

REPORT
**for the Workshop “ HACCP systems – implementation,
verification and maintenance”**
held on 24th, 25th and 26th of September 2008 in Kavadarci

INTRODUCTION

Food industry is very important economical branch for Republic of Macedonia. Ones of significant parts are value chains in processed vegetables industry, table grapes industry and wild gathered food products companies. All together has 30,650 commercial participants and estimated export sales around 32.4 million euros.

One of the challenges in this industry is HACCP implementation.

HACCP (Hazard Analysis Critical Control Point) presents preventive system, which secures safe food production. It is based on logical application of technical and scientific principles in food production from farm to table. HACCP principles are applicable in all food production phases, e.g. farm production, preparation, handling, processing, distribution, selling and utilization.

Basic element characteristic for HACCP system is prevention and not inspection, or HACCP IS FOOD SAFETY SELFCONTROL SYSTEM. In another words primary responsibility for food safety is on food handlers.

According the Law for food safety and safety of products and materials which are coming in the contact with food from 15.07.2002 and the Regulation of the European Parliament and of the Council on the hygiene of foodstuffs from 01.01.2004 “All participants in food production, *except primary production* HAS TO INTRODUCE, IMPLEMENT AND MAINTAIN HACCP SYSTEM“. It is clear that HACCP system is legal obligation for all domestic food producers and its avoidance also presents potential non-customs and non-tariff barrier.

Food producers have to dispose with enough information for their food product/s and own technologies of production, which will allow them easily to recognize where and how food safety problem can occur. Main role at company level for food safety has an HACCP team. As all participants in food production they have to be permanently and properly informed and trained, how to implement and maintain HACCP procedures in the food process. Therefore objectives of this training were that selected wineries HACCP teams become familiar with:

- ✓ Legislative framework of the food safety standards as well as the HACCP
- ✓ Training of Trainers (steps to conduct training for the target group)
- ✓ Introduction with HACCP and its implementation
- ✓ Familiarization with food safety systems/standards
- ✓ HACCP exam and testing

CONTENT

Accomplishment of these objectives was achieved through 2,5 days intensive training for HACCP Implementation, Maintenance and Modification in Food Industry. As framework for this training it was used Codex Alimentarius Commission *Guidelines for application of the Hazard Analyses Critical Control Points* harmonized and referenced according to international food safety requirements. Training was adapted to wine industry specifics.

This training comprise following elements:

- ✓ *Pre-requirements for the implementation of the HACCP-system in food companies*
- ✓ *Assembling the HACCP-team*
- ✓ *Product/s description*
- ✓ *Preparing the flow diagram of the food processing line*
- ✓ *Potential hazards in food processing (HA - Hazard Analysis)*
- ✓ *How to select a critical control point (CCP)*
- ✓ *Establishment of preventive measures with critical limits for each critical control point (CCP)*
- ✓ *Establishment of procedures to monitor the critical control points (CCPs)*
- ✓ *Establishment of corrective actions for critical control points (CCPs)*
- ✓ *Establishment of procedures to verify that the HACCP system is working effectively*
- ✓ *Establishment of effective documentation concerning all procedures and records appropriate to the HACCP system and its application.*

Detailed training program can be seen in Annex 1 and its content in Annex 2.

Training was implemented with lectures given by 3 accredited trainers (PhD Vladimir Kakurinov, PhD Biljana Petanovska – Ilievska and Aleksandra Markovska – see Anex 5). Each training participant followed each lecture with practical exercise. Also they discussed different stages during HACCP plan preparation and HACCP implementation. At the end of the training all trainees had to pass appropriate test (see Annex 3 and 4).

INDIVIDUAL PARTICIPANTS STRUCTURE

Presence at the training was announced by 9 companies from processed vegetables industry, table grapes industry and wild gathered food products companies represented by 18 persons. (Table 1).

Table 1. Training participants structure.

