

# THE ASPECTS CONCERNING APPLICATION OF H.A.C.C.P SYSTEM TO THE NICOREȘTI VINEYARD

## ASPECTE PRIVIND APLICAREA SISTEMULUI H.A.C.C.P LA PODGORIA NICOREȘTI

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**Abstract.** *Every responsible wine producer is concerned with food safety and, increasingly, legislation exists to sharpen this interest. When there is a failure in food safety, it is almost invariably discovered too late. The impact on the consumer is considerable, and results in the loss of confidence in the supplier. Each producer should determine when, why and how wines should be evaluated by chemical, microbiological and sensory analysis. Implementing a HACCP or ISO 22000 forms the basis of the European Commission Hygiene Directive (93/343/EEC) incorporating the Codex Alimentarius guideline, commonly known as the HACCP principles as it applies to the food and drink industry. It is a requirement in most countries and rapidly being established as legislation for the food and drink industry to demonstrate ‘Due Diligence.’ The creation of a HACCP plan involves making a flow chart of each and every step from vineyard to wine release.*

**Key words:** implementing H.A.C.C.P, food safety, legislation

**Rezumat.** *Fiecare producător de vinuri este preocupat de siguranța alimentelor precum legislația existentă în creșterea acesteia. Când există eșecuri în siguranța alimentelor, acestea sunt invariabil descoperite mult prea târziu. Impactul consumului este considerabil, rezultând pierderi și scăderea încrederii în producător. Fiecare producător trebuie să determine când, de ce și cum va fi evaluat vinul din punct de vedere chimic, microbiologic și analiza senzitivă. Implementarea sistemului de control al siguranței alimentului ISO 22000 s-a bazat pe un plan HACCP sistematic în conformitate cu principiile HACCP din Codex Alimentarius. Acest plan este caracteristic pentru fiecare produs și/ sau proces analizat. Participarea la implementarea și menținerea sistemului integrat de management al calității și siguranței alimentare a produselor fabricate și livrate este sarcina fiecărui angajat al societății.*

**Cuvinte cheie:** implementarea H.A.C.C.P, siguranța alimentelor, legislație.

## INTRODUCTION

Nicorești vineyard is located in the eastern part of Romania, between the rivers Siret and Barlad. Administrative, the vineyard is located in the northwest county Galati, at a distance of some km from the city Tecuci and from 50 km of Galati. Mathematically the vineyard area falls between the geographical coordinates 45°52' and 45°06' north latitude and 27°19' and 27°28' east longitude.

The concrete objectives of the Nicoresti vineyard are established annually and will be reviewed periodically with the analysis made by the management.

### MATERIAL AND METHODS

To creation of a HACCP plan are taken into account the client, team work, satisfying the customer requirements, improving the quality on long term, solutions for specific situations, the involvement of the entire staff, the spirit of commitment to top level management in a logical sequence.

### RESULTS AND DISCUSSIONS

The importance of management quality is resulting at least from the following considerations:

- for any enterprise. to achieve an maintain the quality desired by the client in terms of efficiency, is a business necessity;
- the client wishes to have confidence in the ability of the enterprise to provide the required quality and to maintain this quality;
- the enterprise must take more into account of the company requirements, which aims the life protection of the individual wealth and the environmental protection.

*Table 1*

**Defining TQM as a bicomponent system**

<b>The total management of TQM quality</b>	
Social subsystem	Technical subsystem
The people get the quality, the worker represents the central point of all the processes from the enterprise	The TQM principles ( customer focus)
Management engaging and promotion of a participatory management	The general policy of the company and the policy in the quality domain
Countinous improving of quality	Techniques of solving the problems
The worker becomes executor, a participant in the processes	Different responsibilities and documented
Teamwork and personal responsibility for results	Quality system, according to international standards ISO 9000
Open work environment, partnership relationships based on trust with the customers and subcontractors	Communication and training, integration of customers and subcontractors in the quality system of the enterprise

The standard ISO 8402 defines TQM, as a management system of an organization, centered on quality, based on the participation of all its members, trough which is aimed to ensure the success on long term, by satisfying the client and obtaining of advantages for all the organization members and for the society.

