Horticultural Crops Production

Level-I

Learning Guide -22

Unit of Competence: Apply Quality Standards

Module Title: Applying Quality Standards

LG Code: AGR HCP1 M06 LO1-LG-22

TTLM Code: AGR HCP1 TTLM 1219v1

LO 1: Assess own work

Instruction Sheet	Learning Guide #22

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- Checking complete work.
- Demonstrating work activities.
- Identifying and isolating faulty service.
- Recording and reporting faults and causes.

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Check complete work against workplace standards
- Demonstrate and understand on how the work activities and complete work
- Identify and isolate faulty work or final production
- Record and report faults and any identified causes

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 1 to 4.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4”.
4. Accomplish the “Self-check 1, Self-check t 2, Self-check 3 and Self-check 4” in page -5, 10, 15 and 18 respectively.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1, in page 19
6. Do the “LAP test” in page – 20≠ (if you are ready).

Information Sheet-1	Checking complete work

1.1. Meaning of work

Work is central in many cultures, although every culture has its own values and conceptions about it. However, it seems that work is important and significant for a majority of people considering the time that individuals devote to work in their lives, the numerous functions which it accomplishes for them, and the fact that work is closely linked with other important aspects of daily life such as family, leisure, religion, and community life.

As general there is no clear cut meaning of work but every sector define work in accordance with her/his organization/institution goals.

Simply Complete work means for farmer vegetable crops, fruit crops and stimulant production are complete work b/c he/she achieve goal. So achieving of own goal is complete work for all.

1.2. Meaning of work standard

A 'standard' is a result of a particular standardization effect, approved by the recognized authority. It may take the form of a document containing a set of conditions to be fulfilled, a fundamental unit or physical constituent or an object for physical comparison.

Standardization is the process of formulating and applying the rules for an orderly approach to a specific activity - for the benefit of all - with the co-operation of all concerned and in particular for the promotion of optimum overall economy, taking due account of functional conditions and safety requirements.

Standardization is based on the consolidated results of science, technology and experience. It determines not only the basis for the present but also for future development and it should keep pace with advances.

1.3. Workplace Procedure:

Workplace procedure is a set of written instructions that identifies the health and safety issues that may happen from the jobs and tasks that make up a system of work.

1.3.1. The safe working procedure should identify:

- the producer for the task or job who will undertake the task
- the tasks that are to be undertaken
- the equipment to be used in these tasks
- the control measures that have been formulated for these tasks
- any training or qualification needed to undertake the task
- the personal protective equipment to be worn
- action to be undertaken to address safety issues that may arise while undertaking the task

1.3.2. Checking completed work against work standard

The procedure of work measurement consists of four stages.

- Define what the work is – often harder than it seems
- Determining the time in which the work can be done, that is timing the job.
- Assessing the performance of the worker being studied, is he working faster or slower than normal? that is ,rating the worker performance
- Identifying the amount of wasted time in a job, that is using allowance.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is work? (2pts)
2. Define standardization? (3pts)
3. List the four stages of work measurement procedure? (2pts)

Note: **Satisfactory rating above 7 points** **Unsatisfactory - below 7 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet- 2	Demonstrating work activities

2.1. Activities in production of horticulture crops

Production of horticultural crop is a very diverse industry, which can provide an interesting and exciting career for those seeking outdoor work involving

a. Site selection,
b. Land preparation,
c. Seed preparation,
d. Sowing,
e. Irrigation,
f. Fertilizer application,
g. Crop protection,
h. Harvesting
i. Post harvesting management and marketing of the product.

The industry also includes berry fruit growing, citrus growing, sun-drying fruit and grapes, vineyard operation and fruit harvesting.

Horticultural crop businesses produce fresh and dried fruit and vegetables for local markets, processing and exporting. The range of produce is vast and could include many varieties of different fruits, nuts and vegetables.

Many horticulture businesses operate as farms growing vegetables, while others are based on extensive orchards. Some businesses are intensive and grow fruit, vegetables and mushrooms in controlled environmental conditions.

The wide variation in methods of fruit and vegetable cultivation means that qualifications are available under either an agriculture or horticulture designation.

Many horticulture businesses operate as farms growing vegetables, while others are based on extensive orchards. Some are intensive and grow fruit, vegetables and mushrooms in controlled environmental conditions.

Responsible bodies who demonstrate the activities

a. Farmhand

A farmhand is likely to be involved in a wide range of growing and harvesting tasks under limited supervision:

- Tractor driving
- Caring for crops
- Harvesting crops
- Preparing crops for sale
- Propagating plants
- Maintaining irrigation systems

b. Production Horticulture Tradesperson

A production horticulture tradesperson has responsibility for a number of workers and planting, growing and harvesting activities:

- Operating advanced and specialized machinery
- Coordinating crop planting and maintenance
- Harvesting crops
- Processing produce
- Installing irrigation and drainage
- Controlling weeds and pests
- Constructing glasshouses and shade houses

c. Production Horticulture Supervisor

The production horticulture supervisor is likely to have significant responsibilities in managing planting, growing and harvesting activities:

- Developing a plant nutrition program
- Managing irrigation
- Developing canopy management and crop regulation programs
- Supervising crop harvesting
- Supervising machinery maintenance, supplies and services
- Operating a budget
- Promoting plant health.

d. Production Horticulture Manager

The production horticulture manager is likely to have significant responsibilities in managing growing and harvesting and related property activities:

- Managing business operations
- Developing planting programs and production plans
- Managing weed, pest and disease infestations
- Maintaining, monitoring and evaluating irrigation systems
- Managing plant health
- Managing controlled growing environments

e. Production Horticulture Business Manager

The production horticulture manager is likely to have significant responsibilities in managing growing and harvesting and related property activities:

- Managing business operations
- Developing planting programs and production plans
- Managing weed, pest and disease infestations
- Maintaining, monitoring and evaluating irrigation systems
- Managing plant health
- Managing controlled growing environments

Working at this level requires a high degree of business acumen, leadership skills and knowledge about fruit or vegetable growing, harvesting and marketing.

The qualifications for production horticulture managers who have undertaken formal training or learned their skills on the job are: a Diploma in Horticulture (Production Horticulture); or Diploma in Agriculture (Production Horticulture).

Priority skills include developing planting programs and production plans, preparing and monitoring budgets and financial reports and managing business operations

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are the responsibilities of horticulture crop production technicians? (2pts)
2. How the grower demonstrates the works? (2pts)

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	Identifying and isolating faulty products.