No.	Organization/ Company	Place	Surname and Name
1.	Organic Farmer Federation	Skopje	Goran Kolev
2.	Organic Farmer Federation	Skopje	Ljubica Kimova
3.	Ledra Agro	Gevgelija	Frangov Risto
4.	Ledra Agro	Gevgelija	Goce Mojanoski
5.	Dusan Ciric	Rosoman	Kristina Cadamova
6.	Dusan Ciric	Rosoman	Done Klincarov
7.	Dusan Ciric	Rosoman	Slavica Angelkova
8.	Vigan	Demir Hisar	Vesna Prpuskovska
9.	Vigan	Demir Hisar	Julijana Mijakovska
10.	Vigan	Demir Hisar	Ljupco Angelovski
11.	Flores	Skopje	Ivan Stojanov
12.	Balkan Biosert	Skopje	Valentina Kolar Jovanovska
13.	Balkan Biosert	Skopje	Boban Dimovski
14.	Angromarketing	Demir Hisar	Vecko Kotovski
15.	Angromarketing	Demir Hisar	Elizabeta Risteska
16.	Agrotikves	Kavadarci	Boris Gjorgjev

At the training constantly were present representatives from 8 companies..

PRESENCE AND PARTICIPATION FOR EACH PARTICIPANT

Presence and participation of each participant was continually monitored during whole training (see Table 2).

Table 2. Presence of each training participant.

No.	Surname and name	Company	City	24.09.2008	25.09.2008	26.09.2008
1.	Goran Kolev	Organic Farmer Federation	Skopje	√	√	√
2.	Ljubica Kimova	Organic Farmer Federation	Skopje	√	√	√
3.	Frangov Risto	Ledra Agro	Gevgelija	√	√	√
4.	Goce Mojanoski	Ledra Agro	Gevgelija	√	√	√
5.	Kristina Cadamova	Dusan Ciric	Rosoman	√	√	√
6.	Done Klincarov	Dusan Ciric	Rosoman	√	-	-
7.	Slavica Angelkova	Dusan Ciric	Rosoman	√	√	√
8.	Vesna Prpuskovska	Vigan	Demir Hisar	√	√	√
9.	Julijana Mijakovska	Vigan	Demir Hisar	√	√	√
10.	Ljupco	Vigan	Demir	√	-	-

11.	Angelovski Ivan Stojanov	Flores	Hisar Skopje	√	√	√
12.	Valentina Kolar Jovanovska	Balkan Biosert	Skopje	√	√	√
13.	Boban Dimovski	Balkan Biosert	Skopje	√	√	√
14.	Vecko Kotovski	Angromarketing	Demir Hisar	√	-	-
15.	Elizabeta Risteska	Angromarketing	Demir Hisar	√	√	√
16.	Boris Gjorgjev	Agrotikves	Kavadarci	√	√	-

As it can be seen from the tables, the representatives from Dusan Ciric (Done Klincarov), Vigan (Ljupco Angelovski) and Angromarketing (Vecko Kotovski) excused themselves the second day. Also representative from Agrotikves (Boris Gjorgiev) excused himself at the third day. All other participants were constantly present during whole training. We have to emphasize that all of them were taking active participation and the opportunity for interactivity was maximally used.

All of them were divided in 3 HACCP teams which were preparing HACCP plans for their companies (see Annex 6). After each stage and task each HACCP team was explaining their own results and points of view to all other training participants. Each team member had opportunity to present group work (see Annex 7). Each and every participant was taking part in discussions, but the most noticeable were: argument discussions, objectivity, openness for different views and understanding of specific problems.

