



Horticultural Crops Production

Level II

Learning Guide-21

Unit of Competence:- Implement quality systems and procedures

Module Title:- Implementing quality systems and procedures

LG Code: AGR HCP2 M05 LO1-LG-21

TTLM Code: AGR HCP2 TTLM 0120v1

LO1: Monitor quality of work out come



Instruction Sheet	Learning Guide 21
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This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

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

- Identifying quality requirements
- Inspecting inputs
- Conducting work
- Monitoring work processes
- Adjusting the processes

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 –

- Identify quality requirements
- Inspect inputs
- Conduct work
- Monitor work processes
- Adjust processes

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, 2, 3, 4 and 5”.
4. Accomplish the “Self-check 1, 2, 3, 4 and 5” in page -10, 16, 21, 23, and 27 respectively.

Information Sheet-1	Identifying quality requirements
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1.1. Introduction

Definition of implement quality system and procedures

Quality– it has been defined as fundamentally relational quality is ongoing process of building and sustaining relationships by assessing anticipating and fulfilling stated and implied needs .

System-- is a collection of element or component that are organized for a common purpose . is sometimes called method.

Procedure-- a, fixed –step by-step sequence of activity or course of action with definite start and end points ,that are followed in the same order to correctly performed a task.

Implement- is carrying out execution or practice of plan method or any design for doing something. it include configuration, running ,testing ,and making necessary change.

Quality system- it is formal management system you can use to strengthen your organization. It is intended to raise standard of work and to make sure everything it set out expectation that quality organizations should meet. Typically, these are the stages that organization implementing quality system aims to follow-

- Agree on standard, these concern the performance that staff and user expect from the organization.
- Carry out self-assessment - this means that you will compare, how well you are doing against these expectation.
- Draw up an action plans-, this include what to be done, who do will it, how it will be done and when.
- Implement - do the work
- Review-check what change have been made.

1.2. Identifying quality requirements

There are two basis requirements to implement quality management system:-

- Management requirements
- Technical requirement

❖ Management requirements

1. Organization

In this requirement ensures that the roles and responsibilities of the product, the management and key personnel are defined.

Key points:

- An organizational structure, as well as responsibilities and tasks of both management and staff should be defined.
- The organizational structure should be such that departments having conflicting interests do not adversely influence the laboratory's work quality. Examples include commercial marketing or financing departments.
- A quality assurance manager should be appointed.
- All personnel should be free from any commercial or financial pressure that could adversely impact the quality of calibration and test results.

2. Management system

This requirement describes how to ensure that a management system is implemented, maintained, and continually improved.

Key points:

- There should be policies, standard procedures and work instructions to ensure the quality of test results.
- There should be a quality manual with policy statements that are issued and communicated by top-level management.
- The effectiveness of the management system should be continually improved

3. General requirements

The organization shall establish, document, implement and maintain a quality management system and continually improve its effectiveness in accordance with the requirements of this International Standard.

The organization shall;-

- Determine the processes needed for the quality management system and their application throughout the processes
- Determine the sequence and interaction of these processes,
- Determine criteria and methods needed to ensure that both the operation and control of these processes are effective,
- Ensure the availability of resources and information necessary to support the operation and monitoring of these processes,
- Monitor, measure (where applicable), and analyze these processes, and
- Implement actions necessary to achieve planned results and continual improvement of these processes.

- To ensure that documents of external origin determined by the organization to be necessary for the Planning and operation of the quality management system are identified and their distribution controlled, and
- To prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose.

7. Control of records

Records established to provide evidence of conformity to requirements and of the effective operation of the quality management system shall be controlled. Records should be controlled and managed by assigning unique identifiers to individual record types. This ensures that they are traceable and retrievable. Appropriate systems must be in place and documented to manage records. 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. It is the responsibility of all Business Units to identify, collect, maintain, store, and dispose of quality. Records to demonstrate conformance to established requirements and the effective operation of the quality management system. Records shall remain legible, readily identifiable and retrievable.

Key points:

- There should be procedures for identification, collection, indexing, storage, retrieval, and disposal of records.
- Records should be stored such that their security, confidentiality, quality and integrity are ensured throughout the required retention time.
- For technical records such as test reports of analytical measurements and original observations should be retained, along with processing parameters that will allow tracking final results back to the original observations.
- Record format can be hard copies or electronic media. There should be procedures to protect and back-up electronic records and to prevent unauthorized access.
- Records can be corrected if there are mistakes. The original record should be crossed out, but still visible.
- When electronic record systems are used, the same principle applies. The laboratory should ensure that original records are not overwritten by the system and that corrections are recorded together with the original records. Using a system that

prevents overwriting original records and stores changes in an electronic audit trail that can be viewed and printed is highly recommended.

Quality records include:

- Records of customer contracts that require less stringent quality systems procedures;
- Management quality system reviews;
- Employee qualifications and training records;
- Design, development, and testing activities;
- Customer contract and / or purchase order reviews;
- Design inputs;
- Design reviews and resulting actions;
- Results of verification and validation testing, including any necessary actions;
- Changes during the development process;
- Supplier records;
- Qualified processes, equipment, and personnel as appropriate;
- Unique identification of the individual product or lot – when traceability is a specified requirement;
- Notification to the customer when customer property is lost, damaged, or is otherwise unsuitable for use;
- Calibration records and test software verifications;
- Quality system audits;
- Inspection plans / control plans and results, including, as applicable, receiving, in-process, and final;
- Records of nonconforming material transactions including; inspection, rejections, internal rejections, deviations, customer complaints and return material;
- Corrective and preventive actions.

Internal audits

- The schedule should be such that each element of the quality system and each section of the laboratory are audited yearly.
- The audit program should be managed by the quality manager.
- Audit findings related to the quality of test and calibration results should be reported to customers.
- Audit follow-up activities should include corrective and preventive action plans, (the effectiveness of the plans) should be monitored.

Management reviews

These Requirements describe how to ensure the continued suitability and effectiveness of the quality system, policies, and testing and calibration procedures

Key points:

- There should be a schedule and procedure for periodic management reviews.
- Recommended review frequency is once a year.
- The management review should include a discussion about the outcome of recent internal audits and external assessments, corrective and preventive actions, results of proficiency testing, customer complaints and feedback, and any recommendations for improvements.
- Management should decide on follow-up activities. These activities should be monitored for effectiveness.