3.1. Identifying and isolating faults and taking corrective actions

It is commonly believed that most quality problems are caused primarily by lack of interest or care on the part of the worker, management and scarcity of materials tools and equipment operates them well, knowledge, skill gaps in the production activities department. However, it is usually not the worker who can be blamed for this, since the conditions necessary to carry out the work correctly often do not exist.

For example, instructions may be inadequate, the incoming material may be defective, the machines may not be capable of producing goods of the required quality, and proper conditions for conducting inspection of the product are not given to the workers and so on. Unfortunately the worker has no control over these factors, but they may lead to defective work.

Both design and purchase problems can be solved only by intervention by the management and workers have no control over them. One could argue that the remaining quality problems in manufacturing are caused in equal proportion by managers (by not providing adequate training for workers) and by workers by not paying adequate attention to machine settings).

Most problems come under management control, whereas some are under worker control.

The worker can only be held responsible for the defects if:

- He or she knows what he or she is supposed to do;
- He or she knows the result of his or her own work;
- He or she has the means to influence the result.

Experience shows that considerably better results can be achieved if instead it is ensured that the proper conditions exist for doing good work or getting things right the first time, for example:

- The product specification must be clear and unambiguous;
- The technical conditions must be such as to enable the quality requirements to be met, for example, the materials must be appropriate for the work and the machines must be capable of producing the required quality.
- Everyone must know what to do to prevent poor work.

- Everyone carrying out work should be able to judge whether the result of his or her work complies with the quality requirements;
- Everyone must know the consequences of poor work for the organization.

1. Internal sources to show up problems of product or service;
    - Verification of purchased product
    - Production and service provision
    - Monitoring and measurement
2. External indications, which enable to target where attention is needed;
    - Customer complaints
    - Warranty claims

The organization shall ensure that the product which does not conform to product requirements is identified and controlled to prevent its unintended use or delivery. A documented procedure shall be established to define the controls and related responsibilities and authorities for dealing with nonconforming products. Where applicable the organization shall deal with nonconforming product by one or more of the following ways:

- By taking actions to eliminate the detected nonconformity;
- By authorizing its use , realize or acceptance under concession by a relevant authority and where applicable, by the customer;
- By taking action to preclude its original intended use or application;
- By taking action appropriate to its effect, or potential effects, of nonconformity when nonconforming product is detected after delivery or use has started.

3.2. Types and work-related causes

A. Quantity of work (untimely completion, limited production)

1. Poor prioritizing, timing, scheduling
2. Lost time
    - Tardiness, absenteeism, leaving without permission
    - Excessive visiting, phone use, break time, use of the Internet
    - Misuse of sick leave
3. Slow response to work requests, untimely completion of assignments
4. Preventable accidents

B. Quality of work (failure to meet quality standards)

1. Inaccuracies, errors
2. Failure to meet expectations for product quality, cost or service
3. Customer/client dissatisfaction
4. Spoilage and/or waste of materials
5. Inappropriate or poor work methods

3.3.Work Behavior Which Result in Performance Problems

A. Inappropriate behavior (often referred to as "poor attitude")

- Negativism, lack of cooperation, hostility
- Failure or refusal to follow instructions
- Unwillingness to take responsibility ("passing the buck")
- Insubordination
- Power games

B. Resistance to change

- Unwillingness, refusal or inability to update skills
- Resistance to policy, procedure, work method changes
- Lack of flexibility in response to problems

C. Inappropriate interpersonal relations

- Inappropriate communication style: over-aggressive, passive
- Impatient, inconsiderate, argumentative
- Destructive humor, sarcasm, horseplay, fighting
- Inappropriate conflict with others, customers, co-workers, supervisors

D. Inappropriate physical behavior

- Smoking, eating, drinking in inappropriate places
- Sleeping on the job
- Alcohol or drug use
- Problems with personal hygiene
- Threatening, hostile, or intimidating behavior

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List out ways to identify product nonconformity? (2pts.)
2. What are types of work- related causes? (2pts.)
3. Explain some of the reason why problem occur during work? (2pts.)

Note: **Satisfactory rating – 6 points** **Unsatisfactory - below 6points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet-4	Recording and reporting faults and causes

4.1. Recording Information

A record is made of all the relevant facts relating to the present or proposed work on an existing job. The following information is usually needed for a work standard.

- The basic time, that is the time it takes a worker familiar with the job to do it
- Allowance to adjust for working conditions and the nature of the job.
- Performance rating.

4.2. Things to be considered when recording:

A. Receiving Materials

1. Match the packing slip to the items received and ensures that the materials are destined on tour department.
2. That you are receiving the materials indicated on the purchase order with regard to quantity and discount.
3. That the materials are in acceptable condition.
4. That terms regarding installation and/or set-up of equipment are met.

B. Receiving Reports

Whenever goods are received:

1. The person receiving the goods must document, using the administrative software, that all goods were received for each requisition before any payment can be made to the vendor.
2. Any exceptions must be noted so that partial payments can be processed or defective goods can be returned.

C. Return of Merchandise/products

When merchandise/product is received which is incomplete or defective, the supervisor will return the materials to the supplier or to the store where it was bought and make arrangements with the vendor for replacement.

D. Make an Inventory Report of the Materials

- All materials received must be listed and be reported to monitor how many materials are already on store, or damaged.
- Effective management checks are an important means of providing assurance of the integrity and security of the benefit processes.
- They are also useful in identifying training needs; indicating

4.3. Problems in horticultural production

- Poor access to inputs
- High fuel costs
- Pests and diseases
- High input costs
- Insufficient infrastructure
- Lack of finance
- Shortage of skilled labour
- Breakdown of irrigation systems were found to be the major production problems

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Discuss recording information on quality performance.(3pts.)
2. What information you record in relation to your work? (2pts.)

    b. _____

    c. _____

    d. _____

    e. _____

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Operation Sheet 1	**Identify common procedures for checking the quality of completed work against work place standards;**

Objective: to identify checking the quality of work completed

Procedure:

Step 1. Select work product to be evaluated based on documented work place standards

Step 2. Establish and maintain clearly stated criteria for the evaluation of selected work products.

Step 3. Use the stated criteria during the evaluations of selected work products

Step 4. Evaluate selected work products before they are delivered to the customer

Step 5, Evaluate work products at selected time intervals

Step 6. Identify each cases of noncompliance found during the evaluations\.

LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 8-12 hours.