TRAINING MATERIALS

As a training material each participant received HACCP Guide for Implementation, Modification, Maintenance, Inspection and HACCP Certification, developed by Prof. Vladimir Kakurinov and Prof. Biljana – Petanovska Ilievska. This Guide is based on Codex Alimentarius Commission *Guidelines for application of the Hazard Analyses Critical Control Points* harmonized and referenced according international food safety requirements and contains detailed and with simple language explained all necessary HACCP steps and principles needed for HACCP Implementation, Modification, Maintenance, Inspection and Certification. All of the steps are followed with practical examples, and on the end there are blank forms and tables where each training participant can practice the same steps on different products.

This material allowed to each participant to follow the presentations more accurately and to have argument discussions.

TESTING AND CERTIFICATES

Trainees were examined through written test with 23 questions that could be answered with multiple choices of answers. Questions were taken

from the content of training materials (see Annex 3). Test was individual and in timeframe of 75 minutes (see Annex 8).

Purpose of this testing was to check gained knowledge of all participants and their ability to prepare HACCP plan, implement, maintain and modify HACCP system from the one hand, and to check how were successful trainers to transfer their knowledge to all participants from the other hand.

Test results are presented in Table 3.

Table 3. Test results from the training.

No.	Company	Surname and Name	City	Total points	Right answers	Wrong answers	% of success
1.	Organic Farmer Federation	Goran Kolev	Skopje	23	17,3	5,7	75,22
2.	Organic Farmer Federation	Ljubica Kimova	Skopje	23	18,0	5,0	78,26
3.	Ledra Agro	Frangov Risto	Gevgelija	23	10,8	12,2	46,85
4.	Ledra Agro	Goce Mojanoski	Gevgelija	23	16,0	7,0	69,45
5.	Dusan Ciric	Kristina Cadamova	Rosoman	23	16,1	6,9	70,00
6.	Dusan Ciric	Slavica Angelkova	Rosoman	23	16,3	6,7	70,87
7.	Vigan	Vesna Prpuskovska	Demir Hisar	23	7,9	15,1	34,34
8.	Vigan	Julijana Mijakovska	Demir Hisar	23	20,0	3,0	86,84
9.	Flores	Ivan Stojanov	Skopje	23	18,4	4,6	80,00
10.	Balkan Biosert	Valentina Kolar Jovanovska	Skopje	23	18,0	5,0	78,15
11.	Balkan Biosert	Boban Dimovski	Skopje	23	22,0	1,0	95,65
12.	Angromar keting	Elizabeta Risteska	Demir Hisar	23	19,1	3,9	83,00
Total				23	16,65	6,35	72,39

Minimum limit for passing this test is 60% success. As it can be seen from the results all present participants except Vesna Prpuskovska from Vigan (34,34% success) passed the test. Average correct answers were 16,65 or total average percent of success is 72,39. This is satisfactory percentage and speaks for itself about the quality of training and commitment of participants.

TRAINING EVALUATION

All participants were evaluating training according to AgBiz program and CEED questionnaires. Here are summarized oral remarks and comments given by participants at the end of the training.

Table 11. Summarized trainee's remarks and comments.

No.	Training remarks	Number of answers	%
1.	Useful, educational and great satisfaction from the training and trainers	12	100
	Training comments		
1.	Need for additional and in-depth trainings	9	75
2.	Need for dissemination of this training to other people/cities/regions	12	100
3.	Need for more time (at least full 3 days) for this training	11	91,6

Comments: All training participants are satisfied with training content, educational value and usefulness of this training. Big percentages of them (75%) are requiring in-depth training and feels that this training should be visited by other companies in other cities/regions. All the participants said that this training is the first one where they can really understand HACCP system and its real meaning and application in their plants. 91,6% of them require more time for training and explanation for that is given in comment for training timetable (Table 4).

CONCLUSION AND RECOMMENDATIONS

Generally speaking participants at the training expressed great pleasure that this type of practical training is supported by AgBiz program and implemented by accredited and experienced trainers. This practical approach allowed them for the first time to learn how HACCP plan is prepared and how it is designed especially for different/their companies. They said that this is precious value for them, because gained knowledge on the personal level can be transferred to their organization/companies.