The input to management review should include information on:-

- Results of audits
- Customer feedback
- Process performance and product conformity
- Status of preventive and corrective action
- Follow-up actions from previous management reviews
- Changes that could affect the quality management system and
- Recommendations for improvements

Purchasing services and supplies

This requirement describes how to ensure that services and supplies delivered by third parties do not adversely impact the quality and effectiveness of laboratory operations.

Key points:

- Suppliers should be selected and formally evaluated
- Records of the selection and evaluation process should be maintained.
- The quality of incoming material should be verified against predefined specifications.

Improvement

This requirement describes how to ensure that the effectiveness of the management system is continually improved.

Key points:

Suggestions for improvements should be taken from

- Audit reports
- Analysis of data
- Customer complaints and suggestions
- Corrective and preventive actions, and management reviews.

Technical Requirements

Generally

The technical requirements purpose is to make readers aware that the correctness and reliability of test and calibration results are determined by a variety of factors.

Key points:-

- The different factors impacting the quality of results should be documented. It include for example, sampling, equipment, test methods, and environmental conditions.

Self-Check 1	Written Test
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Name: _____

Date: _____

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. Define quality? 5 pts
2. Define quality system? 5 pts
3. List management requirements to implement quality? 5 pts

Answer

Score = _____

Rating: _____

Note: Satisfactory rating – 15 points

Unsatisfactory - below 15 points

You can ask your teacher for the copy of the correct answer

Name: _____

Date: _____

Short Answer Questions

Information Sheet-2

Inspecting input

2.1. Quality inspection and test

Inspection and testing is carried out on completion of installation and maintenance activities, with results being documented. Should items not be acceptable against the agreed contract criteria they will be repaired, replaced or identified for a subsequent evaluation and decision? All repaired items are subject to a re-inspection to ensure acceptability.

2.1.1. Different forms of inspection

According to production flow, the inspection may be divided into:

- A. Incoming inspection
- B. In-process inspection
- C. Final inspection

Quality assurance and quality control

Quality Control (QC): is a system of routine technical activities, to measure and control the quality of the inventory as it is being developed.

The Quality Control system is designed to:

- I. Provide routine and consistent checks to ensure data integrity, correctness, and Completeness.
- II. Identify and address errors and omissions.
- III. Document and archive inventory material and record all Quality Control activities.

Quality assurance (QA): activities include a planned system of review procedures conducted by Personnel not directly involved in the inventory Compilation/development process.

Practical considerations in developing qa/qc systems

Implementing quality assurance / quality control procedures requires resources, expertise and time. In developing any quality assurance / quality control system, it is expected that judgments will need to be made on the following:

- Resources allocated to quality control for different source categories and the compilation process;
- Time allocated to conduct the checks and reviews of emissions estimates;
- Availability and access to information on activity data and emission factors, including data quality;

- Procedures to ensure confidentiality of inventory and source category information, when required;
- Requirements for archiving information;
- Frequency of quality assurance / quality control checks on different parts of the inventory;
- The level of quality control appropriate for each source category;
- Whether increased effort on QC will result in improved emissions estimates and reduced uncertainties;
- Whether sufficient expertise is available to conduct the checks and reviews.

Elements of quality assurance/quality control system

The following are the major elements to be considered in the development of a quality assurance / quality control system to be implemented in tracking inventory compilation:-

- An inventory agency responsible for coordinating quality assurance / quality control activities;
- A quality assurance / quality control plan;
- General quality control procedures
- Source category-specific quality control procedures
- Quality assurance review procedures;
- Reporting, documentation, and archiving procedures.

The seven quality control tools

1. Cause and effect diagram

The cause and effect diagram is also called the fishbone chart. Its most frequent use is to list the cause of particular problems. The lines coming off the core horizontal line are the main causes and the lines coming off those are sub causes.

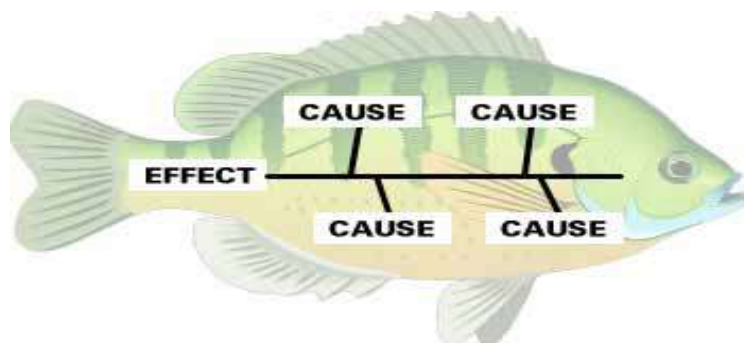


Figure 2.1. Cause and effect diagram

- Identifying potential causes of a problem or issue
- Summarizing major causes under four categories (e.g., people, machines, methods, and materials or policies, procedures, people, and plant).
- ❖ steps in constructing a cause and effect diagram:-

1. Prepare a flip chart or an overhead transparency of the following template

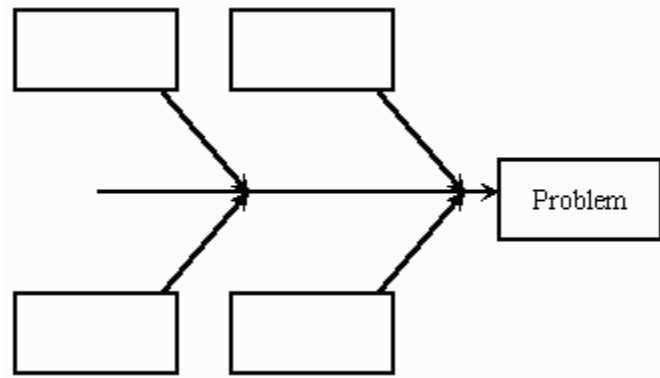


Figure:2.2. Flip chart

2. Write the issue (problem or process condition) on the right side of the cause and effect diagram.
3. Identify the major cause categories and write them in the four boxes on the cause and effect diagram.

You may summarize causes under categories such as:

- ✓ Methods, machines, materials, people,
- ✓ Places, procedures, people, policies,
- ✓ Surroundings, suppliers, system, skills and

4. Brainstorm potential causes of the problem.
5. Review each major cause category. Circle the most likely causes on the diagram.
6. Review the causes that are circled and ask "Why is this cause?" Asking "why" will help get to the Root cause of the problem.
7. Reach an agreement on the most probable cause(s).

2. Run chart

The run chart shows the history and pattern of variation. It is helpful to indicate on the chart whether up is good or down is good.

3. Scatter diagram

The scatter diagram shows the pattern of relationship between two variables that are thought to be related.

