HACCP Plan Implementation for Food Safety for Startup Business: Fruit Combining

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Abstract: HACCP is a tool to assess hazards and establish control systems that focus on preventative measures rather than relying mainly on end-product testing. Seven basic principles underline the concept. These principles include an assessment of the inherent risk that may be present from harvest through ultimate consumption. Six hazard characteristics and a ranking schematic are used to identify those points throughout the food production and distribution system whereby control must be exercised in order to reduce or eliminate potential risks. A guide for HACCP plan development and critical control point (CCP) identification are noted. Further, the document points out the additional areas that are to be included in the HACCP plan: the need to establish critical limits that must be met at each CCP, appropriate monitoring procedures, corrective action procedures to takes if a deviation is encountered, record keeping, and verification activities.

1 INTRODUCTION

Aware of a large number of deficiencies or absence of food safety assurance is obtained from conventional inspection and testing as well as examples of many products. PT Redceri Indonesia applies the concept of HACCP (Hazard Analysis Critical Control Point), i.e. food safety assurance system based upon a realization that hazard (hazard) potentially arising at various points or stage production, and must be controlled to prevent the occurrence of such hazards. HACCP focuses on hazards in a food commodity that if not controlled could affect public health and food product design, processing, commercialization, provision and the conditions controlling the hazards.

HACCP systems is not a food safety assurance systems without the risk or zero-risk. However, HACCP is designed for minimizing the risk of food safety hazards in the food production process. HACCP systems also is a risk management tool that is used to protect food supply chains and production processes towards contamination hazards, chemical and physical purity.

The benefits of the application of the HACCP system for PT Redceri Indonesia is as follows:

- Prevent or detect raw materials or unsafe ingredient before entering the production system.
- Keep the issue not be great and handled by implementing early detection.
- Be aware of the presence of contamination at facilities that are used together for various products.
- Reduce the detention of products internally and the destruction of the products.
- Prevent dependence testing against a final product that can cause the issue of unsafe products.

Application of HACCP in the food industry are specific for each type of product, every process, every factory. Besides the basic prerequisite is required in the form of application of GMP (Good Manufacturing Practice) and SSOP (Sanitation Standard Operating Procedures). An important factor for the success of the application of HACCP in the food industry is largely determined by the commitment of management to provide safe food.

In the implementation of HACCP, PT Redceri Indonesia implementing measures systematically in the 12 steps, which consists of five initial steps of preparation followed by seven the next step which is the seven HACCP principles. As for the stages of these steps are:

Stage 1 : Drafting HACCP team
Stage 2 : Description of products
Stage 3 : Identifying the purpose of the use of

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Stage 4 : Compiling flowchart
Stage 5 : Confirm the flowchart in roomy
Stage 6 : Conduct a hazard analysis
Stage 7 : Determine critical control points (CCP)
Stage 8 : Determine the critical limits for each CCP
Stage 9 : Specify a monitoring or monitoring system for each CCP
Stage 10 : Specify the action correction if there is a deviation from the limit of critical
Stage 11 : Specify the verification procedure
Stage 12 : Specify the system documentation and record keeping systems or recording

2 THE FORMATION OF THE HACCP TEAM

The first step in the preparation of HACCP is forming a team of several members with the educational background or extensive work experience (multidisciplinary). The number of HACCP Team consisting of people from various parts of 5-6 or academic backgrounds such as microbiology, sanitation experts, chemists, engineers, part purchase, part of the QA/QC. People who are involved in the ideal team is included: (1) Staff of Quality Assurance or Quality Control Staff; (2) personnel Production Section (understand the raw materials and the production process); and (3) personnel of the technical/Engineering Section; and (4) Microbiological Experts. One Member is chosen as the next Chairman of the team. The Chairman of the team should already understand the preparation of HACCP plans or between teams already exist that follow HACCP training and/or auditing HACCP. The team formed in charge of drawing up an HACCP plan. For it, teams should meet regularly to conduct discussions and brainstorming in the HACCP plan.

For PT Redceri Indonesia, HACCP team consists of Section Head of Research and Development, Production Supervisor, QA/QC Supervisor (as Chairman), Section Head of operations, Purchasing Staff and some of the employees as members.