Also, the general opinion is that this training should be disseminated to more companies/persons in different regions, and that the next step should be new in-depth trainings.

At the end, all participants expressed gratitude to the AgBiz program for subsidizing this training which is of a great importance for them and their companies.

In this context, we would like to stress that many of the companies that were invited to participate in this training could not accept this opportunity due to the fact that the participation fee was too high for them or the timing was bad due to high season. This resulted with participation of lower number of companies than the previously agreed minimum number of participants required to have a productive and cost effective training. We have to stress

that in support of our previous and future cooperation with the AgBiz program, CEED Macedonia accepted to decrease its overhead to 10% instead of the planned 15% and organized this training without covering its ongoing expenses of operating a business nor the actual expenses related to the organization of this particular training. In other words, we generated loss with this activity.

Our recommendation for the AgBiz program for organization of the future trainings would be to show more flexibility and subsidize 50-70% of the participation fee for companies coming from the five supported value chains. Organization of more affordable training programs adjusted to the specific needs of the targeted groups would certainly increase the interest of the companies to participate in it.

ANNEX 1

AGENDA

I- day: Wednesday, 24.09.2008		
08:45	09:00	<i>Registration</i>
09:00	09:20	Opening speeches: <ul style="list-style-type: none"> • Representative from the AgBiz Program • Representative from CEED Macedonia • PhD Vladimir Kakurinov
09:20	10:00	Food safety systems/standards, implementation, accreditation and certification - PhD Vladimir Kakurinov
10:00	10:15	<i>Coffee break</i>
10:15	12:00	Pre-requirements for the implementation of the HACCP-system in food companies – Aleksandra Markovska
HACCP teams part		
12:00	13:00	Assembling the HACCP-team - PhD Vladimir Kakurinov
13:00	14:00	<i>Lunch Break</i>
14:00	15:00	Product/s description – PhD Biljana Petanovska Ilievska
15:00	16:00	Preparing the flow diagram of the food processing line – Aleksandra Markovska
16:00	16:15	<i>Coffee break</i>
16:15	18:00	Potential hazards in food processing (HA - Hazard Analysis) <ul style="list-style-type: none"> • microbiological hazards – PhD Vladimir Kakurinov • chemical-physical hazards - PhD Biljana Petanovska Ilievska

II- day: Thursday, 25.09.2008		
HACCP teams part		
08:45	09:00	<i>Registration</i>
09:00	11:45	How to select a critical control point (CCP) – Aleksandra Markovska
11:45	12:00	<i>Coffee break</i>
12:00	13:30	Establishment of preventive measures with critical limits for each critical control point (CCP) <ul style="list-style-type: none"> • for microbiological hazards – PhD Vladimir Kakurinov • for chemical-physical hazards - PhD Biljana Petanovska Ilievska
13:30	14:30	<i>Lunch Break</i>
14:30	15:30	Establishment of procedures for critical control points (CCPs) monitoring – Aleksandra Markovska
15:30	15:45	<i>Coffee break</i>
15:45	17:00	Establishment of corrective actions for critical control points (CCPs) - PhD Biljana Petanovska Ilievska

III- day: Friday, 26.09.2008		
HACCP teams part		
08:45	09:00	<i>Registration</i>
09:00	10:00	Establishment of procedures to verify that the HACCP system is working effectively – Aleksandra Markovska
10:00	10:30	Establishment of effective documentation concerning all procedures and records appropriate to the HACCP system and its application - PhD Vladimir Kakurinov
10:30	10:45	<i>Coffee break</i>
10:45	11:15	Training results summarizing and conclusions - PhD Vladimir Kakurinov
11:15	12:30	Test for the participants
12:30	13:30	Joint Lunch and the end of the workshop

ANNEX 2

TRAINING CONTENT

1 day

Module 1 - Opening speech and presentation of the training objectives

Objective

To introduce the trainees to the objectives of training, HACCP management system and general principles.

