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PRODUCTION MANAGEMENT AND HACCP QUALITY ASSURANCE AT SC VINIA IAŞI
MANAGEMENTUL PRODUCȚIEI ŞI ASIGURAREA CALITĂȚII PRIN SISTEMUL HACCP LA SC VINIA SA IAŞI

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Abstract: *Enterprise development, in wine producing and marketing wine products, on increasing the production line in conditions of high economic efficiency raises the specialists of agricultural enterprises a wide range of economic and organizational problems, that require for their solution the use of appropriate and varied methods and procedures. The study includes theoretical and practical concepts and principles of production and quality management, and a number of methods and techniques which are tools in managerial decision-making units that have as a main activity the production of grapes, wines and marketing wine products. Theoretical foundation is complemented by a practical example consisting of SC VINIA JSC analysis in terms of manufacturing technologies, implemented quality management systems, completed by the assessement of the enterprise activity in 2007 – 2009, with emphasis on the dynamics and structure of the obtained results as well as the indicators of economic efficiency achieved during the analysed period*

Keywords*: production management, quality, HACCP, SC VINIA Iasi*

INTRODUCTION

The study contains theoretical and practical concepts and principles of production and quality management, and a number of methods and techniques which are used as tools for managerial decision-making units that have as main activity the production of grapes, wines and marketing of wine products. Theoretical foundation is complemented by a practical example consisting of SC VINIA analysis in terms of manufacturing technologies, implemented quality management systems, completed by the assessement of the enterprise activity in 2007 – 2009, with emphasis on the dynamics and structure of the obtained results as well as the indicators of economic efficiency achieved during the analysed period.

For the processing and intepretation of data, there have been used methods such as diagnostic analysis method, investigation and correlation.

MATERIAL AND METHOD

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RESULTS AND DISCUSSION

A very important demand of modern viticulture and oenology is to achieve a productive and dynamic economic growth, at the level of the whole production and each viticultural species. A huge impact on economic efficiency is exercised both by production management, by the choice of the optimum mix of factors available at the enterprise level as well as quality management through the improvements made in the quality of the products offered and the added confidence of potential customers. *(Brezuleanu S., 2009)*

The main activity of SC VINIA company is in agriculture and food industry, mainly in „ the manufacture of beverages."

S.C. VINIA JSC produces both wine and wine-based alcoholic beverages, distilled from wine and fruit, natural yeast brandies, marc, spirits, vinegar, soft drinks, which are sold in both domestic and foreign markets.

At any time S.C. VINIA. offers a wide choice in terms of wines: from ordinary wines to wines with designation of origin and quality levels (DOCC-CT).

At present, Iasi Vinia JSC has seven wine cellars for grapes processing, primary conditioning and wine storage-raw material, placed in the middle of the main wine growing areas from Moldova, represented by Iasi Cotnari vineyard (Bucium, Copou and Uricani wine growing centers), Bohotin and Huşi vineyards (with Vutcani and Iana wine growing centers).These wine cellars have modern technical equipment that allows the production of high quality wines and a sized processing capacity so that to process the entire quantity of grapes produced in that area.

Conditioning sector is endowed with equipment and installations which allow the processing of wine so that a finished product can be obtained, a product that satisfies the quality conditions and food safety

according to HACCP principles and according to SR EN ISO 9001 and SR EN ISO 22000. *(Codex Alimentarius)*

The raw material is provided from the vine plantations owned by Iasi Vinia JSC and vine areas taken on lease from various owners.

1. Products and services. The company manufactures and makes wine from grapes based on commercial contracts as well as from its own production in its own Romanian vineyards, such as: Cotnari, Uricani, Bohotin, Huşi, Bucium, Murfatlar, Tulcea, Dealu Mare, Panciu and Coteşti, and provides a wide variety of domestic and imported varieties.

2. Relationship with beneficiaries is considering widening the sale market of the products that the company promotes. Iaşi S.C. VINIA JSC is doing market research in order to assess its position on the market and, especially to assess how the products are received by its costumers.

Given the fact that the products, by their specificity, target only a limited category of population, Iasi SC VINIA JSC has focused on this segment, for keeping it and it endeavors to seize new markets.

3. Analysis of data provided by the account "Profit and Loss ". The Determination of accounting income is done in order to highlight the efficiency of company's operations and to determine the starting base for calculating income tax, the tax subject.(Brezuleanu S. & colab. 2010)

The results of the activity include: the current result, the exceptional result, the income tax. Results of the main indicators are presented in Table 1.

The situation of production and sold production achieved during 2007-2009 (RON)

Table 1.

