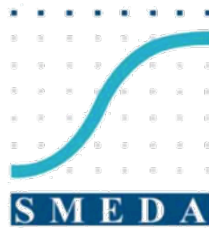


# QUALITY MANAGEMENT Guidelines for Food Sector SMEs



## Small and Medium Enterprises Development Authority

### Ministry of Industries & Production

#### Government of Pakistan

[www.smeda.org.pk](http://www.smeda.org.pk)

#### HEAD OFFICE

4th Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road,  
Lahore

Tel: (92 42) 111 111 456, Fax: (92 42) 36304926-7

[helpdesk@smeda.org.pk](mailto:helpdesk@smeda.org.pk)

REGIONAL OFFICE PUNJAB	REGIONAL OFFICE SINDH	REGIONAL OFFICE KPK	REGIONAL OFFICE BALOCHISTAN
3 <sup>rd</sup> Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road Lahore, Tel: (042) 111-111-456 Fax: (042) 36304926-7 <a href="mailto:helpdesk.punjab@smeda.org.pk">helpdesk.punjab@smeda.org.pk</a>	5 <sup>TH</sup> Floor, Bahria Complex II, M.T. Khan Road, Karachi. Tel: (021) 111-111-456 Fax: (021) 5610572 <a href="mailto:helpdesk-khi@smeda.org.pk">helpdesk-khi@smeda.org.pk</a>	Ground Floor State Life Building The Mall, Peshawar. Tel: (091) 9213046-47 Fax: (091) 286908 <a href="mailto:helpdesk-pew@smeda.org.pk">helpdesk-pew@smeda.org.pk</a>	Bungalow No. 15-A Chaman Housing Scheme Airport Road, Quetta. Tel: (081) 831623, 831702 Fax: (081) 831922 <a href="mailto:helpdesk-qa@smeda.org.pk">helpdesk-qa@smeda.org.pk</a>

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## TABLE OF CONTENTS

1. Introduction of SMEDA.....	2
2. What is Quality? .....	4
3. Why Quality Management? .....	4
4. Ways of Quality Management .....	5
4.1 Quality Control.....	5
4.2 Quality Assurance .....	7
4.3 Difference between Quality Control and Assurance .....	8

## **1. INTRODUCTION OF SMEDA**

The Small and Medium Enterprise Development Authority (SMEDA) was established with the objective to provide fresh impetus to the economy through the launch of an aggressive SME development strategy. Since its inception in October 1998, SMEDA had adopted a sectoral SME development approach. A few priority sectors were selected on the criterion of SME presence. In depth research was conducted and comprehensive development plans were formulated after identification of impediments and retardants. The all-encompassing sectoral development strategy involved overhauling of the regulatory environment by taking into consideration other important aspects including finance, marketing, technology and human resource development.

After successfully qualifying in the first phase of sector development SMEDA reorganized its operations in January 2001 with the task of SME development at a broader scale and enhanced outreach in terms of SMEDA's areas of operation. Currently, SMEDA along with sectoral focus offers a range of services to SMEs including over the counter support systems, exclusive business development facilities, training and development and information dissemination through a wide range of publications. SMEDA's activities can now be classified into the three following broad areas:

1. Creating a Conducive Environment; includes collaboration with policy makers to devise facilitating mechanisms for SMEs by removing regulatory impediments across numerous policy areas
2. Cluster/Sector Development; comprises formulation and implementation of projects for SME clusters/sectors in collaboration with industry/trade associations and chambers
3. Enhancing Access to Business Development Services; development and provision of services to meet the business management, strategic and operational requirements of SMEs.

SMEDA has so far successfully formulated strategies for sectors, including fruits and vegetables, marble and granite, gems and jewelry, marine fisheries, leather and footwear, textiles, surgical instruments, transport and dairy. Whereas the task of SME development at a broader scale still requires more coverage and enhanced reach in terms of SMEDA's areas of operation.

Despite the structural shift towards industrialization, agriculture sector is still the largest sector of the economy with deep impact on socio-economic set up. Knowing this fact, SMEDA, since its inception, is highly committed to enhance the competitiveness of local food processing industry in the country. SMEDA 'Agro Food Services' offers a wide range of services to support the industry, including; Identification of potential investment opportunities in the sector, development of business plans and feasibilities etc. Training and capacity building and hand holding of entrepreneurs.

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Prepared By	SMEDA-Punjab
Prepared In	June 2018
For information	<a href="mailto:gazi.saddam@smeda.org.pk">gazi.saddam@smeda.org.pk</a>

## **2. What is Quality?**

Quality is important for food safety. Defining quality in food processing may not be easy. Quality implies control to achieve goals whether these are consumer or business oriented. Learn about quality in food processing.

The definition of quality may vary according to the individual using the definition. For the consumers who buy food products quality may mean wholesomeness, freshness, good nutritional value, and good organoleptic (texture, color, aroma and flavor) properties. For employees and managers at a food processing plant, food quality may mean a standard to achieve, for example, no more than 1% defects in any production lot.

Food quality is frequently associated with food safety. A good quality food is one that it is safe to consume. Food safety encompasses a whole series of processes and activities both within and outside the food processing plant that will ensure that the food is free of potential chemical, physical, and biological hazards. Among these hazards (which may not be intentional) are naturally occurring toxins, pathogenic microorganisms, and harmful chemicals (pesticides for example).