Suggested method of instruction

- Lecture

Aids

- Handout
- Power Point presentation

References

- The use of hazard analysis critical control point (HACCP) principles in food control.* Report of an FAO Expert Technical Meeting, Vancouver, Canada, 12-16 December 1994. FAO Food and Nutrition Paper No. 58. Rome, FAO/1995.

Time frame

- 10 minutes

Content

- HACCP training objectives
- General rules applicable in whole process of food production
- Hazard Analysis Critical Control Point – HACCP
- Glossary
- HACCP general principles

Learning outcome

Trainees have to be introduced to training objectives, HACCP system and its principles and clearly to define all phrases, which will be used during training.

Module 2 - Pre-requirements for the implementation of the HACCP-system in food companies

Objective

To introduce the trainees with necessary pre-requirements for HACCP implementation, international legislative, principles of GMP, and basic requirements for equipment, hygiene and primary production.

Suggested method of instruction

- Lecture

Aids

- Power Point presentation

References

- Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application* [Annex to CAC/RCP 1-1969, Rev 3 (1997)] - reproduced below in shaded boxes
- HACCP in microbiological safety and quality*. International Commission on Microbiological Specifications for Foods (ICMSF). Oxford Mead, UK, Blackwell Scientific Publications, 1988.

Time frame

- 105 minutes

Content

- Necessary pre-requirements for HACCP implementation
- International legislative
- GMP
- Basic requirements for equipment, hygiene and primary production
- Questionnaire

Learning outcome

Trainees has to be introduced with primary agricultural production, or incoming materials, pre-requirements necessary for HACCP system implementation and basic requirements which will allow realistic evaluation of current situation at their companies.

Module 3 - Assemble the HACCP team

Objective

To familiarize the trainees with the appropriate composition and knowledge required for an effective HACCP team

Suggested methods of instruction

- Lecture
- Exercise

Aids

- Flip chart
- Handout
- Power Point presentation

Time frame

- 30 minutes lecture
- 30 minutes exercise

Content

- The HACCP team
- Training requirements
- Resources

Approach

The instructor should identify three to four "HACCP teams" from among the participants to complete the exercises in the following modules.

Exercise

The instructor should have the trainees consider and identify the appropriate composition and areas of knowledge of an HACCP team and list these on flip charts or overhead transparencies.

Learning outcome

Participants should be able to identify the appropriate composition and knowledge required of an HACCP team.

Module 4 - Product/s description**Objective**

To introduce the trainees to the importance and considerations of a complete product description and the identification of product ingredients and packaging materials

Suggested methods of instruction

- Lecture
- Exercise

Aids

- Handout
- Flip chart
- Power Point

Reference

- Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application* [Annex to CAC/RCP 1-1969, Rev. 3 (1997)]

Time frame

- 30 minutes lecture
- 30 minutes exercise and review

Content

- Product description
- Identification of intended use
- Examples/Forms 1 and 2

Exercise

The instructor should have each of the "HACCP teams" formed in Module 3 select a product/s and describe all of the appropriate characteristics of the product/the ingredients and the packaging materials using Forms 1 and 2. Each team should then present its findings using flip charts or overhead transparencies.

Learning outcome

Trainees should be aware of the importance and considerations of a complete product description and of the identification of product ingredients and packaging materials as a basis for understanding the product and for identifying possible hazards.

Module 5 - Preparing the flow diagram of the food processing line

Objective

To introduce trainees to the construction of an accurate and complete flow diagram and plant schematic and to its importance in understanding the specific processing operation and in identifying potential hazards associated with the flow of raw materials from the point at which they enter the plant, through processing to departure

Suggested methods of instruction

- Lecture
- Exercise

Aids

- Flip chart
- Handout
- Power Point

Reference

Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application [Annex to CAC/RCP 1-1969, Rev. 3 (1997)]

Time frame

- 30 minutes lecture
- 30 minutes exercise and review

Content

- Flow diagram
- Plant schematic
- On-site confirmation of flow diagram and plant schematic
- Examples, Forms 3 and 4

Exercise

The instructor should have each of the "HACCP teams" select a specific product with which the trainees are familiar and prepare a theoretical flow diagram for the product using Form 3. Each team should select a different product, and where possible the different products should represent different sectors of the food industry in the country or region of training.