Task 1: Identify common procedures for checking the quality of completed work against work place standards;

Reference

1. Baliyan, S.P. Kgathi, D.L. Production and Marketing Problems in Small Scale Horticultural Farming in Botswana [2009].
2. Gathering information: Available on:https://dps.mn.gov/divisions/ojp/forms documents/Documents/Wilder_Program_Evaluation_8.pdf
3. Food and Agriculture Organization of the United Nations, Rome, 2017
4. 2014 Rural Skills Australia, Production horticulture, Case studies, qualifications and job choices, Developed by Infinite Networks and Content by Clack Media
5. Introduction to horticulture crop production hand book

Horticultural Crops Production

Level -I

Learning Guide-23

Unit of Competence: Apply Quality Standards

Module Title: Applying Quality Standards

LG Code: AGR HCP1 M06 LO2-LG-23

TTLM Code: AGR HCP1 TTLM 1219v1

LO 2: Assess Quality of Received Articles

Instruction Sheet	Learning Guide # 23

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Checking received materials, articles or final product
- Measuring materials, articles or products
- Identifying Causes of any identified faults and corrective actions.

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Check received materials, articles or final product
- Measure materials, articles or products using the appropriate measuring instruments
- Identify Causes of any identified faults and corrective actions

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3,
4. Accomplish the “Self-check 1, Self-check t 2, Self-check 3, **in page -26, 30, and 37** respectively.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1 and Operation Sheet 2” **in page -36.**
6. Do the “LAP test” **in page – 37** (if you are ready).

Information Sheet-1	Checking received materials, articles or final product

1.1.Received inputs and output (final products)

a. **Seeds**

Is a plant embryo surrounded by a seed coat and supplied with food reserves. The seed coat, known as the testa, protects against pathogens and insects; avoid damaging the seed coat in threshing and cleaning seeds. In storing seeds, keep in mind that the embryo, made up of a plumule and radical, is alive. Harvesting mature seeds will ensure that the seed contains sufficient food reserves for high seed vigor. In dicotyledons, such as beans, food reserves are stored in the cotyledons; in monocotyledons, such as maize, it is stored in the endosperm of the seed.

A. Fertilizers

B. Chemicals

C. Products

D. Water

1.2.Techniques of checking materials against workplace standards and specifications

Quality specifications may include:

- size
- durability
- product variations
- materials
- color damage and imperfections

Table 1. Raw Material Quality Specifications for Processed Fruits and Vegetables/final product

Processed Products	Raw Materials	Quality Specifications

Fruit juices	Citrus, apple, tomato	Acidity, sugar content, flavor
Chips and fries	Potato, banana, taro	Texture, starch content, and reducing sugars
Canned products	Apple, peach, pear	Color, texture, flavor
Preserves	Various fruits: apple, peach	Sugar, pectin content, acidity
Pickles	Cucumber, olive, cabbage	Composition, sugar content, texture
Concentrates: sauce, puree	Tomato, apple	Total solids
Alcoholic beverages	Grape, apple	Fermentable sugar, acidity
Dried products	Mango, apricot	Composition, solid content
Frozen products	Pea, carrot, onion	Composition, color, texture, flavor

T**he quality of received inputs and output (final products) are checked**

T**he quality of received inputs and output (final products) are checked**

- Through visual inspection
- Thorough physical measurements
- Laboratory test
- Against design/ specification

Quality inspection

The four types of quality inspection services:

1. A Pre- production inspection: tells the grower which kind of materials, work procedure and inputs (seed, fertilizer and chemicals) will be used. .

2. A during production inspection this inspection includes from site selecting /land preparation up to harvesting activities.

3. The final random inspection (post-harvest activities inspections).

4. The container loading inspection

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are four types of quality inspection? (1pts)

2. What are the work activities/materials will be checked? (2pts)

3. List the quality specifications**? (1pts)**

Note: **Satisfactory rating above 5 points Unsatisfactory - below 5points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Measuring materials, articles or products

2.1. Measuring materials, articles or products

Measure includes those measurements which may be taken by the employee in the work place/at their work station.

The characteristic of the materials to be used for specific project must be:

a. Good quality

This is the most important factor when choosing materials to buy. Products with good quality are long-lasting and safe to use because you know that it follows certain standards before being commercialized.

b. Reliable

It means that you can be sure that it will perform its function well, will operate safely and will give the best it could give.

c. Suitable for the application/purposes

Choose the materials which are very necessary to make the project possible.

Making a list of products/materials to buy is a good trait of a wise consumer. Products which are not to be used must be crossed out.

d. Low cost

It doesn't mean that you will choose for the less expensive one and exclude the quality. Low cost means you can afford to buy the materials without hurting your pocket and assure of better quality.

The measurement of quality; generally includes the selection of a product/system to be evaluated; establishing criteria and standards for quality product/system and comparing these with organizational criteria and standards. It is also focused on the three dimensions of software quality which are:

- Process
- Product
- Resources.

One of the key issues that challenge objective quality assessment is the multidimensionality of "quality" itself. However, the assessment process can be made simple and clear using pre-defined testing strategies. Examples are fault tests and positive tests. In the latter, software's code is checked

according to what it was designed to do. Meanwhile, in the fault model, the assessment is carried out to test.

2.2 Types of measuring instruments

To investigate and control quality, one must be able to measure quality-related attributes.

Quality of produce encompasses sensory attributes, nutritive values, chemical constituents, mechanical properties, functional properties and defects.

Instrumental measurements are often preferred to sensory evaluations in research and commercial situations because they reduce variations in judgment among individuals and can provide a common language among researchers, industry and consumers.

Essentially, electromagnetic (often optical) properties relate to appearance, mechanical properties to texture, and chemical properties to flavor (taste and aroma).

Instruments can approximate human judgments by imitating the way people test the product or by measuring fundamental properties and combining those mathematically to categorize the quality.

Measuring devices are needed to provide evidence of conformity of product to determined requirements.

A documented procedure outlines the process used to ensure that monitoring and measurement to be carried out are carried out in a manner that is consistent with the monitoring and measurement requirements.

- Calibrated or verified at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards
- Adjusted or re-adjusted as necessary
- Identified to enable the calibration status to be determined
- Safeguarded from adjustments that would invalidate the measurement result
- Protected from damage and deterioration during handling, maintenance and storage

In practice, inspection and test procedures should be designed and maintained to detect problems as early as possible. The critical stages are:

- At input receiving inspection
- Crucial process points (in process inspection),
- Output (final inspection)

Specialist instruments, like thermometers, grain moisture meters. Hydrometers, may be needed for some measurements.

Other measurements are obtained by sampling, for example, soil tests, germination tests and feed analyses.