3 PRODUCT DESCRIPTION

The Second Step in the preparation of HACCP plans are describing the product. HACCP team should choose which products to be made its HACCP plan if you have more than one product type.

The information must exist at the time described the product include composition, characteristics of finished products, processing methods are applied to the product (aw, pH, moisture content), while preserving the method applied to such products, primary packaging, packaging for transportation, storage conditions, method of distribution, the recommended shelf life, special labeling, usage instructions, special supervision in the distribution and where the product will be sold.

One example of PT Redceri Indonesia product description for product Redceri Puree Fruit Jelly Orange can be seen in the following table:

Table 1. Description of Product Redceri Orange

Description Parameter	Information
Product name	Redceri Pure Fruit Jelly Oranqe
Composition	89 ml of water, 30 grams of citrus fruit, 22 grams of real sugar and 1 gram kareganan, konyaku and natural fruit flavorings
Product Characteristics	Shape of adjusting plastic cup packaging with volume of 110 ml, product height of 25 mm, equipped with a jelly spoon
Processing Method	Cooking
Primary Packaging	PP plastic cup (poly propylene)
Secondary Quotation	Single layer carton size 465x190x55 mm
Storage Conditions	Temperature 8-14 ° C; avoid direct sun contact Room temperature 1 month: temperature 8-14 ° C
Save age	6 months
Distribution Method	Delivery with closed box cars

4 THE DETERMINATION OF THE USE OF THE PRODUCT

At this stage, the team identifies how to use HACCP products by consumers, serving, as well as a group of consumers who consume the products. Important to know whether the product will be directly consumed (ready to eat) or be cooked beforehand by the consumer. It must be remembered there are high-risk consumer groups which include infants, the elderly, immuno compromised groups (pregnant women, sick people, people who are undergoing chemotherapy, AIDS patients).

For product Redceri Puree Fruit Jelly Orange, descriptions of the users of its products is as follows: can be in direct consumption by consumers from all circles of society.

5 PRODUCT FLOW DIAGRAM

Process flow diagram was drawn up with the aim to describe the entire process of production. Flowchart of this process in addition to beneficial to assist in performing the HACCP teamwork, can also serve as a guideline for other person or institution who would like to understand the process and verification.

Flowchart should be covered all the stages in the process are clearly concerning:

- The details of the whole process of activities including inspection, transportation, storage and a delay in the process,
- The materials to be included in such a process of raw materials, packaging materials, water, air and chemicals,
- The output of the process such as waste: packaging, raw material, product, product reprocess in progress (rework), and products that are disposed of (rejected).

6 VERIFY THE FLOWCHART IN PLACE

In order for a process flowchart is made more complete, and by the implementation on the ground, then the HACCP team should review the operations to test and prove the accuracy as well as the perfection of the process flow diagram. When it turns out that the process flow diagram is not right or less than perfect, then to do modifications. Flowchart of the process that have been made must be documented and verified.

Flowchart process verified available, it can be done by:

- Observe the flow of the process.
- Sampling Activities.
- Interview.
- Observe routine operations/non-routine.

7 THE ANALYSIS DANGER

Hazard Analysis include activity:

- Identify hazards.
- Determine the significance.
- Identify precautions.

8 IDENTIFICATION OF DANGER

By referring to the flowchart process, HACCP team lists all dangers real or potential that might be worth is estimated to occur at each stage of the process. Such dangers include the danger of biological or chemical purity, dangers and physical danger.

Study of the risk (the significance of) the dangers

a. The possibility of danger will occur

This is usually called the chance of danger will occur. HACCP team needs to consider the likelihood (odds) for any hazards that have been identified. This inspection can be based on knowledge of HACCP team; the literature on food microbiology, HACCP, food products, and food processing, scientific research papers; the journal; supplier; food producers or processors; information regarding the withdrawal of products; consumer complaints; the areas of process, raw materials, or product that has been identified is problematic. The possibility of harm occurring in a simple can be rated as high, medium, or low.

b. The level of seriousness of the Danger

Level of the seriousness of the danger can be grouped as follows:

- The seriousness of the hazard can be established by looking at its effect on the health of the consumer and also impact on the reputation of the business.
- The seriousness of the danger can also be assessed: low, medium or high.