Application of the H.A.C.C.P system at the VINEYARD NICORESTI

#### **A. Preliminary Steps**

HACCP is a preventive system of keeping under control the potential hazards and thus to ensure the food safety. It is a modern system of check and documented, which allows:

- identification of critical points, for taking under control the hazards;
- implementation of surveillance system

Before starting the HACCP study it was necessary to ensure that in the organization are applied:

- Code of good hygiene practices;
- Code of Good Manufacturing Practices;

As well as actions of training of the staff, which has as purpose the awareness of it to understand the objective of self-control

### **B. The stages of implementing the safety of the food safety**

Implementation of the control system of food safety was based on a systematic HACCP plan in accordance with the principles of HACCP Codex Alimentations This plans is characteristic for each product and/ or analyzed process. The projection process and implementation of the system were the following:

1. Defining the food security policy;
2. Team formation and organization of the food safety HACCP;
3. Description of the products and intended use of identification;
4. Developing the flow chart and checking on the ground;
5. Identifying hazards;
6. Hazard assessment;
7. Determination of critical control points (PCC);
8. Establish critical limits;
9. Establish the monitoring system for each PCC;
10. Establish corrective actions;
11. Establish of procedure of verification;
12. Establish of documentation and records.

**C. The objective of policy in the quality domain and safety of food of the NICORESTI** is wine production and marketing of products based on wine, distillates, spirits, plum brandy and fruit spirits, to satisfy the explicit and implicit needs of the customers, in accordance with the Code of general principles of good food hygiene practices (GHP), Code of good manufacturing practice (GMP) with the legislation in force for quality and food safety and the achievement of profit.

The main objectives of the policy in the domain of quality and safety of food of the vineyard Nicoresti are:

- Increasing of the satisfaction level of the final customers;
- Increasing of the satisfaction level of the distributors;
- Increasing the number of sales;
- Increasing of net profit;
- Increasing of labor productivity;
- Reducing non-conformities referring to the quality and safety of aliment;
- Reducing the number f complains;

- Continuous improvement of quality and safety of the aliment for the manufactured products by the company.

Participating at the implementing and maintaining the integrated quality system of management and food safety of the manufactured products and delivered is the task of each employee of the society.

Responsibility for the quality and safety of alimentary products manufactured, handled and commercialized by the company is of all the employees and of each employee individually.

#### **D. Establishing and organizing the team of aliment safety**

It was designated the safety aliment team consisting of 18 persons responsible with the projection, implementing, maintaining and continuous improvement of management system of aliment safety.

The team leader has demonstrated competence in understanding and applying the HACCP principles. The safety team of the aliment:

- has the permanent support of management at the highest level;
- communicates with all the organization staff;
- the team members were trained and have experience to demonstrate the knowledge of the production process and analysis of hazards;
- is multidisciplinary and includes operational personnel;
- had the opportunity to appeal to a consulting firm during the design and implementation of food safety;
- and in the future will have possibility to appeal at an expert from outside the organization, in the case in which that doesn't have sufficient power to resolve issues concerning aliment safety.

#### **Quality standards for bottled wine**

1. Washing and sterilizing the route to the bottling line. Washing and sterilizing the route that connects between the conditioning wine sector and bottling sector trough circulation of cold water.

2. Streaming the routes and buffer vessel in the bottling room for sterilization for 30 min. The wine transfer in the buffer recipient at the bottling line. The transfer of the wine to bottling is done by fixed routes, washed and sterilized properly. Getting the wine from the conditioning sector is done by reading at mira of the wine quantity and creating the transfer note to bottling.

3. Preparation and sterilization of sterile filter at the bottling line. The filter is washing for 30 min. with hot water at 85<sup>0</sup>C filtered at 1,2 u. Is streamed the filter in term of sterilization with steam at 160<sup>0</sup>C for 30 min, after which is made the test of integrity (special device from endowment) to see if it's not broken. Printing is done on paper of the result of direct device.