Learning outcome

Trainees should understand the importance of the construction of an accurate and complete flow diagram and plant schematic in understanding the specific processing operation and in identifying potential hazards associated with the flow of raw materials from the point at which they enter the plant, through processing to departure. The trainees should be able to construct a complete flow diagram and plant schematic.

Module 6 - Potential hazards in food processing (HA - Hazard Analysis)

Objective

To provide the trainees with the necessary knowledge and abilities to identify all potential hazards in a process and to consider the appropriate control measures

Suggested methods of instruction

- Lecture
- Exercises

Aids

- Flip chart
- Handout
- Power Point

Reference

- Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application [Annex to CAC/RCP 1-1969, Rev. 3 (1997)]*

Time frame

- 30 minutes lecture
- 30 minutes Exercise 1
- 35 minutes Exercise 2

Content

- Hazard analysis
- Potential hazards
- Sources of information for hazard analysis
- How to conduct a hazard analysis
- Control measures
- Hazard assessment

- Examples, Forms 2,3 and 5 to 7

Exercises

- The instructor should lead a brainstorming session to prepare a list of potential biological, chemical and physical hazards. Flip charts or overhead transparencies should be prepared showing all biological, chemical and physical hazards identified.
- The instructor should have each "HACCP team" identify the potential hazards associated with all aspects of their selected products and their manufacture. The teams should then present their results on Forms 5, 6 and 7 using flip charts or overhead transparencies.

Learning outcome

The trainees should have the necessary knowledge and abilities to identify all potential hazards in a process and to consider the appropriate control measures.

2 day

Module 7 - How to select a critical control point (CCP)

Objective

To provide the trainees with the necessary knowledge and abilities to determine critical control points in the HACCP system

Suggested methods of instruction

- Lecture
- Exercises

Aids

- Flip chart
- Handout
- Power Point

Reference

- Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application [Annex to CAC/RCP 1-1969, Rev 3 (1997)]*

Time frame

- 30 minutes lecture
- 30 minutes exercise
- 30 minutes reports on exercise

Content

- Critical control points
- Review of identified hazards

- Identification of CCPs
- Parameters attached to CCPs
- Examples, Forms 5 to 9

Exercise

The instructor should have each "HACCP team" complete Form 8 and identify the critical control points in their selected operation. Each team will then present a report using overhead transparencies of the completed Form 8, explaining the team's rationale for answering the associated questions and the determination of CCPs.

Learning outcome

The trainees should have the necessary knowledge and abilities to determine critical control points, which should be demonstrated during their reports on the exercise of using the Codex decision tree to determine critical control points for their selected operations.

Module 8 - Establishment of preventive measures with critical limits for each critical control point (CCP)

Objective

To provide the trainees with the necessary knowledge and abilities to establish critical limits for the critical control points in the HACCP system

Suggested methods of instruction

- Lecture
- Exercises

Aids

- Flip chart
- Handout
- Power Point

Reference

Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application [Annex to CAC/RCP 1-1969, Rev. 3 (1997)]

Time frame

- 30 minutes lecture
- One hour exercise and reports on exercise

Content

- Critical limits
- Operating limits
- Example, Form 10

Exercise

The instructor should have each "HACCP team" complete the "Critical limits" column on Form 10 and identify the critical control points in their selected operation. Each team will then present a report, using overhead transparencies, explaining the critical limits established for each CCP.