4. Flowchart

The flowchart lists the order of activities. The circle symbol indicates the beginning or end of the process. The box indicates action items and the diamond indicates decision points.

A Flowchart is used for:-

- ✓ Defining and analyzing processes.
- ✓ Building step-by-step picture of the process for analysis, discussion, or communication purposes.
- ✓ Defining, standardizing, or finding areas for improvement in a process.



Figure:2.3. Flowchart

5. Pareto Chart

The Pareto shows the distribution of items and arranges them from the most frequent to the least frequent with the final bar being misc.

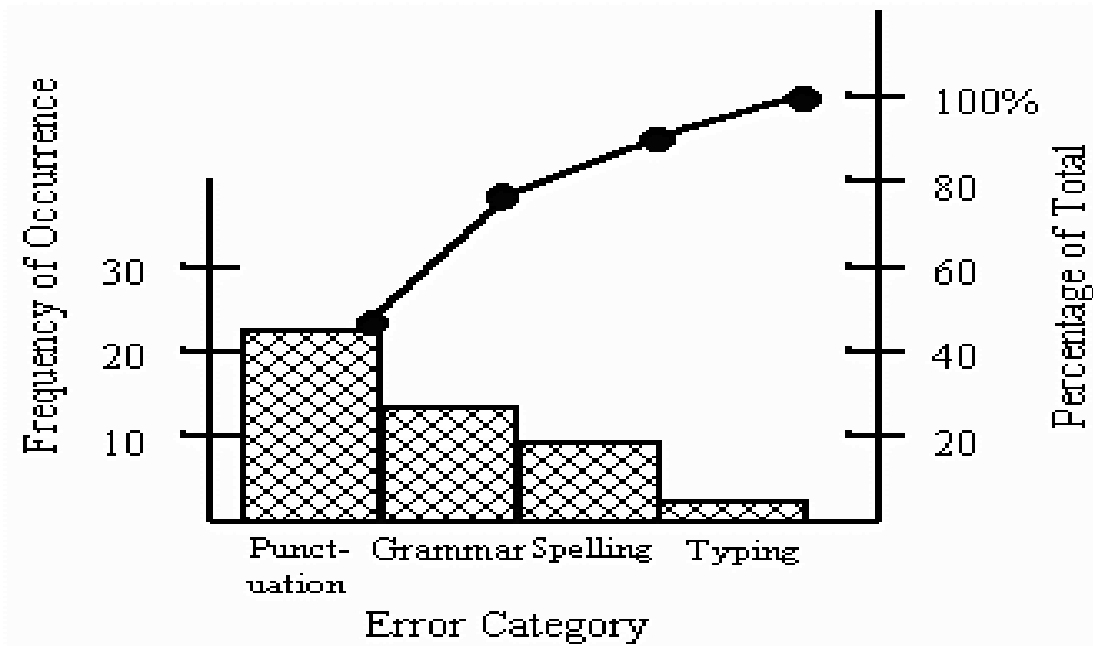


Figure:2.4. Pareto chart

6. Histogram

The histogram is a bar chart showing a distribution of variables.

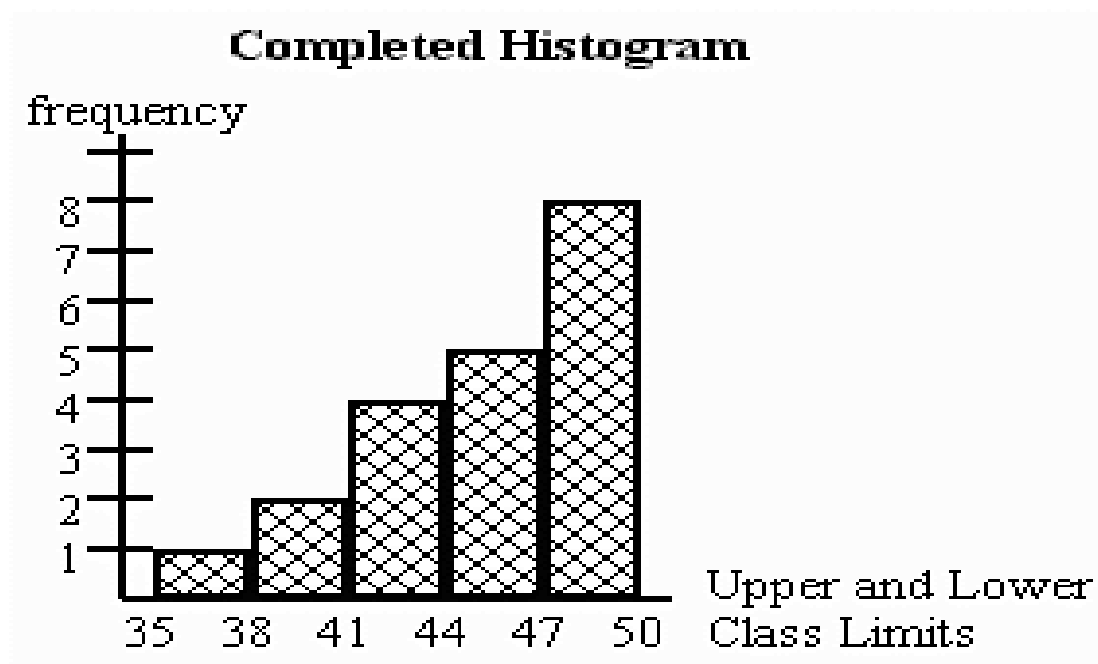


Figure:2.5. Histogram

7. Control Chart

The control chart is a line chart with control limits.



Self-Check 2	Written Test
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Name: _____

Date: _____

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. Discuss and explain methods of inspection? 5 pts
2. What are the basic activities of quality assurances and control? 5 pts

Answer

Score = _____

Rating: _____

Note: Satisfactory rating – 10 points

Unsatisfactory - below 10 points

You can ask your teacher for the copy of the correct answer

Name: _____

Date: _____

Short Answer Questions

Information Sheet-3**Conducting work****3.1. Quality in work****3.1.1. Definition and measurement of quality in work**

One of the key aspects in our study is the theoretical and empirical definition quality in work. We will examine two definitions of the concept: one objective and one subjective.

The objective definition: quality is a key element in promoting employment in a competitive and inclusive knowledge. It reflects the desire, not just to defend minimum standards, but to promote rising standards and ensure a more equitable sharing of progress. It delivers results embracing the economy, the workplace, the home, society at large.