NO.	Indicators	2007	2008	2009
1.	Income from goods sale	426 379	426 231	277 458
2.	Sold production	25 292 797	25 997 387	30 819 448
3.	Turnover	25 719 176	26 423 618	31 096 906
4.	Stock variations -finished products - production in progress	708 212 5 879 779	5 698 439 3 584 609	7 805 212 3 215 465
5.	Own purposes and capitalized production	6 002 913	110 571	98 324

Analyzing the evolution of the turnover of the SC VINIA we can highlight an upward trend over the period, representing an increase of around 22%.

Total operating expenses recorded by the firm in the same period revealed an upward trend, from 31 837 lei in 2007 to 33,169 lei in 2009, even if on certain categories of expenditure (total material costs) significant decreases were registered. (Table 2)

The situation of operating expenses during 2007-2009 (RON)

Table 2.

NO.	Indicators	2007	2008	2009
1.	Expenditure on goods	385166	388315	262 224
2	Expenditure on consumables	14 194 804	10 588182	9 530 719
3	Energy and water expenses	729 738	819 977	756 009
4	Other material expenses	2 365 090	2 326 956	2 823 248
5	Total Expenditures	**17674798**	**14123430**	**13372200**
6	Expenditure on services and work performed by third parties	5 509 139	5 161 353	6 816 559
7	Taxes and dues expenses	577 888	1 747 723	1 612 994
8	Expenditure on salaries and allowances	3 683 034	5 568 582	6 343 117
9	Expenditure on social insurance and social protection	976 467	1 451 791	1 699 779
10	Other operating expenses	6652 942	7 823 607	9 339 443
11	Interest expenses	1 757 070	1 390 118	1 477 446
12	TOTAL operating expenses	31 837 553	31 483 544	33 169 197

From the analysis of material costs, we can notice a downward trend from their 17,674,798 in 2007 to 13,372,200 lei in 2009 which represents a decrease of about 25%.

Analyzing the profit flows generated during 2007-2009, it appears that SC VINIA recorded only profit during these three years, the maximum being recorded in 2007. (Table 3)

Profit flows generated during 2007-2009 (RON)

Table 3.

No.	Name index	2007	2008	2009
1.	**Retained earnings** **Undistributed profit** Uncovered loss	 - -	 - -	 - -
2.	Results **Profit** Loss	 1525236 -	 1407349 -	 436417 -

3.	**Profit distribution**			
	-reserve-setting	120993	110394	27649
	-participation fund of employees to the profit	152523 46261	170735 70367	- 65462
	-own-source funding	854760	800788	21820
	-dividends paid:	320697	285064	165140
	-dividends due to shareholders	320174	284599	165140

S.C. VINIA recorded only profit during these three years, the maximum being recorded in 2007. During this period, profit was used entirely for self-financing. In 2009, profit fell sharply, mainly due to declines in sales.

To optimize production processes and for a better financial administration of production stocks (must) in various winemaking centers of the company, it is used a relatively simple but very useful MS Office Excel application. Below, we can observe the calculation of the conditioning and red wines bottling costs Figure 1.

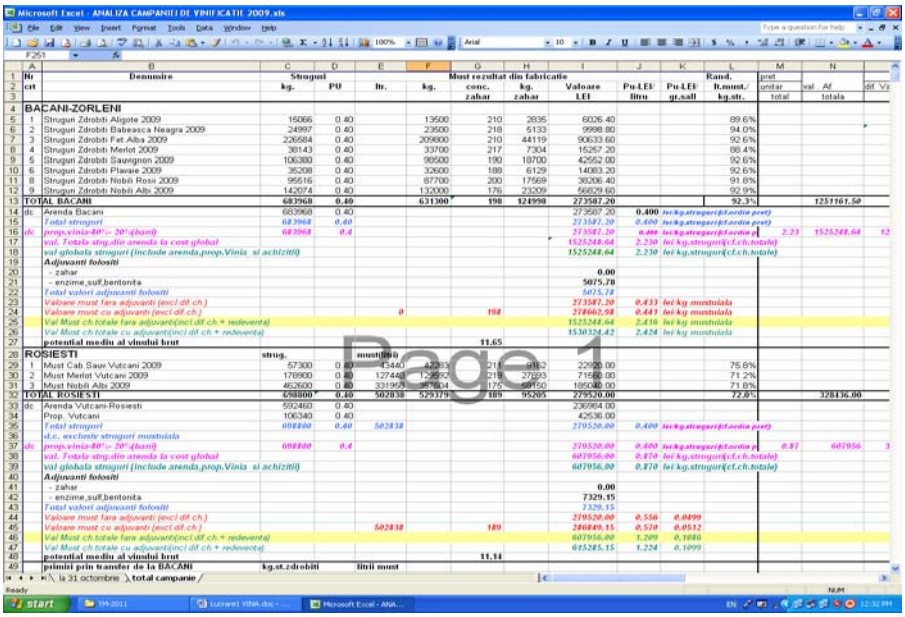


Figure 1. The analysis of the winemaking company 2009

The Application of the HACCP system in SC.VINIA .