By combining opportunities with heavy and light danger will be able to set the level of risk (the SIGNIFICANCE of) the danger of being revealed as high, medium or low. Such an approach can be used to specify the type of control measures a must-have in place and the higher the risk of danger, then the higher the specified monitoring frequency

Thus the danger that there may also be classified based on their significance, as shown in the table below. The significance of the danger can be decided by the team with the opportunity to consider the occurrence of (reasonably likely to occur) and severity (severity) of a danger.

c. Determination of Precautions

The next step after analyzing the dangers is to identify the possible precautions to control any hazards. The team then had to consider whether precautionary measures, if any, can be applied to any danger.

Table 2. Determination Of The Significance Of Risk Or Hazard Categories

		Tingkat Keparahan (*Severity*)		
		L	M	H
Peluang Terjadi (*Reasonably like to occur*)	L	LL	ML	HL
	M	LM	MM	HM*
	H	LH	MH*	HH*

Remarks:
L = *Low*, M = *Medium*, H = *High*
* Generally considered significant and will be considered in the determination of the CCP

Precautions are all activities and activities that are needed to eliminate hazards or minimize its effects or its existence at an acceptable level. More than one precautionary measures may be needed to control the specific hazards, and more than one hazard may be controlled by specific precautions.

Precautionary measures may include actions which are chemical, physical or other controlling food safety hazards. Precautionary measures in tackling the danger can be more than one if needed. This stage is an important stage after analysis of the danger. Precautions are defined as any action that may inhibit the incidence of danger into products and refers to operating procedures are applied at each stage of processing. Due to the nature of the HACCP concept of prevention, then the HACCP system in designing precautionary measures should always be a concern. Here are a few examples of precautions:

- The separation of raw materials with a finished product in storage.
- Use a water source that already has security requirements.
- Calibration of the scales and gauges of temperature.
- using trucks that offer temperature control, etc.

Hazard analysis results poured in the table analysis of hazards. In the case of the production of Redceri Pure Fruit Jelly danger analysis table can be seen in the following table :

Table 3. Hazard Production Analysis

NO	INPUT / PROCESS STAGE	AREA	HAZARD IDENTIFICATION	JUSTIFICATION OF CAUSES	DANGER SIGNIFICANCE			PREVENTION ACT
					OPPORTUNITY	SEVERITY	SIGNIFICANCE	
1	Acceptance of Raw Materials (peeled fruit, sugar, carrageenan, flavoring)	Warehouse	B: Destructive microbes (Amylolytic)	Storage	L	L	TN	Storage SOP
			K: Heavy metals	Taken from supplier	L	L	TN	Supplier guarantee
			F: Gravel, Insects, Fruit rotten, fruit size	Taken from supplier	H	L	TN	Supplier guarantee
2	Input of clean water		B: Coliform, E. Coli	Factory water source	M	H	N	Treatment of Water Sanitation
			K: Heavy metals	Factory water source	M	L	TN	Water Analysis
			F: Gravel, Insects, Objects foreign	Factory environment	L	L	TN	Treatment of Water Sanitation
3	Reception Supplies (cup plastic, spoon jelly, lid, cardboard)		B: Microbes	Storage	L	L	TN	SOP for Storage and Supplier guarantee
			K: Heavy metals, migration	Taken from supplier	L	L	TN	Supplier guarantee
			F: Brokenness, Clarity, Perforated, cut	Taken from supplier	H	L	TN	Supplier guarantee
4	Fruit Sort	Preparation	B: Microbes, spore bacteria	Direct contact of worker	H	H	N	GMP, SSOP (worker hygiene)
			K: Chemical contamination, Dust	Air, work environment	L	L	TN	GMP, SSOP (area hygiene [work)
			F: Gravel, Insects, Objects foreign, rotten fruit	Air, work environment	L	M	N	GMP, SSOP (area hygiene [work)
5	Sugar Water Cooking		B: Bacteria, Coliform, E. Coli	Temperature and cooking time not enough	H	H	N	GMP, SSOP (hygiene worker), Cooking SOP
			K: Dust, dirt	Air, work environment	L	L	TN	GMP, SSOP (area hygiene [work)
			F: Mixer, Piping	Tools and Plant Installation	L	M	N	[GMP, Maintenance
6	Fruit preservation		B: Bacteria, Molds	Dirty container	L	H	N	[GMP, SSOP (area hygiene [work)
			K: Dirt, Dust	Air, work environment	L	L	TN	GMP, SSOP (area hygiene [work)
			F: Rotten fruit, room temperature > 18 ° C, Insects	Tools and Plant Installation	L	M	TN	[GMP, SSOP, Time control and temperature
7	Weighing		F: Foreign objects	Dirty scales, Environment	L	L	TN	Scales sanitation
8	Jelly Cooking	Production	| B: Bacteria (Salmonella)	Insufficient temperature and cooking time |	H	H	N	GMP, SSOP (worker hygiene), Cooking SOP
			| K: Dust, Dirt	Air, work environment	L	L	TN	GMP, SSOP (work area hygiene) j
			F: Mixer, Piping	Tools and Plant Installation	L	M	N	GMP, Maintenance
9	Filling		B: Bacteria, Coliform, E. Coli, ^ Salmonella	Dirty machine	H	H	N	GMP, SSOP (work hygiene), SOP Filling
			| K: Dust, Dirt	Air, work environment	L	L	TN	GMP, SSOP (work area hygiene) j
			F: Piping, Press sealing	Tools and Plant Installation	L	M	N	GMP, Maintenance
10	Weighing		F: Foreign objects	Dirty scales, Environment	L	L	TN	Sanitation scales
11	Packing	Packing	F: Foreign body contamination, Leaking	Worker	L	L	TN	GMP, SSOP (worker hygiene)
12	Storage	Logistics	F: Pests, Room temperature |> 18 ° C, Insects	Workers, factory environment	L	M	N	GMP, SSOP, Time and temperature control