3.1.2. Conditionings and determinants of quality in work

Studies have found several factors that influence job satisfaction. To relate them to quality in work we have to divide them into conditioning factors and determinant factors. The former (for instance, age or gender, being a young woman), influence job satisfaction and quality in work. In contrast, the latter are part of the definition of quality in work and are therefore constituent factors. Here we briefly review both conditionings:

Age: age is related to quality in work.

Gender: women are usually more satisfied with their work than men. There are two possible explanations:- sample self-selection drives dissatisfied women to exit the labor market, something that men do not usually do women have lower expectations than men do.

Education: more educated workers usually earn more and have better professional

Labor values: workers for whom money is very important are systematically dissatisfied. Inversely, workers who value their job in itself have higher quality in work.

Family: marital status or having children has a positive influence on happiness in general and in quality in work in particular. Consequently it is not true that having a family is a restriction to professional development and in turn a cause of a low quality in work.

Other personal characteristics: Health is correlated with quality in work. Probably health is also related with quality in work.

Hours of work: the relationship of this variable with job satisfaction is not clear. Working more hours is expected to have a negative influence on job satisfaction However, satisfied workers are likely to spend more hours at work; the empirical.

Unionism: union membership tends to be negatively correlated with job satisfaction, which would mean that Unions are the right vehicle to channel workers' complaints.

3.2. Quality improvement

“Quality is never an accident; it is always the result of high intention, sincere effort, intelligent direction and skillful execution. It represents the wise choice of many alternatives.”

Willa Foster equation for quality:-

$$\text{Cost} + \text{Satisfaction} + \text{Outcomes} = \text{Value}$$

What is quality Improvement?

Quality Improvement (QI) is any action taken to increase value to the customer or other stakeholder by improving effectiveness and efficiency of processes and activities throughout the organization. Underlying QI is the notion that people can continuously improve all processes and activities through the application of systematic techniques. It also embraces the idea that there should be a relentless, ongoing hunt to eliminate sources of inefficiencies, re-work, errors, waste, and consumer or other stakeholder dissatisfaction. The Japanese use the term “Kaizen” to capture the concept. For them, Kaizen means commitment to excellence and the actual efforts to accomplish ongoing quality improvements. Quality improvement as a philosophy and process relies on each individual in the organization to build quality into every step of service development and delivery. As W. Edwards Deming, a quality founding father, said, “Quality means doing things right the first time.” QI is a management philosophy and tool, which contends that most things can be improved. This philosophy does not subscribe to the theory that “if it ain’t broke, don’t fix it.” Very simply, QI is method of continuously examining processes and outcomes and making them more effective. In a quality improvement context, defining quality sets the foundation for institutionalizing improvement in an organization. Definitions of quality and philosophies are built on the notion that people want to do their best, want to be involved in decision-making, and want the power to help make things better. QI is a continuous process--not merely a one-time effort, but an ongoing pursuit. If that sounds at all discouraging, consider the alternative: if an organization does not continue its QI efforts, it runs the risk of returning to the status quo, where processes are difficult, costly and frustrating. A key part of QI, then, is learning to hold on to whatever gains have been achieved. QI can bring about substantial, lasting, and positive change in your organization. It all begins with identifying the opportunities or improvement.

Where does quality improvement come from?

QI is a set of values, concepts and methods developed from quality principles proposed by early and current quality coaches: W. Edwards Deming, Joseph Juran, Philip B. Crosby, Armand Feigbaum, Robert Hayes, Kaoru Ishikawa, Ken Blanchard, Brian Joiner, Tom

Peters, Mikhail Henry (Six Sigma) and many, many others (see also – Influential People in the Quality Field). QI started in the Japanese and American business community as companies looked for better ways to produce better products and services for their customers. These QI principles, tools, and techniques have been found to work effectively in business and industry for over 40 years. Quality improvement has been defined within business and industry as meeting and exceeding customer needs and expectations, ensuring customer delight, and doing the right things right each time rather than just meeting quotas and numerical goals. Over the last three decades, QI has spread into healthcare and more recently into education and human services. An increasing number of human service provider organizations have turned to QI theories to improve the clinical care, service delivery and operational aspects of their organizations. Its principles have helped to:

- Improve outcomes for consumers
- Improve consumer satisfaction
- Improve workforce retention and satisfaction
- Increase the use of preventive interventions
- Improve the organization/program defined outcomes
- Increase best practices/innovation
- Prevent loss of funding
- Reduce waste
- Reduce re-work
- Reduce errors
- Save resources – a key point for both governmental and non-profit Organizations
 - Improve processes for persons served or other stakeholders (including effectiveness, efficiency, accessibility, availability, responsiveness, continuity, time liness, cultural sensitivity or respectfulness and appropriateness etc).

How do quality assurance and quality improvement compare?

Quality has gone from past emphasis on reducing things gone wrong to emphasis on increasing things gone right. Quality assurance quality improvement

- Externally driven internally driven.
- Follows organizational structure (departments/ programs/facilities).
- Follows systems and processes.
- Delegated to a few embraced by all – everyone’s job!!



- Focused on individuals, outliers.
- Focused on processes.
- Works toward end points has no endpoints.
- Retrospective, detection proactive, preventive.
- Focuses on a function customer focus.
- Divided analysis of dimensions integrated and aligned analysis.
- Built-in added-on.
- Punishes/sanctions, finds blame.
- Rewards innovation, permits failure.



Self-Check 3	Written Test
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Name: _____

Date: _____

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers

1. Write Willa Foster equation for quality? (2 point)
2. Define quality Improvement? (2 point)

Answer

Score = _____

Rating: _____

Note: Satisfactory rating – 4 points

Unsatisfactory - below 4 points

You can ask your teacher for the copy of the correct answer

Name: _____

Date: _____

Short Answer Questions

4.1. Monitoring work processes

Monitoring is the process through which the implementers of the project ensure that actual activities conform to the planned and intended ones. It is employed to make things happen in accordance with the plans, programmers and timeframes initially specified. It is a systematic effort to compare performance with laid-down objectives and standards in order to determine whether progress is in line with them. It also envisages the taking of remedial measures where slippages occur, the foreseeing of difficulties before they arise and making on-line corrections to keep the program me on track.

4.2. Main features of monitoring work processes

- It is a continuous process - an on-going activity that begins with the program me and tracks each activity to its finish;
- It is dynamic - In the sense that its processes and details evolve and change as the monitoring function gets under way
- It is forward looking - inasmuch as it seeks to anticipate problems and Shortcomings;
- It is continuously corrective - in that it suggests remedial measures on-line to rectify defects and failures even as they occur;

It is an all-encompassing function - so that everyone responsible for the implementation of the project has to play his part.