Learning outcome

The trainees should have the necessary knowledge and abilities to establish critical limits for each CCP.

Module 9 - Establishment of procedures to monitor the critical control points

(CCPs)

Objective

To provide the trainees with the necessary knowledge and abilities to establish a monitoring system for each critical control point in the HACCP plan

Suggested methods of instruction

- Lecture
- Exercise
- Power Point

Aids

- Handout
- Flip chart
- Power Point

Reference

Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application [Annex to CAC/RCP 1-1969, Rev 3 (1997)]

Time frame

- 20 minutes lecture
- 40 minutes exercise and reports on exercise

Content

- Monitoring
- Design of a monitoring system
- Example, Form 10

Exercise

The instructor should have each "HACCP team" complete the monitoring procedures column on Form 10 and identify the monitoring procedures for each CCP. Each team will then present a report, using overhead transparencies, explaining the monitoring procedures.

Learning outcome

The trainees should have the necessary knowledge and abilities to establish monitoring procedures for each CCP established.

Module 10 - Establishment of corrective actions for critical control points (CCPs)**Objective**

To provide the trainees with the necessary knowledge and abilities to establish effective procedures for corrective actions when there are deviations from critical limits at critical control points

Suggested methods of instruction

- Lecture
- Exercise
- Power Point

Aids

- Handout
- Flip chart
- Power Point

Reference

Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application [Annex to CAC/RCP 1-1969, Rev. 3 (1997)]

Time frame

- 15 minutes lecture
- 60 minutes exercise and reports on exercise

Content

- Establishing corrective actions
- Deviation
- Corrective action procedures
- Deviation and corrective action records
- Deviation procedures
- Example, Form 10

Exercise

The instructor should have each "HACCP team" complete the deviation procedures column on Form 10 and identify the deviation procedures for the CCPs. The teams should also consider and describe generic deviation procedures that are applicable to all critical limit deviations. Each team will then present its report, using overhead transparencies, explaining the deviation procedures established for each CCP.

Learning outcome

The trainees should have the necessary knowledge and abilities to establish effective deviation and corrective action procedures to be followed in the event of deviations from critical limits at CCPs.

3 day

Module 11 - Establishment of procedures to verify that the HACCP system is working effectively

Objective

To provide the trainees with the necessary knowledge and abilities to establish procedures for verifying control at each of the CCPs and for validating the adequacy of the overall HACCP plan

Suggested methods of instruction

- Lecture
- Exercise

Aids

- Flip chart
- Handout
- Power Point

Reference

- Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application [Annex to CAC/RCP 1-1969, Rev. 3 (1997)]*

Time frame

- 30 minutes lecture
- 30 minutes exercise and reports on exercise

Content

- Verification
- Description of verification activities
- Role of microbiological testing in HACCP verification
- Verification frequency
- Records of verification
- Regulatory verification

Exercise

The instructor should have each "HACCP team" complete the verification column on Form 10 and identify the verification procedures for each CCP. The teams should also identify procedures for validating the HACCP plan. Each team will then present a report, using overhead transparencies, explaining the verification procedures established for each CCP and for validation of the HACCP plan.

Learning outcome

The trainees should have the necessary knowledge and abilities to establish verification procedures for each CCP and for the HACCP plan.

Module 12 - Establishment of effective documentation concerning all

procedures and records appropriate to the HACCP system and its application

Objective

To provide the trainees with the necessary knowledge and abilities to establish appropriate documentation of the HACCP plan and records of the HACCP system

Suggested methods of instruction

- Lecture
- Exercise

Aids

- Flip chart
- Handout
- Power Point

Reference

- Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application [Annex to CAC/RCP 1-1969, Rev 3 (1997)]*

Time frame

- 30 minutes lecture
- 30 minutes exercise and reports on exercise

Content

- Documentation and record keeping
- Support documents
- Records generated by the HACCP system
- Documentation of methods and procedures used
- Records of employee training programmes
- Example, Form 10

Exercise

The instructor should have each "HACCP team" establish the documentation required for the HACCP plan, complete the HACCP record column on Form 10 and identify the specific records that should be kept for each CCP in the HACCP system. Each team will then present a report, using overhead transparencies, showing the documentation of the HACCP plan and the HACCP records established for each CCP in the HACCP system.