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are the characteristic of the materials to be used for specific project? (2pts)
2. List the instruments used to measure the quality of the products? (2pts)

Note: **Satisfactory rating –above 4 points** **Unsatisfactory - below 4**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	Identifying Causes of any identified faults and corrective actions

Types and work-related causes

A. Quantity of work (untimely completion, limited production)

1. Poor prioritizing, timing, scheduling
2. Lost time
    - Tardiness, absenteeism, leaving without permission
    - Excessive visiting, phone use, break time, use of the Internet
    - Misuse of sick leave
3. Slow response to work requests, untimely completion of assignments
4. Preventable accidents

B. Quality of work (failure to meet quality standards)

1. Inaccuracies, errors
2. Failure to meet expectations for product quality, cost or service
3. Customer/client dissatisfaction
4. Spoilage and/or waste of materials
5. Inappropriate or poor work methods

Work Behavior Which Result in Performance Problems

A. Inappropriate behavior (often referred to as "poor attitude")

- Negativism, lack of cooperation, hostility
- Failure or refusal to follow instructions
- Unwillingness to take responsibility ("passing the buck")
- Insubordination
- Power games

B. Resistance to change

- Unwillingness, refusal or inability to update skills
- Resistance to policy, procedure, work method changes
- Lack of flexibility in response to problems

C. Inappropriate interpersonal relations

- Inappropriate communication style: over-aggressive, passive
- Impatient, inconsiderate, argumentative
- Destructive humor, sarcasm, horseplay, fighting
- Inappropriate conflict with others, customers, co-workers, supervisors

D. Inappropriate physical behavior

- Smoking, eating, drinking in inappropriate places
- Sleeping on the job
- Alcohol or drug use
- Problems with personal hygiene
- Threatening, hostile, or intimidating behavior

2.4.1. Corrective and preventive actions

Corrective and preventive action (**CAPA**, also called **corrective action/preventive action** or simply **corrective action**) consists of improvements to an organization's processes taken to eliminate causes of

Non-conformities or other undesirable situations. It is usually a set of actions that laws or regulations require an organization to take in manufacturing, documentation, procedures, or systems to rectify and eliminate recurring nonperformance. Non-conformance is identified after systematic evaluation and analysis of the root cause of the non-conformance.

Non-conformance may be a market complaint or customer complaint or failure of machinery or a quality management system, or misinterpretation of written instructions to carry out work. The corrective and preventive action is designed by a team that includes quality assurance personnel and personnel involved in the actual observation point of nonconformance. It must be systematically implemented and observed for its ability to eliminate further recurrence of such non-conformation.

Corrective action: Action taken to eliminate the causes of non-conformities or other undesirable situations. Preventive action: Action taken to prevent further reoccurrence of such non-conformities.

CAPA is used to bring about improvements to an organization's processes, and is often undertaken to eliminate causes of non-conformities or other undesirable situations.[3] CAPA is a concept within good manufacturing practice (GMP), Hazard Analysis and Critical Control Points/Hazard Analysis and Risk-based Preventive Controls (HACCP/HARPC) and numerous ISO business standards. It focuses on the systematic investigation of the root causes of identified problems or identified risks in an attempt to prevent their recurrence (for corrective action) or to prevent occurrence (for preventive action).

Preventive action is any proactive methodology used to determine potential discrepancies before they occur and to ensure that they do not happen (thereby including, for example, preventive maintenance, management review or other common forms of risk avoidance). Corrective and preventive actions include stages for investigation, action, review, and further action is required. It can be seen that both fit into the PDCA (plan-do-check-act) philosophy as determined by the Deming-Shewhart cycle.

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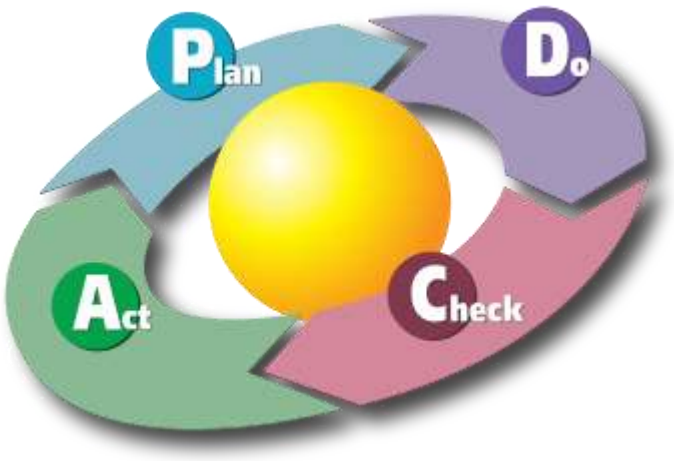


The PDCA cycle[4]

Investigations to root cause may conclude that no corrective or preventive actions are required, and additionally may suggest simple corrections to a problem with no identified systemic root cause. When multiple investigations end in no corrective action, a new problem statement with expanded scope may be generated, and a more thorough investigation to root cause performed.

Implementation of corrective and preventive actions is the path towards improvement and effectiveness of Quality Management Systems. Corrective actions are nothing but action/actions based on problem identification. The problem or a non-conformance can be identified internally through staff suggestions, management reviews, document reviews or internal audits. External leads to finding the root cause of the problem can include Customer complaints/suggestions; customer rejections; non-conformities raised in customer/third-party audits; recommendations by auditors.

A root cause is the identification of the source of the problem where the person(s), system, process, or external factor is identified as the cause of the nonconformity.

Examples of corrective actions

- Error Proofing
- Visible or Audible Alarms
- Process Redesign
- Product Redesign
- Training or enhancement/ modification of existing training programs
- Improvements to maintenance schedules
- Improvements to material handling or storage

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are the purpose of preventive and corrective actions? (**3 points**)
2. List out the cause of identified faults? (**6 points**)

a. _____

b. _____

c. _____

d. _____

3. What are the common corrective actions? (2pts.)

Note: **Satisfactory rating – 8 points** **Unsatisfactory - below 8points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Operation sheet 1.	Identifying Causes of any identified faults and corrective actions

Objectives: to identify the procedures for corrective action

Procedure:

Step 1. The effective handling of customer complaints

Step 2. Reports of product nonconformities

Step 3. Investigation of the cause of nonconformities of products

Step 4. Determination of the corrective action needed to eliminate the cause

LAP Test 1	Identifying Causes of any identified faults and corrective actions

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 8-12 hours.