M: Minimum requirements to be met are stated in the guidelines/criteria

O: Observe and analyze the inputs, processes and output of the program me

N: New strategies and techniques applied

I: Issues and problems given due attention and solutions

T: Training of trainers, participants and other stakeholders

O: Opportunities, strengths and weaknesses are considered

R: Record on results of monitoring and evaluation

I: Instruments such as questionnaire, survey and interview

N: Needs of the community are considered

G: Gain updates on the progress of program.



Self-Check 4	Written Test
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Name: _____

Date: _____

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers

1. Write main features of monitoring work processes? (4 point)
2. Define monitoring? (2 point)

Answer

Score = _____
Rating: _____

Note: Satisfactory rating – 6 points

Unsatisfactory - below 6 points

You can ask your teacher for the copy of the correct answer

Name: _____

Date: _____

Short Answer Questions



Information Sheet-5	Adjusting processes
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5.1. The processes in quality improvement

Improvement is based on building knowledge of what works and does not work, and applying it appropriately. When an organization engages in true process improvement, it seeks to learn what causes things to happen in a process and to use knowledge to reduce variation, remove activities that quality improvement tools are numeric and graphic devices used to help individuals and the workforce work with, understand and improve processes. Quality improvement offers a “trial and learning” approach that helps reveal the outcomes of change.

Testing a change can be accomplished by using the **PDCA Cycle**:-

- **P=Plan;**
- **D=Do;**
- **C=Check;**
- **A=Act.**

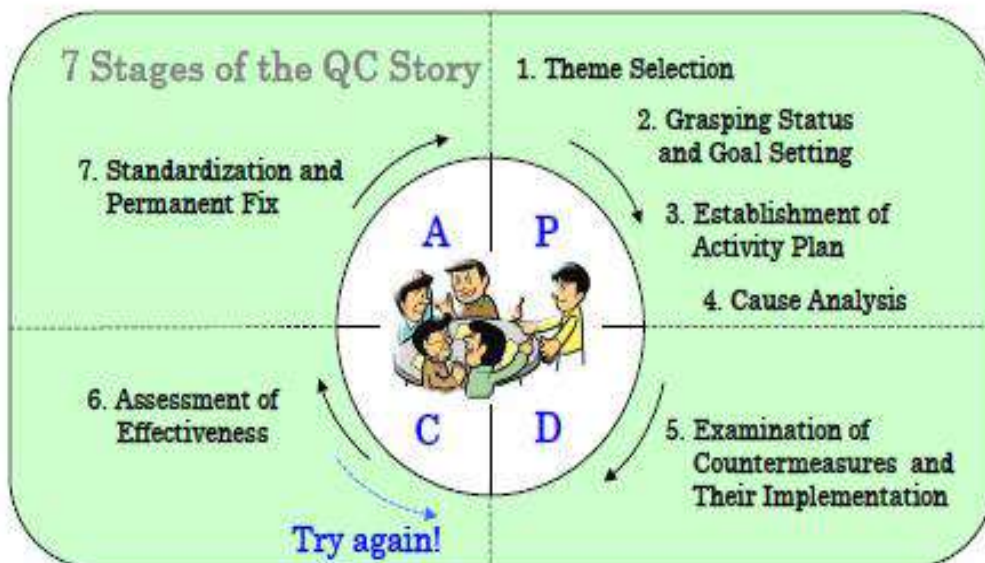


Figure:4.1. PDCA Cycle

❖ Plan

Identify and/or clarify what is not working, what slows things down, adds unnecessary steps or does not meet customer needs or requirements.

Define the problem and the aim. Where are we now and where do we want to be. Design a "best-guess" solution--a new process model based on best practices for care or service

delivery. Research the literature, benchmark with similar service delivery providers to learn what best practices they are employing or partner with them to set some benchmarks or goals to measure performance against. Ensure that the new process won't irritate people, slow them down or cost too much of their time or other resources.

❖ **Do**

Carry out your change, perhaps on a pilot or small-scale basis. Collect the least amount of data that you need to make a quick check of the outcome and how it adds value – is it increasing or decreasing frustration, productivity, cost or outputs/outcomes? Correct obvious mistakes on the fly. Roll out the new process agency-wide. Mandate feedback from individuals about why they diverge from the new process. Change the process based on the feedback until there is 80 percent conformance. Share data with those doing the work (the process owners). Individuals generally will move themselves toward best practices or the best solutions for problem solving if presented with meaningful data. Allow for time to improve performance.

❖ **Check**

Monitor for assignable variation, both positive and negative (i.e., consumers/staff doing better or worse, other stakeholders unhappy or happy, the process/system not doing well). Ask the end-users again for ways to improve the process .

❖ **Act**

Act on what you have learned. Continue to make improvements in the process by going through the cycle again, starting at "Plan." Remember a good outcome starts with a good process. Three basic questions that need to be addressed in any improvement initiative.

5.2. Basic model for quality improvement

Ten-step quality improvement cycle;-

1. Identify a process
2. Define the purpose of the process
3. Identify the primary customers
4. Determine the customer's expectations about the process
5. Determine if expectations are being met and identify opportunities for improvement
6. Identify root causes of problems/challenges/deficiencies/etc.
7. Plan improvements
8. Implement improvements
9. Evaluate improvements
10. Revise as needed



❖ **Bringing it full circle**

The plan-do-check-act (PDCA) cycle or the ten-step model is used throughout the quality improvement process and provides a framework that encourages either rapid or incremental change. Quality improvement does not end after a change has been enacted. To hold the gains, an organization must work through the cycle again and again.

❖ **Reality check**

Perhaps the most important key to holding the gains of QI is harnessing basic human behavior. If the new process or system is to succeed in the long run, individuals must want it to succeed. And most individuals will only want it to succeed if it decreases work, increases efficiency, decreases frustration/ dissatisfaction or improves outputs or outcomes. If you've created a new process that is cumbersome (too many steps) or costs too much time, for example, you will have great difficulty maintaining that process, even if following it does result in better outcomes.