Learning outcome

The trainees should demonstrate the necessary knowledge and abilities to establish documentation of the HACCP plan and records of the HACCP system.

ANNEX 3

TEST FOR TRAINEES (CONTENT)

Objective

To test gained knowledge of participants and ability of trainers to transfer their knowledge to them.

Method

- Test

Aids

- Written test

Time frame

- 75 minutes

Content

- Whole training content

Test outcome

Training participants has to demonstrate knowledge necessary for HACCP Implementation, Maintenance and Modification in Food Industry.

ANNEX 4

Test for trainees

Participant name _____ Company - _____

This is a multiple-choice test where more than one answer could be right.
Please answer the following questions.

1	What are pre-requirements for safety food processing?	Training and staff motivation	
		Defined quality of the final product	
		Operational procedures for each process step	
2	Raw material list contains:	Packaging material	
		Water	
		Best before	
3	Finished product list don't contains:	Water	
		Packaging material	
		Best before	
4	Why I wash my hands before I come in contact with food during production?	Because of owner demand	
		I want to prevent food contamination	
		I want to protect my hands	
5	Why I'm wearing protective hat when I'm at production line?	To protect my hair from bad smell	
		Because hair can contaminate food	
		Because hair and scull skin are containing large number of bacteria	
6	What is HACCP?	A system for self control in a food processing company	
		A method for measuring the dirt in the company	
		A European Regulative	
7	Is it possible microorganisms to be transferred from items to food and equipment?	Yes	
		No	
8	What is part of the HACCP system	Documentation	
		Critical limits and corrective actions	
		Methods for financial situation of company	
9	Maximum number of people in small company HACCP team is:	3	
		6	
		9	
10	Sporogenous bacteria are most frequently present in:	Dry environment	
		Humid environment	
		Acid environment	
11	Hepatitis is caused by	Bacteria	
		Virus	
		Protozoa	
12	Antibiotics can be found in:	Milk	

		Meat	
		Vegetables	
13	Production limits are	Less strict than critical limits	
		More strict than critical limits	
		Same as critical limits	
14	Production adjustments are taken when there was deviation at	Critical limits	
		Production limits	
		Always when we think is necessary	
15	Corrective actions are taken when there was deviation at	Critical limits	
		Production limits	
		Always when we think is necessary	
16	As a part of HACCP program we should keep:	Personal notes	
		Employees training records	
		Production costs	
17	Which chemicals are potential hazard?	Laboratory chemicals, cleaning materials, lubricants	
		Pesticides, antibiotics, heavy metals, hormones etc.	
		All chemicals which can be found in/at food above the levels of critical limits	
18	How we control chemical hazard?	With raw material analysis	
		With finished product analysis	
		With analysis at every production step	
19	What is CCP?	Every step/procedure which is controlled	
		Every step/procedure which have influence on product quality	
		Step/procedure which is controlled and is most important for prevention, elimination or hazard reduction to acceptable level	
20	How we control physical hazard?	With Good Manufacturing Practice (GMP)	
		With raw material control	
		With raw material, production process and environment control	
21	What is deviation?	When critical levels are exceeded	
		When production levels are exceeded	
		When something wrong is happening	
22	What does it means food safety?	Food quality	
		Food without pathogens	
		Food which doesn't cause illnesses and injuries to consumers	
23	What means additional contamination?	Repeated infection (reinfection)	
		Contamination with pathogens	
		Contamination with chemical and physical hazards	

Right answers	Wrong answers	Percentage of success	Controlled by

Candidate:

Passed

Failed