Task 1: show the procedures for corrective action:

Reference

1. "Corrective and Preventive action Guidelines for Industry". Retrieved 2016-12-30.
2. Judith A. Abbott, 1999, Post-Harvest Biology and Technology, Quality Measurement of Fruit and Vegetable Volume15, pages 2007-225.
3. ISHS Acta Horticulture 379: International Symposium on Quality of Fruit and Vegetables: Influence of Pre- and Post- Harvest Factors and Technology
4. Recommended International Code of Practice for Packaging and Transport of Tropical Fresh Fruit and Vegetables (CAC/RCP 44-1995)
5. EAN-UCC (March-2003). Specification for the Identification and Traceability of Fruit, Vegetables and Potatoes
6. Vijay Kumar Mishra, T.V. Gamage : Postharvest Handling and Treatments of Fruit and Vegetables
7. International Journal for Quality research UDK- 658.5(579.3)(497.11) Short Scientific Paper (1.03)

Horticultural Crops Production

Level -I

Learning Guide-24

Unit of Competence: Apply Quality Standards

Module Title: Applying Quality Standards

LG Code: AGR HCP1 M06 LO3-LG-24

TTLM Code: AGR HCP1 TTLM 1219v1

LO 3: Record information

Instruction Sheet	Learning Guide # 24

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Recording Basic information on the quality performance.
- Maintaining records of work quality.

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Record basic information on the quality performance
- Maintain records of work quality

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3, Sheet 4 and Sheet 5”.
4. Accomplish the “Self-check 1, and Self-check 2” **in page -43 and 49** respectively.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1,” **in page -50.**
6. Do the “LAP test” **in page – 52** (if you are ready).

Information Sheet-1	Recording Basic information on the quality performance

1. Recording Information on Quality Performance

Records established to provide evidence of conformity to requirements and of the effective operation of the quality management system shall be controlled. The organization shall establish a documented procedure to define the controls needed for the identification, storage, protection, retrieval, retention and disposition of records. Records shall remain legible, readily identifiable and retrievable.

For example, these may include physical, chemical and nutritional characteristics of the final food product.

A. **Physical characteristics**.

The physical characteristics of a product include:

- Freedom from foreign matter
- Size and shape
- Color of the product
- Flavor
- Consistency
- Healthiness

B. Chemical composition

The chemical composition of product such as water, proteins, fat and mineral should be recorded. The products should be free from unwanted chemical residue

C. Nutrient composition

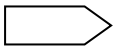
The type of amino acids present in protein, the fatty acids available in fat, and vitamins should be listed and recorded on the product

1.3.Recording production processes & outcomes:

The usually way of recording facts is to write them down but to describe in writing even a simple process can be very tedious. It is often hard to picture the whole process from a written record. Consequently, symbols are used to combine a short hand system with a system analysis. Five basic types of event in to which all work can be classified, are represented by the symbols in figure 5.1


Operation - produces or accomplishes


Inspection - verifies


Transport - moves


- Delay or interferes


Storage -holds or keeps

Fig.5.1.process chart symbols

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What type of physical characteristic of the products are recorded to evaluate the performance of quality work? (2pts.)
2. List the information to be record? (3pts)

a._____

b. _____

c. _____

d. _____

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Maintaining records of work quality.

2.1.Maintain quality performance

It require some particular commitment and action

a. Institutional dynamism

An organization need to dynamic always moving and seeking continued improvement and to institutionalize its dynamic character:

- Dynamism needs to be part of the organizational culture
- Encourage and providing support
- Listing to and carefully evaluating
- Encourage openness to change and experimentation with ideas and strategies
- Never being complacent
- Incorporating constant reevaluation including feedback
- Always being aware of the original mission

b. Long-range strategic planning

To maintain quality, an organization needs to continually look at itself over the long term

c. SWAT analysis

SWOT stands for strength weakness, opportunities and threats

- Strengths and weaknesses may be trends, rather than specifics. A level of service that is currently appropriate, for example, is not strength if it is more or less than will be needed in a year. A new program that's not ready to implement yet is not a weakness if it's unready because the developers are taking the time necessary to make it effective.
- Opportunities :
  - An organization may be able to meet other needs with its current structure

- It may be possible to expand into other areas of service, or into a larger arena (another town, another county, national instead of just one state).
- Increased funding may be available from new sources, or because of changed circumstances.
- Collaboration with other groups, leading to increased resources, may become a prospect.
- Invitations or awards offered to your organization or staff members or good press may lead to your organization being viewed as more "legitimate". Eg. Good government agricultural policy, suitable climate for horticultural crop production land and human resources

Taking advantage of any opportunity can have both positive and negative consequences for your organization, so it's important to analyze the situation carefully before committing yourself.

- **Threats (challenges):** Some of the challenges that go along with any opportunity can be truly daunting if they're not thought through carefully. Many of the opportunities above require some sort of organizational restructuring or growth, processes that are always difficult, and require a lot of planning. In becoming larger or more accepted, for instance, an organization may forget its roots or its guiding principles, and lose much of its effectiveness.

E.g. High Rf. flood, natural hazard, disease, insect, weed, market and climate change, availability of resource

Other threats may come unaccompanied by opportunity. Your organization may experience difficulty finding -- and keeping -- ongoing funding and other resources.

 Applying SWOT analysis to all the areas your organization has to deal with makes it easier both to anticipate and prepare for the negative, and to remember to identify and build on the positive.

D. Keeping at it

The single most important thing to understand about maintaining quality performance -- or maintaining an organization, for that matter is that you can never stop working at it. No effort at maintaining quality will work any longer than it is applied. No matter how institutionalized dynamism becomes, no matter how good your planning process is, they take constant care.

2.2.Maintaining Records of Work Quality

It is essential to maintain quality records not only to conform to the regulations but to also aid management in reviewing the effectiveness of our quality system and making decisions on how to improve it. The records that are maintained also demonstrate that products were manufactured to specifications and standards.

2.2.1. The quality records that are maintained include:

- Quality System documentation
- Device Master Records
- Device History Records
- Document Change Requests
- Calibration and maintenance records
- Internal Audit Reports and Management Reviews
- Customer Complaints
- Vendor Qualifications
- Purchase Orders
- Customer Orders and Contracts
- Personnel Records/Training records
- Design History Files (Validation Data)
- Field Notifications and Recalls

All records are stored in conditions to facilitate their preservation and ready access by appropriate personnel.

2.2.2. Work Areas for maintain products quality

Handling, storage, and packaging of products shall be clean, safe, and organized to ensure that they do not adversely affect quality or personnel performance. Applicable for components and products susceptible to electrostatic discharge (ESD) damage. Consider components and products such as: integrated circuits, printed wiring board assemblies, magnetic tapes and/or disks, and other media used for software or data storage.

A. Handling

The producer shall provide methods of handling product that prevent damage or deterioration.