Remarks :
B (biological hazards), K (chemical hazards), F (physical hazards), L (low), M (medium), H (high), TN (not real danger), N (real / significant hazard).

9 DETERMINATION OF CRITICAL CONTROL POINTS OR CCP

For each significant hazard then it must be specified whether or not included in the Critical Control Point or not. A critical control point is a stage or procedure where control can be applied and a food safety hazard can be prevented, eliminated or reduced to an acceptable level so that the risks can be minimized. In this stage can not controlled then it can cause hazard food safety HACCP team establish where the dangers are high risks can be controlled. CCP can be identified by using knowledge of the production process and all potential hazards and dangers of an analysis of the hazards and precautions. To help find where it should be true, CCP can use decision tree Diagram of CCP (CCP Decision Tree).

Decision tree diagram is a logical question series asking every danger. The answer to each question will facilitate HACCP team and bring the logically decide whether CCP or not.
In addition to decision tree diagram process, to help set can also be used decision tree CCP for raw materials and formulations.

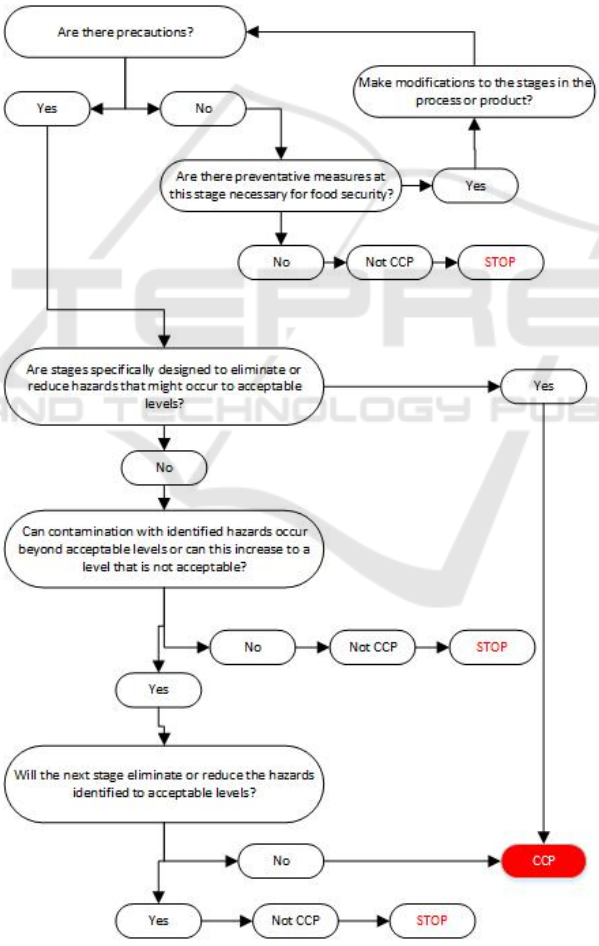

Figure 1. Decision Tree Diagram Process CCP

Examples of the results of the determination of the CCP by the HACCP team PT Redceri Indonesia Redceri on the production of Pure Fruit Jelly can be seen in the following table:

