Schematic presentation of the development of the performance for analyzed sector is carried out in Figure no. 1.

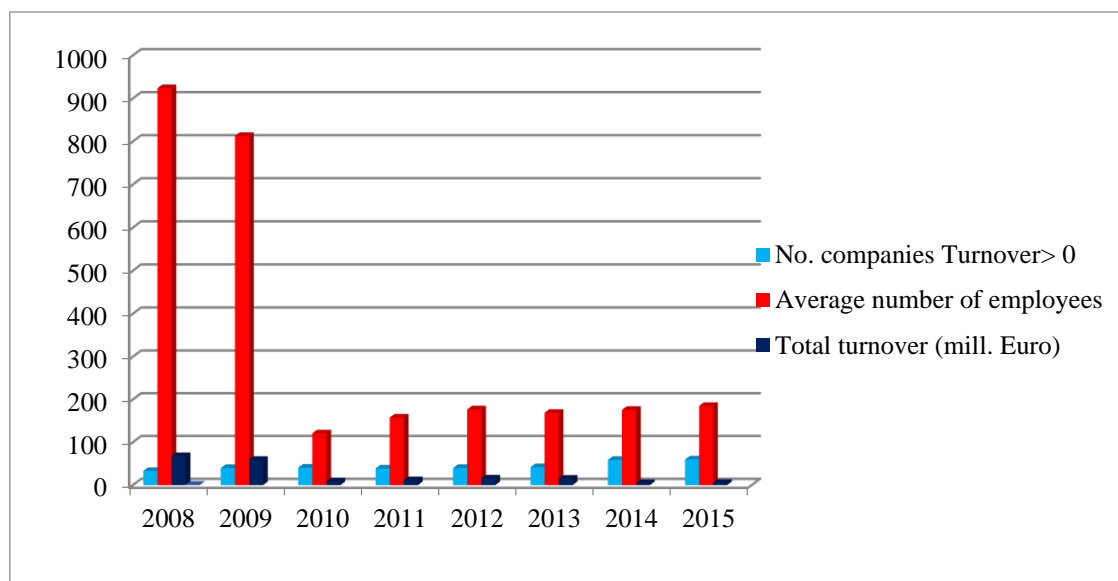


Figure no. 1 Sector development for the manufacture of fruit and vegetables juices in Romania

4.2. Analysis of the evolution performance of the processing and preservation industry of fruit and vegetables

The processing and preservation of fruit and vegetables in Romania is characterized by multiple modifications to all the elements analyzed in the period analyzed (table no. 3). The number of operating companies recorded a slight increase in the analyzed period (from 186 companies in 2008 to 220 companies in 2015), the average number of employees decreased (from 3,299 employees in 2008-2753 employees 2015), total turnover increased (from 186 million Euro in 2008 to 221.4 million Euro in 2015) and turnover per employee recorded very high and rising (except years 2009 and 2012 the indicator decreased slightly), which expresses the growth performance of the sector.

Another very important aspect is the fact that its share in total industry is considered the largest and the positive results and rising performance indicators analysis indicates positive development of efficiency in this field.

Table no. 3 Evolution of performance in the activity for processing and preservation of fruit and vegetables and percentage in total sector

Elements	2008	2009	2010	2011	2012	2013	2014	2015
No. companies Turnover > 0	186	181	185	181	194	200	195	220
The share of sector in total industry (%)	80,17	77,35	77,73	77,02	78,54	77,52	72,76	74,58
Average number of employees	3.299	2.988	3.151	3.275	3.262	2.608	2.922	2.753
The share of sector in total industry (%)	67,35	55,67	67,59	81,69	67,09	63,22	66,30	64,08
Total turnover (mill. Euro)	186,0	165,6	185,7	197,7	191,3	211,1	203,8	221,4
The share of sector in total industry (%)	62,58	48,21	61,97	71,34	54,94	57,13	56,04	53,47
Turnover/employee (EUR/year)	56.370	55.430	58.949	60.356	58.648	80.949	69.746	80.428

Source: <https://www.anaf.ro/indicatori/indfinanciari.html> and own processing

Evolution of activity for processing and preserving of fruit and vegetables in Romania during 2008 - 2015 is shown schematically in Figure no. 2.

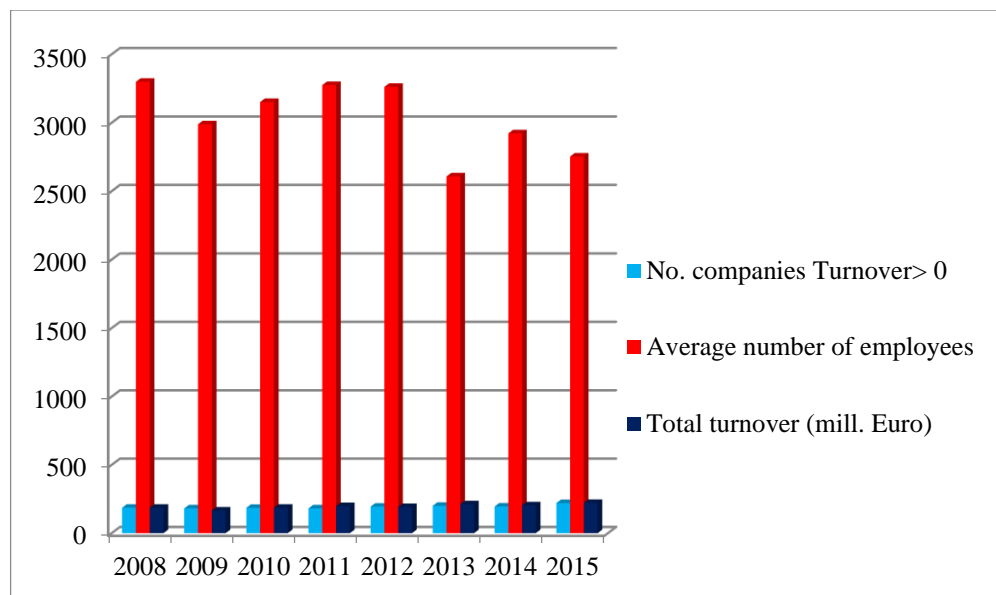


Figure no. 2 Sector development for processing and preservation of fruits and vegetables in Romania

5. Conclusions

For a healthy and balanced diet is recommended consumption of fruit and vegetables. Because these foods are seasonal and are perishable processing and preservation need to be consumed over a longer period and in any corner of the world.

Industry processing and preserving fruits and vegetables are a very important component of the food industry, facilitating the consumption of fruit and vegetables over a period of time, using processing technologies and conservation of increasingly powerful, designed to keep better nutritional characteristics thereof. This industry in Romania has mostly the characteristics of a sector which is in a slight increase, which is attested at the two sectors analyzed components. Above is the processing and preservation of fruits and vegetables (NACE code 1039), which holds the largest share in the industry analyzed.

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