4. The sterile filtration of the wine. Sterile filtration of the wine at the bottling line is done in two phases by filtering trough consecutive rounds of different porosity, so the first cartridge is realizing a filtration to 0,8 u, and the second to 0,65 u.

5. Filling the bottles of wine at the filling machine before filling the bottles of wine, the filling machine is washed and sterilized with hot water at 1000C, filtered trough filter plates for 30 min.

Filling the bottles of wine is made under pressure of CO<sub>2</sub> as follows:

- air removal and replacement of glass with CO<sub>2</sub>
- CO<sub>2</sub> removal from the bottle and filling the bottle with wine;
- achievement the level of 750 ml or 1000 ml ;
- introducing a jet of CO<sub>2</sub> in the mirror glass of wine and the mouth of the bottle;
- transport of bottles at the machine of stopper with the help of transporting belt.

6. The float process of filled bottles. It's prepared first the adduction system of the stoppers and of float process machine by disinfecting them with a substance based on alcohol. The machine of float process has a tank of closures, a guide for bringing the stoppers, a compression stopper system and a pusher of the stopper into the bottle neck.

7. Settling the full bottles in the box. In the case in which the wine isn't delivered immediately or is a subject to the process of aging in the bottle, the filled bottles are stored in the wine cellar. For this after the float process the bottles of wine are taken form the transporting band by the operators from the bottling section and are placed horizontally in the boxes of 500 bottles capacity, with the help of which is transported in the collecting wine cellar.

8. The transport of the pallet box with bottles at the collecting wine cellar. The transport of the pallet boxes are made by the motto-forklift.

9. Depositing the pallet boxes at the collecting wine cellar. Depositing the wine at the collecting wine cellar is done with the purpose of wine aging in the bottle, fact which brings and added quality to the respective wine. The storage conditions are: lack of large variations of temperature, of the direct light and excessive atmospheric humidity.

10. Applying the termocontractible capsules. Applying the termocontractible capsules are made by automatic blowing on the bottle neck of the hood and passing the bottle trough the oven with resistance for termocontracting of those.

11. Labeling bottles. Applying the set of labels is done automatically by the labeled machine.

12. Packing the bottles in cardboard boxes. Packing bottles in cardboard boxes behave two phases:

- automatic box forming at the making boxes machine and sending them on the transporter machine at the packaging machine;
- automatic settlement of the labeled bottles in boxes and automatically closing of the boxes.

After closing the boxes it will be applied a label on the box automatically with the assortment of bottling wine.

13. Stacking the boxes on euro-pallet. Stacking the boxes on euro-pallets is performed automatically and sent to packaging.

14. Packaging the euro-pallets. Automatic fixing of the boxes on the euro-pallets is realized by packaging around a sheet of polyethylene.

15. The transport of euro-pallets at the warehouse of finished products. The euro-pallets transports at the warehouse of finished materials are made with the help of electro-forklift.

16. Depositing the bottled wine until delivery. Short-term storage until the delivery of wine to the customer.

17. Delivery of bottled wine. Delivery is made in the base of delivery disposition and of a firm order.

## CONCLUSIONS

Increasing the level of satisfaction of the distributors can be achieved through the development of all and training in permanence of those that are serving this department, by purchasing a sufficient number of machines so that the orders to be respected at time, this can be realized by accessing European funds grants.

Increasing of the sales number can be realized by choosing a marketing prescription based on advertising in the mass media and promoting the products in hypermarkets by offering for tasting to their clients.

Continuous improvement of quality and safety of the aliment for the produced products by the company; all these objectives can be achieved through accessing European funding grant to purchase a competitive technological line that will get to lower production costs automatically leading to increasing the net profit obtained, and through implementing the HACCP system, system HACCP is the ideal tool for risk prevention and risk control this being created for the alimentary sector by Codex Alimentarius Commission. By implementing the HACCP system can be achieved, and the objective which consists in increasing the share of products exported by satisfying the requirements for quality.

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