B. Storage

The producer shall use designated storage areas or stock rooms to prevent damage or deterioration of product, pending use or delivery.

C. **Deterioration** - Where the possibility of deterioration exists, materials in storage shall be controlled (i.e., date stamped/coded) and materials with expired dates shall not be used.

D. Packaging

The producer shall control packing, packaging, and marking processes (including materials used) to the extent necessary to ensure conformance to specified requirements.

E. Preserving

The producer shall apply appropriate methods for preservation and segregation of product when the product is under the supplier's control.

F. Documentation - The producer shall establish and maintain methods to ensure that all documentation required to describe, test, install, and apply a patch has been verified and delivered.

Quality Records and six procedures as listed below as mandatory documentation:

1. Control of Documents
2. Control of Records
3. Internal Audit
4. Control of Nonconforming Product
5. Corrective Action
6. Preventive Action

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Discuss how do you maintain quality performance?(2pts)
2. Explain clearly SWOT analysis? (2pts)
3. List the records which will be maintained? (2pts)

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Operation sheet 1.	Maintaining records of work quality.

Objectives: to understand maintaining records of work quality

Procedure:

Step 1. Identification

Each record type is identified with the following information:

- Record Type Name/Description
- Record Type Part Number (When applicable)
- Originator Name (Person who issued and/or recorded the data)
- Date (The date the data was recorded)
- Status of the Item: Pass/Accept or Fail/Reject (When applicable)
- When applicable, the following shall also be recorded (when applicable):

1. Serial Number/Lot Number/Date Code, and/or Quantity
2. Product Part Number
3. Revision of Record

Step 2. Documentation Retention

Quality Records are retained per the minimum requirements specified in Appendix A – Quality Records Retention unless otherwise specified by the Customer order.

Step 3. Legibility

Quality Records shall be written or printed in a manner that ensures that the data is accurate, complete, legible, and can be read and understood by all users.

Step 4. Changing Records

When changes are required in order to make the Quality Record accurate, the change shall be performed by the person who initially recorded the original data.

Step 5. Disposition of Records

Quality Records that have been damaged/missing/illegally altered/not legible/incomplete are brought to the attention of Quality Assurance for disposition in accordance with QAP-1005, Nonconforming Material System.

Step 6. Records Disposal

Quality Records shall not be disposed of unless approved by Quality Assurance unless the minimum retention period(s) specified in Appendix A – Quality Records Retention is satisfied.

Quality Records may be disposed of after the minimum retention period is satisfied or as directed by Customer order.

Step 7. Storage

Quality Records are stored in manner so that the records will not be damaged (i.e. rain, fire, direct sun light, high humidity, etc.) or lost.

Step 8. Protection

Quality Records filed or stored in a manner suitable for the work environment and where access is available to the functional department who is responsible and Quality Assurance/ as defined in this document.

Step 9. Retrieval

Quality Records are stored in manner that makes retrieval not difficult.

Typically, Quality Records are retained in clearly labeled files/cabinets for the first year and then maybe placed into other types of controlled storage using clearly identified boxes or other means that allows the records to be retrieval in a timely manner when needed.

Step 10. Quality Assurance

Quality Assurance shall audit this process as scheduled

LAP Test	Maintaining records of work quality.

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 8-12 hours.

Task 1: show the procedures for recording work

Reference

1. Good Documentation is the Foundation of a QMS published 3 Jul 2019
2. Kristal Jewell, 2014, Quality records, p.1 of 6.

Horticultural Crops Production

Level I

Learning Guide-25

Unit of Competence: Apply Quality Standards

Module Title: Applying Quality Standards

LG Code: AGR HCP1 M06 LO4-LG-25

TTLM Code: AGR HCP1 TTLM 1219v1

LO 4: Study causes of quality deviation

Instruction Sheet 1	Learning Guide # 25

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Investigating and reporting causes of deviations from final output/service.
- Recommending preventive action.
- Identifying quality standards and causes of deviation

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Investigate and report causes of deviations
- Recommend suitable preventive action and identified causes of deviation

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 4.
3. Read the information written in the information “Sheet 1, Sheet 2, and Sheet 3
4. Accomplish the “Self-check 1, Self-check t 2, and Self-check 3” **in page -58, 63 and 70** respectively.

Information Sheet-1	Investigating and reporting causes of deviations from final output/service

B. Investigating cause's deviation of final product

Factors causing deterioration in quality of the product include length of holding time, temperature, humidity, faulty sanitation, rough handling and improper packing.

A. Length of holding time

B. Temperature

C. Humidity

D. Faulty sanitation

E. Rough handling.

F. Improper packing transporting and storing G.

G. Management practices problems

Table. 1. Product deviation report format

S/No	Product	Control Measure	Month Wise Deviations						
			Sep	Oct	Nov	Dec	Jan	Feb	Mar
1									
2									
3									
4									
5									
6									

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. discuss the causes of deviations of horticultural crop products (**5 points**)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Recommending preventive action

2.2. Recommending preventive actions.

Preventive action is an important activity. It seeks to prevent the occurrence of potential problems that could have a negative effect on your business results, products, processes, quality management system, or customer satisfaction.

Preventive action can take two forms. The first is the elimination of potential failure modes. This technique should be deployed in the advanced quality planning stage of new product or process development.

The second form of preventive action is the elimination of potential failure modes when information from processes, systems, work operations, process capability studies, yield analyses, deviations, concessions, quality records, audit reports, service reports, or customer complaints suggests a nonconformance may occur. Steps shall be taken according to documented procedures to eliminate potential nonconformance. The minimum, preventive action process should include, but not be limited to:

- Determining the steps needed to verify or deny the potential nonconformance;
- Gathering and analyzing the required data;
- Determining the effectiveness of the implemented containment actions;
- Applying controls to ensure the solution is effective in resolving the problem at an acceptable level corresponding to the risks encountered;
- Reviewing preventive action activities by management for trends and impact on procedures, products, processes, and systems

It is important adequate resources are provided for full and effective implementation of preventive action activities such resources include.

- Expertise on the part of the analysis and review staff.
- Record of all tests, audits and problems
- Instruction procedures and
- Examples of defective product for analysis

Preventive action requires the availability of a level of professional, operational, and analysis knowledge greater than that needed to just analyze and correct identified problems

Table 2. The following table shows the Quality System Elements required by ISO 9000 in the making of the final product.