❖ **Keeping the momentum**

The main purpose of the PDCA or ten-step framework is to set targets for improvement, develop a yardstick for measuring improvement, formulate and implement actions to achieve improvement, and check the yardstick to see whether the actions worked. Via the cycle, you want to maintain momentum and enact useful changes as quickly as possible. At this stage of QI, your organization has already gone through the cycle at least once to enact your improvement idea, but practical and useful ideas are bound to surface after the fact. An organization should implement good ideas as soon as they appear and then check their impact. When studying the impact of a change, harvest as little data as necessary. Often, you need as few as six data points to arrive at a quick check of an improvement. If the data look promising, keep the change and continue to collect more data. If they don't look promising, modify the change or discard it. Whatever you do, keep the momentum going. Successful implementation of quality improvement requires commitment, focus and patience, but the rewards are substantial. Beyond the obvious practical benefits, organizations become empowered to solve persistent process and performance challenges while raising the expectations they set for themselves. A quality organization understands that the realization of quality must be continually energized and regenerated.





Self-Check 5	Written Test
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Name: _____

Date: _____

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers

1. Define PDCA Cycle? (2 point)
2. List ten-steps of quality improvement cycle? (2 point)

Answer

Score = _____
Rating: _____

Note: Satisfactory rating – 4 points

Unsatisfactory - below 4 points

You can ask your teacher for the copy of the correct answer

Name: _____

Date: _____

Short Answer Questions





Reference

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Horticultural Crops Production

Level II

Learning Guide-22

Unit of Competence:- Implement quality systems and procedures

Module Title:- Implementing quality systems and procedures

LG Code: AGR HCP2 M05 LO2-LG-22

TTLM Code: AGR HCP2TTLM 0120v1

LO2: Participate in maintaining and improving quality at work

Instruction Sheet	Learning Guide 22
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This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

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

- Monitoring work area, materials, processes and product
- Identifying and reporting non-conformance in inputs, process, product and/or service
- Taking corrective action
- Raising quality issues

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 –

- Monitor work area, materials, processes and product
- Identify and reporting non-conformance in inputs, process, product and/or service
- Take corrective action
- Raise quality issues

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, 2, 3 and 4”.
4. Accomplish the “Self-check 1, 2, 3, and 4” in page -34, 37, 39 and 45 respectively.

Information Sheet-1	Monitoring work area, materials, processes and product
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1.1. Maintenance of workplace, equipment, devices and systems

The workplace and the equipment, devices and systems to which this regulation applies shall be maintained (including cleaned as appropriate) in an efficient state, in efficient working order and in good repair. Where appropriate, the equipment, devices and systems to which this regulation applies shall be subject to a suitable system of maintenance. The equipment, devices and systems to which this regulation applies are. Equipment and devices a fault in which is liable to result in a failure to comply with any of these regulations; and mechanical ventilation systems provided pursuant to regulation.

❖ Ventilation

Effective and suitable provision shall be made to ensure that every enclosed workplace is ventilated by a sufficient quantity of fresh or purified air.

❖ Temperature in indoor workplace

During working hours, the temperature in all workplaces inside buildings shall be reasonable. A method of heating or cooling shall not be used which results in the escape into a workplace of fumes, gas or vapor of such character and to such extent that they are likely to be injurious or offensive to any person. A sufficient number of thermometers shall be provided to enable persons at work to determine the temperature in any workplace inside a building.

❖ Lighting

Every workplace shall have suitable and sufficient lighting. Without prejudice suitable and sufficient emergency lighting shall be provided in any room in circumstances in which persons at work are specially exposed to danger in the event of failure of artificial lighting.

❖ Cleanliness and waste materials

Every workplace and the furniture, furnishings and fittings therein shall be kept sufficiently clean. The surfaces of the floors, walls and ceilings of all workplaces inside buildings shall be capable of being kept sufficiently clean. So far as is reasonably practicable, waste materials shall not be allowed to accumulate in a workplace except in suitable receptacles.

❖ Room dimensions and space

Every room where persons work shall have sufficient floor area, height and unoccupied space for purposes of health, safety and welfare.

❖ **Windows, and transparent or translucent doors, gates and walls**

Every window or other transparent or translucent surface in a wall or partition and every transparent or translucent surface in a door or gate shall, where necessary for reasons of health or safety:-

(A). Be of safety material or be protected against breakage of the transparent or translucent material; and

(B). Be appropriately marked or incorporate features so as, in either case, to make it apparent.

❖ **Windows, skylights and ventilators**

No window, skylight or ventilator which is capable of being opened shall be likely to be opened, closed or adjusted in a manner which exposes any person performing such operation to a risk to his health or safety. No window, skylight or ventilator shall be in a position when open which is likely to expose any person in the workplace to a risk to his health or safety.

❖ **Ability to clean windows etc safely**

All windows and skylights in a workplace shall be of a design or be so constructed that they may be cleaned safely. In considering whether a window or skylight is of a design or so constructed.

❖ **Washing facilities**

Suitable and sufficient washing facilities, including showers if required by the nature of the work or for health reasons, shall be provided at readily accessible places.

Washing facilities shall not be suitable unless:-

- They are provided in the immediate vicinity of every sanitary convenience, whether or not provided elsewhere as well
 - They are provided in the vicinity of any changing rooms required by these Regulations, whether or not provided elsewhere as well
 - They include a supply of clean hot and cold, or warm, water (which shall be running water so far as is practicable)
 - They include soap or other suitable means of cleaning
 - They include towels or other suitable means of drying
 - The rooms containing them are sufficiently ventilated and lit
- and the rooms containing them are kept in a clean and orderly condition and

- Separate facilities are provided for men and women, except where and so far as they are provided in a room the door of which is capable of being secured from inside and the facilities in each such room are intended to be used by only one person at a time.

❖ **Monitoring and measurement of product**

The organization shall monitor and measure the characteristics of the product to verify that product. Requirements have been met. This shall be carried out at appropriate stages of the product realization process.

❖ **Infrastructure organizations**

To maximize our ability to develop and deliver high quality products and services, certain infrastructure organizations are in place to deliver internal support services, collectively referred to as infrastructure organizations.

❖ **Information technology**

Information technology(IT) resources of the organization are managed by formulating an organizational IT strategy based on business needs and current technologies. The strategy encompasses managing and executing IT projects, maintaining systems, managing the IT operating environment, delivering enhancements and supporting/training users.

❖ **Plant, equipment & facilities management:**

Work place Services (WPS) manages the physical asset environment of the organization including plants, equipment and facilities. WPS establishes a strategy for employing physical assets, acquiring additional assets as necessary, monitoring usage of physical assets, and performing preventive and corrective maintenance as required.