Table 4. The result of the determination CCP

INPUT / PROCESS STAGE	HAZARD IDENTIFICATION	P1	P2	P3	P4	STATUS
Acceptance of Raw	Destructive microbes	Y	Y			CCP
Materials (peeled fruit,	Gravel, Insects, Fruit rotten, fruit size	Y	Y			CCP
Input of clean water	Coliform, E. Coli	Y	N	N		NOT CCP
Reception Supplies (cup	Microbes	Y	Y			CCP
plastic, spoon jelly, lid,cardboard)	Brokenness, Clarity, Perforated, cut	Y	N	N		NOT CCP
Fruit Sort	Microbes, spore bacteria	Y	Y			CCP
	Dust	Y	N	Y	Y	NOT CCP
	Gravel, Insects, Objects , foreign, rotten fruit	Y	Y			CCP
Sugar Water Cooking	Bacteria (Salmonella)	Y	Y			CCP
	Dust, dirt	Y	N	Y	Y	NOT CCP
	Mixer, Piping	Y	N	Y	Y	NOT CCP
Fruit preservation	Bacteria, Molds	Y	Y			CCP
	Dirt, Dust	Y	N	Y	Y	NOT CCP
	Rotten fruit, room temperature	Y	N	Y	N	CCP
Filling	Bacteria, Coliform, E. Coli, Salmonella	Y	Y			CCP
	Dust, Dirt	Y	N	Y	Y	NOT CCP
	Piping, Press sealing	Y	N	Y	Y	NOT CCP
Jelly Cooking	Bacteria (Salmonella)	Y	Y			CCP
	Dust, Dirt	Y	N	Y	Y	NOT CCP
	Mixer, Piping	Y	N	Y	Y	NOT CCP
Weighing	Foreign objects	Y	N	N		NOT CCP
Packing	Foreign body contamination, Leaking	Y	N	Y	Y	NOT CCP
Storage	Pests, Room temperature	Y	N	Y	N	CCP

10 THE DETERMINATION OF CRITICAL LIMITS

For each CCP identified critical limits should be determined then. Critical limit shows the difference between products that are safe and not safe so that the production process can be managed in a secure level. These critical limits should not be passed to ensure that the CCP is effectively in control of the dangers of purity, chemical and physical. The common criteria is used to determine the critical limit is the physical criteria such as temperature, time, humidity levels, and viscosity, as well as chemical criteria such as pH, free chlorine residual, acid levels. Microbiological criteria are not used as a critical limit due to these measures take a long time. In addition to physical and chemical measurements can be used as indicators of measurement or control of purity.

To set a critical limit can use data sources from articles in the journal, regulations and Government documentation, the guidelines of the Association, publications of research at universities, manufacturers, consultants and maker of the equipment used.

11 SETTING PROCEDURE MONITORING

Monitoring procedures (Monitoring) is a stage of the observation or measurement of critical limits are planned generate the proper recording and is intended to ensure that the critical limit was able to maintain the security of the product. HACCP team set a series of monitoring procedure for each critical limits are set that covers the what, who, where, when and how the monitoring was done.

What question is answered with what should be monitored, that is based on a critical limit is defined as the temperature, time, size and so on. Answered the question why the reason that if it not monitored and the critical limit will cause certain dangers and not allow cause insecurity products. The question which should be answered at which point or at a location where the monitoring should be done. The question of how the ask method of monitoring, whether in remote, chemistry or specific measurements. Next is the question of when doing monitoring, ideally a minimum which occurs in the flow of production interruptions, or a lot, or other data which establishes a period of monitoring. Last is the question of who is doing the monitoring, which ideally is the personnel who have access to a very easy on the CCP, have the skills and knowledge of the CCP and ways of monitoring, highly trained and experienced.