	Quality System Requirements	**Contents**
1	Management responsibility	Define and document commitment, policy and objectives, responsibility and authority, verification resources and personnel. Appoint a management representative and conduct regular reviews of the system
2	Quality system	Establish and maintain a documented quality system ensuring that products conform to specified requirements
3	Contract Review	Ensure that customer's contractual requirements are evaluated and met
4	Product development	Plan, control and verify product development to ensure that specified requirements are met

5	Document control	System for control and identification of all documents regarding quality, e.g. procedures, instructions, and specifications
6	Purchasing	Ensure that purchased products conform to specified requirements
7	Product identification and traceability	System to identify and control traceability of product at all stages from raw materials through production to the final product as delivered to the customer
8	Process control	Ensure and plan the control of production which direct- ly effects quality by documented work instructions, monitoring and control of processes
9	Inspection and testing	Inspect and test incoming products, intermediate and final product; establish product conformance to specified requirements and identify non-conforming pro- ducts; maintain inspection and test records

10	Inspection, measuring and test equipment	Selection and control of equipment to ensure reliability and accuracy in measuring data
11	Inspection and test status	For the whole process the products shall be identified and clearly marked concerning test status, including indication of conformance or non-conformance
12	Control of nonconforming products	Identification, documentation, evaluation, isolation (if possible) and disposition of non conforming products
13	Corrective actions	Prevention of reoccurrence of failures (non-conformance)
14	Handling, storage packaging and delivery	Protection of the quality of the product during hand- ling, storage, packaging and delivery
15	Quality records	Records, including those which demonstrate that the specified requirements have been met, shall be control- led and maintained

16	Internal Quality Audits	Regular, planned internal audits shall be carried out, documented and recorded to verify the effectiveness of the quality system
17	Training	Training requirements at all levels shall be identified and the training planned, conducted and recorded
18	Cleaning and Disinfection	Although not required by the ISO 9000 standards, these two points should be given special attention in all food companies
19	Personal hygiene	

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Discus the preventive action of causes of deviations of the product? **5 points**)
2. What is role of preventive action? (2pts)

Note: **Satisfactory rating - 7points** **Unsatisfactory - below 7points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	Identifying quality standards and causes of deviation

3.3. What is quality standard?

Before proceeding development quality standards in agriculture, it would be useful for us to recapitulate the definition of the two words; “quality” and “standards” let us define: The definition of quality depends on the role of the people denying it. Today, there is no single universal dentition of quality. Some people view quality as “performance to standards.” Others view it as “meeting the customer’s needs” or “satisfying the customer. “Let’s look at some of the more common definitions of quality. Quality can be defined in many different ways. For instance, it can mean excellence, zero defects, uniform quality, satisfying customer needs or operational improvement. Instead of creating a pervasive and unequivocal definition of production quality, it is more relevant to examine it as a relative and contextual concept. Quality is always bound to satisfying customer needs. Defining quality is ultimately a common task for product providers and their key customer and stakeholder groups.

A ‘**standard’** is a result of a particular standardization effect, approved by the recognized authority. It may take the form of a document containing a set of conditions to be fulfilled, a fundamental unit or physical constituent or an object for physical comparison.

Standardization is the process of formulating and applying the rules for an orderly approach to a specific activity - for the benefit of all - with the co-operation of all concerned and in particular for the promotion of optimum overall economy, taking due account of functional conditions and safety requirements. Standardization is based on the consolidated results of science, technology and experience. It determines not only the basis for the present but also for future development and it should keep pace with advances.

There are several aspects of standards. These may include:

- Specifications of products and materials
- Codes of practices
- Standard test methods

- Standard terminologies, symbols, color schemes, nomenclature, notations etc.
- Standard sampling procedures
- Inspection methods
- Criteria for conformity

There are different levels of standards, which may be listed as:

- An Individual Standard
- A Company Standard
- An Association Standard
- A National Standard
- An International Standard

The level is determined by the specific interests involved in creating and using the standard in day-to-day operations.

There are various benefits to standardization. To mention a few briefly; the following are listed:

1. **To the Producer** — Rationalization of manufacturing processes, improved control of processes, high rate of production, reduction of inventories ultimate increase in sales and profits.
2. **To the Consumer** — Assurance of quality of products and services purchased, better value for money spent.
3. **To the Trade** — Minimization of delays, workable basis for acceptance or rejection of goods, opening of larger markets, reduction in cost of handling transactions.
4. **To the Technologist**— increased knowledge of properties, possibilities of application of materials, accepted methods of tests and procedures.

3.2. The process of setting quality standards

In 1990 Devon social services developed a standards for quality with the following aim: 'to stimulate and support the development of high quality social services – in the public, private and voluntary sectors – in order to ensure a range of choice to consumers'. The quality standards set out key expectations of services. They should be:

- effective and efficient and based on the needs of users;
- flexible, sensitive and responsive to the changing needs of users;
- reliable and consistent, with continuity of delivery;
- based on clear aims;
- consistent with our own agreed standards;
- continuously improved and developed by monitoring, evaluation and inspection;
- provided by people with a high standard of professional knowledge and
- practical skills;
- encouraging, enabling and maintaining of the link with the family and friends of the service users;
- supportive of users in making full use of activities and resources within local communities;
- valuing user rights to confidentiality;
- open to user participation, encouraging users to become involved in decisions affecting the care and support they receive;

3.3 . Causes of Quality Deviations

1. **Design and Specification**
    a) Vague or insufficient manufacturing particulars or illegible drawing prints
    b) Impracticable design or incompatible component and assembly tolerance.

c) Obsolete drawing being used.

2. **Machinery and equipment**
    a) Inadequate process capability
    b) Incorrectly designed tooling
    c) Worn tools
    d) Non-availability of measuring equipment
    e) Poor maintenance of machines
    f) Equipment affected by environment condition such as temperature, humidity etc;
3. **Materials**
    a) Use of untested materials.
    b) Mix-up of materials
    c) Substandard material accepted on concession because of the non-availability of correct material
4. **Operating and supervisory staff**
    a) Operator does not possess adequate skill for operating the process equipment.
    b) Operator does not understand the manufacturing drawing or instructions relating to the process.
    c) Machine setter does not know how to correctly set the machine.
    d) Careless operator and inadequate supervision
    e) Undue rush by the operator to achieve quantity targets
5. **Process control and inspection**
    a. Inadequate process controls
    b. Non availability of proper test equipment
    c. Test equipment out of calibration
    d. Vague inspection /testing instructions
    e. Inspectors do not possess the necessary skill

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are the causes of quality devotion? (2pts)
2. List the levels of standardization? (2pts)
3. Write the importance of quality standards? (2pts)

Note: **Satisfactory rating – 6 points** **Unsatisfactory - below 6 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