❖ **Support Services Management:**

These infrastructure sub-processes are part of the support function of an organization that help the organization to deal with managing the administrative functions, legal services, corporate communications, safety and security, and risk management. These responsibilities also include managing internal administrative operations (e.g. cafeteria, mail, reception, security).



Self-Check 1	Written Test
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Name: _____

Date: _____

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. How do maintain the work places or equipment of one organization? 5 pts

Answer

Score = _____

Rating: _____

Note: Satisfactory rating – 5 points

Unsatisfactory - below 5 points

You can ask your teacher for the copy of the correct answer

Name: _____

Date: _____

Short Answer Questions



Information Sheet-2	Identifying and reporting non-conformance in inputs, process, product and/or service
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2.1. Control of non-conforming product

All product whether production materials, components, assemblies, final product, or other types of work detected or suspected as not conforming to requirements shall become the responsibility of the quality function for:-

- Controlling further movement of the material to prevent material from unintended use or Delivery;
- Documenting and reviewing material;
- Coordinating the disposition action;
- Notifying appropriate personnel;
- Initiating and verifying corrective action and effectiveness;
- Establishing and tracking a prioritized defect reduction plan;
- Trend analysis and providing input for corrective and preventive action.

Where practicable, the organization shall deal with nonconforming product by one or more of the following Ways:-

- By taking action to eliminate the detected non-conformity;
- By authorizing its use, release 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 the effects, or potential effects, of the non-conformity when non-conforming.

2.1. Non-conformance disposition criteria

- Use-as-is
- Rework
- Repair
- Scrap
- Return to supplier



Recurrence control:- action taken to prevent repetition of a non-conformance. This action may involve one or more of the following:-

- Design change.
- Manufacturing method/ procedure/ process change.
- Facility/ test equipment change.
- Test, inspection or operating procedure change.
- Training or certification of personnel.
- Maintenance procedure change.
- Limit time or cycle of component.



Self-Check 2	Written Test
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Name: _____

Date: _____

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. Define and explain nonconforming product? 5 pts
2. What are the disposition criteria of nonconforming products? 5pts

Answer

Score = _____

Rating: _____

Note: Satisfactory rating – 10 points

Unsatisfactory - below 10 points

You can ask your teacher for the copy of the correct answer

Name: _____

Date: _____

Short Answer Questions

Information Sheet-3	Taking corrective action
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3.1. Taking corrective action

Corrective action eliminates the root cause of a known problem; **it is reactive**. Preventive action eliminates the root cause of an anticipated problem; **it is proactive**. The corrective action plan shall be reviewed with the function(s) responsible for implementation of the corrective action.

The corrective action process shall include but not be limited to:-

- The effective and timely handling of customer complaints, return of defective material,
- Reports of product nonconformance (from internal operations and external suppliers), and
- Internal and external audit corrective action requests;
- Identifying and investigating the root cause of nonconforming product, nonconforming Processes, and systemic quality system deficiencies, and recording the results of the Investigation;
- Determining the corrective action needed and applying controls to ensure corrective action is taken and root cause has been addressed;
- Implementing and recording changes in procedures resulting from corrective action;.

Preventive action

Preventive actions shall be appropriate to the effects of the potential problems.

A documented procedure shall be established to define requirements for;-

- Determining potential nonconformities and their causes,
- Evaluating the need for action to prevent occurrence of nonconformities,
- Determining and implementing action needed,
- Records of results of action taken and
- Reviewing preventive action taken.

Self-Check 3	Written Test
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Name: _____

Date: _____

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. Define and explain corrective action and preventive action? 5pts
2. What things consider taking corrective action? 5 pts

Answer

Score = _____

Rating: _____

Note: Satisfactory rating – 10 points

Unsatisfactory - below 10 points

You can ask your teacher for the copy of the correct answer

Name: _____

Date: _____

Short Answer Questions

Information Sheet-4	Raising quality issues
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4.1. Guiding principles / core values of quality improvement

- The customer comes first
- All work is part of a process.
- Quality improvement never ends.
- Prevention is achieved through planning.

Quality happens through people.

Customer focus- emphasis on identify understanding customer needs, requirements, aspirations, preferences and expectations. Customer-driven quality means anticipating meeting and exceeding customer requirements and preventing customer/stakeholder dissatisfaction. Quality is a moving target that is defined and/or judged by the customer. Services must be designed to meet the needs/requirements of consumers and/or communities served. By listening to the “Voice of the Customer,” organizations gain valuable information to drive improvement initiatives, design/implement new services, support the improvement of outcomes for consumers and brand name recognition for the organization.

Systems view – a holistic view that emphasizes analysis of the whole system providing service or influencing an outcome(s). This orientation is critical in pursuing quality enhancements across departments/program boundaries in service providing organizations.

Data-driven focus – emphasis on the gathering and use of objective data on system or process performance. Data are needed to analyze processes, identify problems/barriers, and measure performance. Changes can then be tested and the resulting data analyzed to verify that the changes have actually led to improvements. As Mikel Harry, an implementer of six sigma, says, “It is only by measuring that we can know the value of something, and we can’t improve what we don’t measure.” Without measurement there is no way to know how a process is performing, therefore no way to improve it. By measuring the voice of the customer and the voice of the process, performance gaps can be identified.

- Measure the process, not the people.
- Measure for improvement, not for defense.
- Measure what you can control, not what you can't.
- Make sure data represents reality (fact), not assumption.

Involvement of people (service providers or executive management or managers or supervisors or contractors or board members – everyone!!!).

Emphasis on involving the owners of all components of a system/ process within the organization in seeking a common understanding of service delivery processes. Because work is accomplished through processes and systems in which different people fulfill different functions, improvement initiatives should involve representatives of the people who fulfill these functions. Everyone's insight is necessary to understand changes that need to be made and to effectively implement appropriate, improved processes, as well as to develop ownership of the improved processes and systems.

Multiple causation – emphasis on identifying the multiple root causes of a system or process issue/ problem/barrier/bottleneck. What causes something to be unsatisfactory?

What is the “root” of the problem?

Solution identification – emphasis on seeking a set of solutions that enhance overall system/process performance through simultaneous improvements in a number of normally independent functions.

Process optimization – emphasis on optimizing (making stable and capable) a process to meet customer or other stakeholder needs/requirements, regardless of existing territories, boundaries, and fiefdoms. Looking a process to identify non-valued added steps redundancies, bottlenecks, inefficiencies, and dissatisfaction.

Continuing improvement – emphasis on continuing system's analysis even when a satisfactory solution to a problem is obtained. Improvement needs to be a regular part of daily work in order to achieve the highest levels of quality and performance excellence.