By setting the critical limit is then obtained data and information for the underlying decisions, got early warning if there are any irregularities, to prevent or minimize loss of product, indicating the reasons for the problem and provide a document that the product has been produced in accordance with the HACCP plan. All documents related to record-keeping and monitoring the CCP must be signed by a person who does the monitoring and by the person in charge.

12 SET THE ACTION OF THE CORRECTIONS

Act Corrections is all the action taken if the monitoring results on CCP deviations of critical limits (losing control) because if control is lost, then the product is not eligible. In practice, there are two levels of correction actions, namely:

- immediate action (Immediate Action), i.e. the adjustment process to be controlled again and deal with the suspected products affected by the irregularities.
- the precautionary measures (Preventive Action), i.e., accountability for the action recording and action correction.

13 SET OF PROCEDURES VERIFICATION

HACCP Team devised a procedure to assure that the HACCP plan is already valid and that the HACCP plan drawn up has been implemented as planned. Verification is the application of a method, procedures, tests or other evaluation to determine the suitability of implementation with the HACCP plan. Verification gives assurances that the HACCP plan has complies with daily operations and will result in the product Redceri Puree Fruit Jelly with good quality and/or safe to consume. Specifically, the verification procedure must ensure that:

- The HACCP plan are applied absolutely right to prevent the danger of the process and product hazards.
- Monitoring Procedures and corrective actions still applied.
- Internal audit, microbiology or chemical testing on the final product.

14 DOCUMENTATION AND RECORDINGS

Either documents or data records is written evidence that an action has been performed. These documents can be used (1) for inspection and (2) to the study of lapses that resulted in the damage and find the appropriate correction action. Type of document (data records) that must be present in the preparation of HACCP plans are:

- HACCP plan and all supporting material.
- Document monitoring.
- Document Action correction.
- Document verification.

He arranges with the system documentation, then it was the preparation of HACCP plans the production of PT Redceri Indonesia. HACCP plans are subject to change in case of a change in raw materials, the layout of the factory, equipment replacement, cleaning or sanitation program changes, the application of the new procedures, changes in consumer products group and the presence of new information about a hazard. Determination of the CCP, the determination of critical limits, designation procedures monitoring, the setting of the correction action, determination of procedures verification and documentation is good next pour in the HACCP Plan table.

As for the HACCP Plan table for the production of Redceri Pure Fruit Jelly was as follows:

Table 5. HACCP Plan PT. Redceri Indonesia

PROCESS STAGE OF CCP	CRITICAL LIMITS	MONITORING PROCEDURE					CORRECTION MEASURES	VERIFICATION	DOCUMENTATION AND RECORD
		WHAT	HOW	WHERE	WHO	WHEN			
Peel fruit acceptance	There is no dirt (foreign material), standard size, not rotten and smelling, guarantee supplier (CoA based on SNI 3165: 2009 or 4230: 2009)	Physical condition of fruit peel and Certificate of Analysis (CoA)	Do examination visual and check supplier guarantee through CoA	The place reception raw material	Employee warehouse	Every arrival and reception	1. Contact staff QC / QA and decide accepted or rejected 2. Complaining to supplier	Review the form every receipt month	record of raw material acceptance
Sugar, carrageenan and flavoring acceptance	There is no dirt (foreign material), supplier guarantee (CoA based on SNI)	Physical condition and Certificate of Analysis (CoA)	Do examination visual and check supplier guarantee through CoA	The place reception raw material	Employee warehouse	Every arrival and reception	1. Contact staff QC / QA and decide accepted or rejected 2. Complaining to supplier	Review the form every receipt month	record of material acceptance raw
Cup, plastic, jelly spoon, lid and carton acceptance	There is no dirt (foreign material), contamination, NG product, guarantee supplier (CoA based on SNI)	Physical condition and Certificate of Analysis (CoA)	Do examination visual and check supplier guarantee through CoA	The place reception raw material	Employee warehouse	Every arrival and reception	1. Contact staff QC / QA and decide accepted or rejected 2. Kom plain to supplier	Review the form every receipt month	record of reception supplies
Input of clean water	1. Clarity, color, odor and contamination (attribute) 2. Standard variable clean water	Physical condition of water input	1. Do examination visual 2. Periodic test water content input	Bak shelter raw water	QA / QC inspector Spv. Maintenance	1. Every start production process 2. Periodic 6 once a month	1. Contact staff QC / QA and decide qualify for process production or not 2. Contact the team maintenance for checking conditions water treatment factory 3. Complaining to supplier	Review the form raw water checking daily	record of raw water checking
Sort fruit	There is no dirt (foreign material), not contaminated, standard size, not rotten and smells	Physical condition of fruit peel and suitability internal standard	Do examination visual and suitability standard	Fruit sorting area	QA / QC inspector Spv. Production	Every process production take place	1. Contact staff QC / QA and decide qualify for process production or not 2. Complaints and return to section warehouse 3. Accost	Review the sort form daily fruit	Sorting record fruit