List of Reference Materials

1. Code of Ethics and Standards of Conduct. Available on: https://www.cfp.net/docs/default-source/for-cfp-pros---professional-standards enforcement/2017-proposed-standards/final-standards-for-public-comment.pdf?sfvrsn=2
2. https://en.m.wikipedia.org/wiki/Corrective_and_preventive_action
3. "Improvement" (PDF). Quality management principles. ISO quality. Archived (PDF) from the original on 26 June 2016. Retrieved 29 June 2016
4. Journal of the Saudi Society of Agricultural Sciences Volume 17, Issue 1, January 2018, Pages 88-96

Horticultural Crops Production

Level -I

Learning Guide-26

Unit of Competence: Apply Quality Standards

Module Title: Applying Quality Standards

LG Code: AGR HCP1 M06 LO4-LG-26

TTLM Code: AGR HCP1 TTLM 1219v1

LO 5: Complete documentation

Instruction Sheet 1	Learning Guide # 26

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Recording quality parameters.
- Recording production processes and outcome.

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this recorded. Learning Guide, you will be able to:

- Record Information on quality and other indicators of production performance
- Record production processes and outcomes

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 4.
3. Read the information written in the information "Sheet 1, and Sheet 2,
4. Accomplish the "Self-check 1, and Self-check 2," **in page -77and 79** respectively.

Information Sheet-1	Recording quality indicators.

1.1. Techniques of recording basic information & other indicators on the quality performance

Quality Management Terms:

- **Quality Improvement** can be distinguished from Quality Control in that Quality Improvement is the purposeful change of a process to improve the reliability of achieving an outcome.
- **Quality Control** is the ongoing effort to maintain the integrity of a process to maintain the reliability of achieving an outcome.
- **Quality Assurance** is the planned or systematic actions necessary to provide enough confidence that a product or service will satisfy the given requirements for quality.

1.2. Performance measurement process

Performance measurement is primarily managing outcome, and one of its main purposes is to reduce or eliminate overall variation in the work product or process. The goal is to arrive at sound decisions about actions affecting the product or process and its output.

What are performance measures?

Performance measures quantitatively tell us something important about our products, services, and the processes that produce them. They are a tool to help us understand, manage, and improve what our organizations do.

Performance measures let us know:

- how well we are doing
- if we are meeting our goals
- if our customers are satisfied
- If our processes are in statistical control
- If and where improvements are necessary.

Most performance measures can be grouped into one of the following six general categories. However, certain organizations may develop their own categories as appropriate depending on the organization's mission:

1. **Effectiveness**: A process characteristic indicating the degree to which the process output (work product) conforms to requirements. (Are we doing the right things?)
2. **Efficiency**: A process characteristic indicating the degree to which the process produces the required output at minimum resource cost. (Are we doing things right?)
3. **Quality**: The degree to which a product or service meets customer requirements and expectations.
4. **Timeliness**: Measures whether a unit of work was done correctly and on time. Criteria must be established to define what constitutes timeliness for a given unit of work. The criterion is usually based on customer requirements.
5. **Productivity**: The value added by the process divided by the value of the labor and capital consumed.
6. **Safety**: Measures the overall health of the organization and the working environment of its employees.

Fig.1. Performance indicators

1.3.Documentation requirements and Value of documentation

Documentation includes mandatory documented procedures as required by the standard and other documents such as specifications, records, etc. the important issue is that your people have the information they need to do their job. Some common terms used are:

- Work practices
- Operating practices, operating instructions or operating procedures
- Specifications and
- Drawings

The quality management system documentation shall include

a) Documented statements of a quality policy and quality objectives

b) A quality manual

c) Documented procedures required by international standard

d) Documents needed by the organization to ensure the effective planning, operation and control of its processes

e) Records required by international standards

Documentation enables communication of intent and consistency of action. Its use contributes to:

- Achievement of conformity to customer requirements and quality improvement
- Provision of appropriate training
- Repeatability and traceability
- Provision of objective evidence
- Evaluation of the effectiveness and continuing suitability of the quality management system

5.3. Types of document used in quality management system

The following types of document are used in quality management system

i. Documents that provide consistent information, both internally and externally, about the organization's quality management system: such documents are referred to as quality manuals;

ii. Documents that describe how the quality management system is applied to a specific product, project or contract; such documents are referred to as quality plans;

iii. Documents stating requirements; such documents are referred to as specifications;

iv. Documents stating recommendations or suggestion; such documents are referred to as guidelines;

v. Documents that provide information about how to perform activities and processes consistently; such documents can include documented procedures, work instructions and drawing;

vi. Documents that provide objective evidence of activities performed or results achieved; such documents are referred to as records;

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What type of documentation will you use for quality work management? (2pts)
2. What are the importance of documentation? (2pts)
3. List the key performance indicators? (1pts)

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Recording service processes and outcome

1.4. Recording outcomes

Assessment involves a process of investigation, working with the individual, their family and others to capture their story and the outcomes important to them. Following assessment, the next step is to work with the person to prioritise outcomes and agree a support plan, with identified actions for all involved.

At review, the practitioner discusses with the person whether and to what extent they have achieved the relevant outcomes. The review should include discussion of all outcomes, not just those identified in the plan. This allows both for identification of new issues and recognises the impact of any support on multiple outcomes.

Key questions might considered include:

- What are the key outcomes that are important to this person?
- What are the main issues in relation to the identified outcomes?
- What actions are required to be taken to achieve the outcomes, and when?
- What role might the person/their family/natural supports play in this?
- What other support/services might lead to improved outcomes?
- What's already working and what's been changing toward what you want?
- How will you know that you have achieved those outcomes?
- How well are the outcomes being achieved?
- What role is being played by the person/ natural supports in achieving outcomes?
- What is being done by services to support the achievement of outcomes?
- What more/else needs to happen?

Table 3. Report format for reporting the work out comes

S/No	Activities	Out come	Problems found	Possible solutions
1				
2				
3				
4				
5				
6				

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What type of work outcome are records? (3pts)

Note: **Satisfactory rating – 3 points** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____Date: _____

Short Answer Questions

Reference

2. FAMILY PLANNING PROGRAM GUIDELINES. Available on: http://www.dhs.state.il.us/OneNetLibrary/27896/documents/By_Division/DCHP/Programs/FamilyPlanning/FPPGuidelinesManual2008.pdf
3. Recording Outcomes in Care and Support Planning and Review Emma Miller and Ailsa Cook November 2011.

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Profile of trainers participate on special Horticultural Crop Production TTLM development for level I at Adama 2019