HACCP system has the following main features: it relies on prevention, reducing reliance on inspection and testing of finished products; it can be applied throughout the food chain, from the production of raw

materials, to the consumer; it is important in improving food safety and increases the accountability and control of SC VINI. *(ISO-22000:2005)* The implementation of food safety control system was based on a systematic HACCP plan in accordance with Codex Alimentarius and HACCP principles. This plan is specific to each product and / or analyzed process. The objective of the policy concerning food quality and safety of SC VINIA is to produce and sell wine, wine based products, distillates, spirits, brandy and fruit spirits, so as to meet explicit and implicit customer's needs in accordance with general principles of the Code of good food hygiene practices **(GHP),** Code of Good Manufacturing Practices **(GMP),** the laws in force for quality and food safety in terms of making profit. *(Codex Alimentarius)*Specific objectives of S.C. VINIA are set annually and will be reviewed periodically within the management review.

Among the physical dangers that could occur in the spirits manufactured by Iaşi SC VINIA, we can mention glass shards as well as other solid particles that remained adhered on the bottom of the recovered bottles and were not completely removed in the wash and that were separated only after bottling the product.

Even though all these dangers present an extremely low probability of occurrence, they were taken into consideration during this analysis. In the second group of potential dangers, namely the chemical hazards there are many possibilities of contaminants throughout the manufacturing flow.

Critical Control Points (CCP) correspond to the operations of the technological process that can and must be controlled in order to eliminate a potential threat or minimize its likelihood of occurrence. The term "critical" is the "key" word for HA.CCP concept.

According to Codex Alinorm, a decision tree was used as a tool to determine CCP .

The organization has developed an effective preliminary program that allows a careful analysis of food safety hazards in various stages of the manufacturing flow.

In the process of production, conditioning and wines bottling, there were determined two points of attention and a single critical control point for which correction methods have been developed, corrective and specific preventive actions so as to eliminate and prevent the potential risk for food safety. (Table 4)

Critical Control Points and relevant process and controllable parameters established for wine

Table 4.

No	Process Stage	Number CCP/ PA	Risk type	Relevant parameter	Measure Unit	Critical limits
1	Iron removing wine	PA1	Chemical	Hydrocyanic acid content	Mg/ i	traces
2	Sterile filtration of wine	PA2	Biohazard	The content of yeast	Nr. of yeast/ l bottle of wine	max. 10^2
3	Bottle filling	CCP1	Physical	Glass shards	The number of shards	lack

Monitoring is planned sequence of measurement, or observation of critical process parameters which determine if the control measures taken into account continue to function as it should.

For each Critical Control Point was set up a monitoring system. The process of monitoring consists of measures and reviews that identify if the Critical Control Point is kept under control. (Table 5)

Monitoring System for wine

Table 5.

CCP	Standard values and tolerances	Monitoring		
		Method	Frequency	Responsibility
PA1	traces	- Determination in laboratory of Hydrocyanic acid content - Following technological instructions concerning iron removing	At each batch of wine	Cellar man Technician foreman Chemical Engineer
PA2	max. 10^2 yeats / l	- Verification of how the dishes and routes are washed and sterilized -Microbiological analysis	At each sterile filtration operation	Cellar man Chemical Engineer
CCP1	lack	Check glass shards on the control panel	Permanently while bottling	Operator CTC Engineer

CONCLUSIONS

Implementation and effective operation of the HACCP system in SC VINIA has several advantages: it is part of the quality management system, it is a preventive method to ensure food quality, it is one way to resist the ever increasing competition; this market manifested resistance contributes to improving the company's image and credibility on international markets, as well as it demonstrates to potential investors compliance with specific in force legislation, it increases customers and company employees' trust in the ability to make constantly safe products for consumption. This issue is one of the most important, because confidence is for any company, the most important capital, without which nothing can be done.

Proposals to increase economic efficiency and quality of products at Iasi SC. VINIA: continuous quality improvement and safety of food products manufactured by the company. Annual sales growth can be achieved by choosing a recipe for marketing success based on advertising in mass media and promoting products in hypermarkets by offering their customers products for tasting.

The immediate results in upgrading the packaging techniques, bottling line re-engineering, improving and controlling manufacturing technologies are related to strengthening position on the domestic market.

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