Table 5. HACCP Plan PT. Redceri Indonesia (Continued)

PROCESS STAGE OF CCP	CRITICAL LIMITS	MONITORING PROCEDURE					CORRECTION MEASURES	VERIFICATION	DOCUMENTATION AND RECORD
		WHAT	HOW	WHERE	WHO	WHEN			
Fruit preservation	There is no dirt (foreign material), not contaminated, standard size, not rotten, smelling, room temperature <18 ° C, cleanliness preservative, worker sanitation and GMP is satisfying	Tub condition preservation, temperature preservative room, physical condition of fruit peel and cleanliness the worker	1. Examination bak and routine temperature 2. Do standard and media preservation 3. Observe hygiene conditions the worker	Area preservation	QA / QC inspector Operator preservation	Faithful process production take place	1. Contact staff QC / QA and decide qualify for process production or not 2. Product that failed annihilated	1. Review the form fruit preservation daily 2. Review the form sanitation checklist equipment preservation 3. Review the form temperature checklist room	1. Recording fruit preservation 2. Checklist record 3. Checklist record room temperature
Sugar water cooking and jelly	There is no dirt (foreign material), not contaminated, standard bucket raw material, tub cleanliness preservative, sanitation worker, temperature 90 ° C, time workers and GMP satisfying	Tub condition preservation, temperature and time cooking and cleanliness the worker	1. Examination temperature and time 2. Do 3. Examination scales the ingredients used 3. Observe hygiene conditions the worker	Cooking area sugar water and je	QA / QC inspector Operator cooking	Faithful process production take place	1. Contact staff QC / QA and decide qualify for process production or not 2. Product that failed annihilated 3. Accost	1. Review the form 2. Review the form sanitation checklist cooking equipment 3. Review the form temperature checklist cooking time 4. Review the form use of materials	1. Recording cooking sugar water and jelly 2. Checklist record 3. Checklist record room temperature 4. Records use of materials
Filling	Sanitation workers, sanitary filling machines, and GMP satisfying	cleanliness environment, cleanliness filling machine, and cleanliness the worker	1. Examination cleanliness of the area filling 2. Do 3. Examination cleanliness 4. Observe hygiene conditions the worker	Area filling	QA / QC inspector Spv. Production	Faithful process production take place	1. Contact staff QC / QA and decide qualify for process production or not 2. Accost 3. Product that failed annihilated	1. Review the form daily production 2. Review the form sanitation checklist filling machine 3. Review the form worker sanitation	1. Production record 2. Checklist record 3. Checklist record
Packing	Sanitation workers, sanitary packing area, and GMP satisfying	cleanliness environment, and cleanliness the worker	1. Examination cleanliness of the area packing 2. Do 3. Observe hygiene conditions the worker	Packing area	QA / QC inspector Spv. Production	Faithful process production take place	1. Contact staff QC / QA and decide qualify for process production or not 2. Accost 3. Product that failed annihilated	1. Review the form daily production 2. Review the form sanitation checklist packing area 3. Review the form worker sanitation	1. Production record 2. Checklist record 3. Checklist record room temperature
Storage	Sanitation area storage, room temperature storage and GMP is satisfying	cleanliness environment, and temperature	1. Examination cleanliness of the area storage 2. Do 3. Observe temperature storage	Area storage	Logistics staff Spv. Logistics QA / QC inspector	Every acceptance of finished goods	1. Contact staff QC / QA and decide qualify to be sent or not 2. Accost 3. The product defect indicated destroyed, after reworked	1. Review the form FG receipts daily 2. Review the form sanitation checklist storage area 3. Review the form temperature checklist room	1. Recording FG receipts 2. Checklist record storage 3. Checklist record room temperature

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