Organizational learning – emphasis on organizational learning so that the organization's capacity to generate process improvement and foster positive changes is enhanced.

4.2. The key drivers for quality improvement

Practitioners in the field of quality improvement and management have identified the building blocks necessary for an organization's critical success with quality improvement. What do you believe to be the most critical block for success? What have researchers found to be the most critical? The answer: total commitment of senior management and leadership. The total commitment of leadership is frequently referred to as the organization's “integrity DNA”. By possessing and consistently adhering to the drivers for improvement, an organization's managers and leadership will ensure a robust quality improvement program. The “practice of quality” must be embraced by senior management and instilled within the organization's culture. Quality is not just about implementing a system or working towards a set of standards. It is an attitude, a way of working, that not only improves an organization but also

the way the organization works. If customer satisfaction rate is 80% (consumers satisfied or very satisfied), the organization will focus on the 20%. They will drill down into the data by conducting an analysis of reasons driving lower consumer satisfaction. After identifying and agreeing on the reason(s) for dissatisfaction the organization can move to identifying improvement initiatives or designing solutions that best address the dissatisfaction.

4.3. Building blocks for organizational improvement

What is the role of each building block in managing organizational quality?

1. Continuous quality improvement – superior quality/performance is not a luxury, it is essential to survival.
2. Process focused improvement – poor service and outcomes is the result of process deficiencies, not people deficiencies. Some organizations try to inspect quality after the fact.
3. Continuous quality Improvement
4. Customer orientation
5. Teamwork
6. Recognition & rewards for contributions to quality
7. Education and training
8. Process Focused Improvement
9. Organizational “culture” supports quality goals
10. Employee participation in making improvements
11. Total commitment of senior managers.

However, process improvement should start at the beginning, building quality into the process thus improving the way service/care is delivered for customers. A process must be taken apart and conceptually put back together in a better way. Focuses on looking at the quality of the process and finding causes of why a process is not performing well. Unintended variation in a process can lead to unwanted variation in outcomes. Therefore, the workforce must seek to reduce or eliminate unwanted variation. Total commitment of senior managers - as stated earlier, management commitment is vital to overcoming uncertainty, establishing credibility and providing the stability to allow change to gain a foothold in the organization. Senior managers must create and maintain buy-in for quality improvement at all levels of the organization. Leadership must manage the organization’s culture and be a visible advocate for quality “talk the talk and walk the walk”. Talk is free, but quality takes work. Researchers in business and industry have found that there is still a gap between what senior management says about the subject of quality and what their organizations actually

do. Senior management must set the organization's quality policy and strategies. Leaders must create sensitivity to changing and emerging customer requirements/needs throughout the organization. To create a foundation for success, senior management must demonstrate commitment to change by removing roadblocks, providing necessary resources (training, time, etc.) and inviting contributions from all members of the workforce. Quality improvement places a stronger emphasis on leadership rather than management competencies and attributes. Leadership's critical task is to integrate, institutionalize and internalize quality.

Customer orientation – as described earlier, quality is achieved by knowing, meeting, and exceeding the customer's expectations.

Education and training – everyone must receive training on the organization's quality practices and values. All members of the workforce (the board, contractors, managers, and staff) must know the organization's quality values, goals for consumers/other stakeholders and the outcomes associated with these goals. This information must be provided to new members of the workforce. Retraining for all staff members should be provided as the organization's quality values and the quality program evolve. Experts in the field of managing quality also recommend training for the workforce in customer-supplier relationships. "In God we trust, all others send data" is the mantra for a quality-driven organization. Quality decisions are based on objective data. The right changes are uncovered through statistical methods and finding the root causes of process deficiencies. To use data proficiently requires that the workforce receive training in quality tools, problem-solving tools, measurement and understanding of variation.

Employee participation in making improvements– those that do the work are most knowledgeable about how to improve it. They are frequently referred to as the "process owners." Empowering the workforce and helping everyone to be a change agent or steward for quality is critical to an organization's success with quality improvement. The workforce must be supported in their efforts to facilitate review and analysis, prioritize opportunities for Improvement and initiate positive change. QI operates on the breaking down of old paradigms. Its beliefs include:

- Work can be enjoyable.
- Employees prefer self-control.
- Employees with creative capacity for solving problems are widely distributed throughout the organization.



- Employees can be self-directed and creative if motivated⁷. Teamwork – Teamwork integrates behaviors that help the total organization exceed the sum of its parts.

Teamwork promotes cooperation, coordination, information sharing, mutual Support, consensus decision-making, etc. Working together across functions and departments, breaking down silos and problem-solving are critical drivers for improvement teams. Recognition and reward – people will act accordingly to how they are received and rewarded. QI thrives on the elimination of blame, finger pointing, and fire fighting. QI concentrates on catching persons doing something right. Workforce reward and recognition must be aligned with an organization's quality values and improvement initiatives. In assessing reward systems, an organization must consider what process behavior the reward or recognition promotes or inhibits. Organizational culture supports quality goals – To create a culture of quality, an organization must align its organizational processes with quality planning and desired outcomes. Quality leadership starts with the leaders who plant the seeds, create the environment for success, empower others and deploy quality throughout the organization.





Self-Check 4	Written Test
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Name: _____

Date: _____

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. What is the advantage of team work for quality improvement? 5pts
2. List the building blocks for organizational improvement? 5 pts
3. Write the guiding principles / core values of quality improvement? 5 pts

Answer

Score = _____

Rating: _____

Note: Satisfactory rating – 15 points

Unsatisfactory - below 15 points

You can ask your teacher for the copy of the correct answer

Name: _____

Date: _____

Short Answer Questions

Reference

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2. L. Farinha and J. J. M. Ferreira, "Quality best practices to increase competitiveness: An industrial case study," Rom. Rev. Precis. Mech. Opt. Mechatronics, vol. 1, no. 47, pp. 86–90, 2015.
3. Terziovski and J.-L. Guerrero, "ISO 9000 quality system certification and its impact on product and process innovation performance," Int. J. Prod. Econ., vol. 158, pp. 197–207, 2014.
4. S. Urbonavicius, "ISO system implementation in small and medium companies from new EU member countries: A tool of managerial and marketing benefits development," Res. Int. Bus. Financ., vol. 19, no. 3, pp. 412–426, 2005.
5. [Www.swissmedic.ch](http://www.swissmedic.ch)



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Profile of trainers participate on special Horticultural Crop Production TTLM development for level II at Adama 2020