Workflow: Product Quality

Toolkit 5.3
Quality Assurance and Control

target audience

Farm leadership, contractors, service providers, supervisors, product agents, and strategic partners.

what it is

Philip Crosby, considered a guru of quality management, defined quality as "conformance to requirements." Once the standards have been identified, and a plan executed to implement product quality (Refer to Toolkit 5.2 - Setting Standards and Planning for Quality), it becomes essential to introduce processes and procedures that will ensure ongoing compliance.

Effective Quality Control requires:

- Standard Specifications (the standard).
- Standard Operating Procedures (Standard Work).
- Standard Raw Material.
- Standard Control consequences/ outcomes.

The above requirements are often referenced as the requirements of a standard product.

Quality control constitutes those internal activities that employees need to do based on standard routines. This is the basis for ensuring quality at source, i.e. quality verification and testing is built into the operating procedure at every step of the process. Whilst final inspection based on a quality standard remains a way to avoid poor quality from leaving the farm, it is too late to prevent rejections, rework, or product down grading. Quality at source (Refer to Toolkit 5.1 - Developing a Quality Vision and Culture) requires the person performing an activity to do ongoing quality control. This should be formalised into standard operating procedures (SOPs) and in line with standard work. Refer to Toolkit 5.2 - Setting Standards and Planning for Quality. Product quality deviations should be addressed by short-interval control, followed by appropriate root cause analysis on all critical and major characteristic deviations. Refer to Toolkit 2.4 - Daily Performance Review.

Quality Assurance (QA) focuses on the effectiveness of the quality processes and systems and is often associated with external activities, e.g., required by legislation and/or specific client requirements. QA monitors processes and systems that will guarantee compliance and food safety. The annual Global GAP certification is seen as a quality assurance routine whereby farming units are certified to produce to a certain market specification. It provides the guarantees that the necessary controls are in place to produce consistently to a certain standard.

why it is important

Quality control and, in particular, **quality at source**, goes beyond traditional product testing by recognizing that uniform product is truly "product by process," meaning that testing alone cannot account for all the subtle product changes that can occur due to variation in conditions and process, especially in farming.

Having the standards and the plan is the start. Now the plan needs to be interpreted in a standard procedure with sufficient detail to enable quality at source.

In a farming environment, compliance to the quality standards, by following detail control activities during the growing season, will have a marked effect on yield and product quality. Not following the standard for irrigation, for example, could result in draught stress with obvious consequences.

Quality at source empowers employees to be accountable, reinforces ownership and drives adherence to standards across the entire value chain. When employees understand that they can control the negative impact of variation and poor quality, they are more likely to identify and eliminate them.

Quality assurance ensures that all the operation and production activities are performed in accordance with the quality plans, standards, and procedures. Quality assurance provides the confirmation that quality control processes are sound and followed by audits, certifications and over inspections, which are final measures to ensure that product quality and safety can be guaranteed. Quality assurance processes verify the internal resources, systems, and processes that are required to avoid variation in product quality. It also extends to key suppliers and provides the confidence that incoming material/product can be used without concern, e.g., water quality.

success factors

- **Standard Quality Specifications** – Internalising client requirements of standard quality specifications that apply across the value chain is a key success factor. Clear standards must be in place for:
  - Raw Materials – Establish a clear specification for all raw materials and a process for determining if the specifications are met.
  - Standard Services – Develop service level agreements.
  - Standard Process – A standard process using standard operating procedures (SOP's). This means that any deviation to the process configuration requires careful consideration as to its potential quality impact. SOPs are procedures that workers must follow in running or maintaining operations. Refer to Toolkit 2.5 - Standard Work.
  - Standard Testing – The considerations with standard testing include:
    - Sample Plan – Including sample handling, amount, location, and frequency.
    - Testing Conditions – Including the testing equipment, calibration frequency, and test method.
    - Mitigation for variability. This will require a definition of expected deviations, a description of the likely impact and proposed mitigation actions.

- An effective escalation process to deal with variance authorisation under abnormal conditions.

- **Improve the Process and Assurance System** – You should progressively move from individual quality related activities to a complete quality assurance system. The result is that you will increasingly check the reliability of your quality assurance system and identify systemic weaknesses, rather than just focusing on human failure regarding isolated activities.
- **Maintaining Certification** – Quality and food safety requirements are often built into certification programmes mandated by an industry, country, or consumer group. Implementing and sustaining certifications and working with specialists to address deviations has become a key success factor.

execution steps

1. Get a team together consisting of supervisors, team leaders, operators and quality and food safety specialists.
2. Familiarise the team with the quality plan. Refer to Toolkit 5.2 - Setting Standards and Planning for Quality. The requirements of food safety certification/ accreditation and other legal requirement should be built into the quality plan.
3. Develop a process map of the complete value chain identifying key/major operations.
4. Identify the critical control parameters and control points across the value chain.
5. Develop the standard operating procedure with clear operator responsibilities and actions, compliance tests, and guidelines for the capturing of evidence and reporting there-of.
6. Train operators to understand operational and compliance requirements.
7. Develop and monitor the quality of raw material against specifications and the quality of services through service level agreements (SLAs).
8. Plan all certification inspections and ensure execution.
9. Develop an abnormal condition escalation and approval process.
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18. Develop an abnormal condition escalation and approval process.

assessment questions

Please Note: There is no minimum / maximum amount of questions you can add

1.	Do we control product quality against an approved standard?
2.	Do we control production quality against an approved standard?
3.	Have specific responsibilities for quality been assigned to individual levels?
4.	Are all individuals responsible for quality control competent?
5.	Have SLAs have been developed and introduced for key Service Providers?
6.	Is raw material bought against approved specifications?
7.	Is Process/Product non-compliance subjected to root cause analysis?

resources

1.	SOP example
2.	
3.	Service Level Agreement (SLA) example
4.	Quality Assurance vs. Quality Control Link: https://www.diffen.com/difference/Quality_Assurance_vs_Quality_Control
5.	Service Level Agreement (SLA) example