## **3. Why Quality Management?**

The benefits of Managing the Quality are widespread. The main benefits of Quality Management are discussed below:

- A. Improvement in Product Quality / Food Safety: Product quality concerns on the one hand physical product attributes (taste, shelf life, etc.) and on the other hand safety of a product with regard to health aspects. Quality management and especially quality assurance / product standards define the requirements for a good quality of the product and implementation of a quality system can result in a better product quality.
- B. Improvement in Traceability / Coordination of the chain: By adopting Quality Assurance and Quality Control methods, it is very easy to trace the product if it is distributed in the market and the problem can be traced through where it is originated. Similarly, this makes batch recalling very easy and practical and develops a smooth coordination of the chain (Farm to Fork).



- C. Market Entry: A well adopted Quality Management system prepares the Food Industry for a Certification for e.g. Food Safety or Standards related ISO certifications and thus can explore new markets.
- D. Improvements in trust / image: Trust in business networks is important for customers to get an optimal product due to quality and safety. However, trust can be supported by improved quality management practices and quality labels.
- E. Improvements in workers safety: Workers safety like safety equipment etc. can also be a benefit of adopting quality management practices. Results of a good worker safety management can be the reduction of injuries and sick-leave.
- F. Improvements in environment: Special standards exist for the improvement of the environment, but also quality management practices set requirements for the environment. The importance of environment aspects are also relevant due to legal aspects and Cross Compliance. Next to the fulfilment of quality requirements, social welfare can arise.

#### **4. Ways of Quality Management**

Quality Management in Food Sector can be divided into two main categories:

1. Quality Control
2. Quality Assurance

##### **4.1 Quality Control**

Quality control (QC) is not an optional extra in food processing, neither is it something that is only done by large manufacturers. It is an essential component of any food processing business. The purposes of quality control are:

- To protect the customers from dangers (e.g. contaminated foods) and ensure that they get the weight and quality of food that they pay for.
- To protect the business from cheating by suppliers, damage to equipment (e.g. stones in raw materials) and false accusations by middlemen, customers or suppliers.
- To be sure that food laws operating in a country are complied with.

Quality control need not be time-consuming or expensive and the results of quality control tests should help save money in the long run. In general, the quality control procedures used should be as simple as possible and only give the required amount of information

(too little information means the test has not done its job, too much information and management decisions may be delayed or confused).

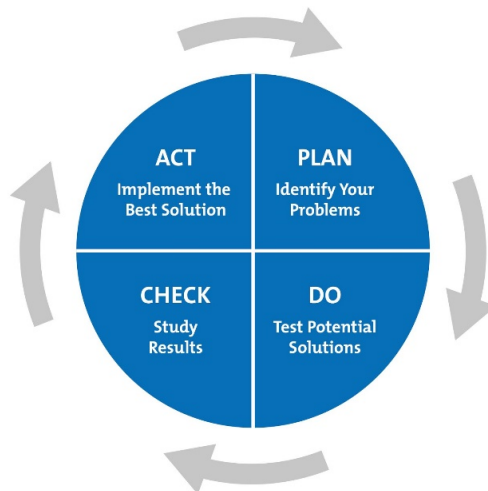
Quality control is used to predict and control the quality of processed foods and then control the process so that the expected quality is achieved for every batch. This means that quality specifications must be written and agreed with suppliers or sellers and control points must be identified in the process.

### Control Points

In every food process there are particular stages which affect the quality of the final product (e.g. the amount of heating given to pasteurized juices affects the colour, flavor and storage life or in sausage the amount and type of grinding affects the texture of the meat). These stages are identified as control points and quality control checks are made at these points to control the process. Manufacturers therefore need to identify the control points in their process (using outside technical assistance if necessary) and set up a specification for the operators to use. For example, in jam making the amount of pectin, fruit and sugar should be carefully controlled and weighing of ingredients is a control point (weights of each ingredient specified and each carefully weighed out). Likewise the acidity of the jam, the sugar content after boiling and the temperature of filling are each control points. The mix should be checked for correct acidity, the sugar content checked during boiling using a thermometer or refractometer and the temperature checked before filling using a thermometer. Checks at the control points can therefore be used to control the process and ensure that each batch of product has a similar quality.

Quality Control can be easily adopted through a cycle commonly known as Plan Do Check Act cycle in Food industry, which is a continuous cycle to improve quality.

Figure 1: The Plan-Do-Check-Act Cycle





## 4.2 Quality Assurance

Defined as a comprehensive program of planned and systematic activities implemented to fulfill requirements for quality, quality assurance takes a much wider approach to quality. Quality assurance is process-oriented and its main focus is defect prevention.

Elements of a quality assurance program include:

- Standard operating procedures (SOPs)
- Policies, programs and procedures

**SOPs:** Standard operating procedures are those steps which are taken in the case of occurrence of problem. For instance it starts from sampling of raw material to batch manufacturing records, product recall and in the end investigation in the case of final product rejection.

**Policies, Programs & Procedures:** are those steps which are designed to implement the Quality Assurance SOP. Quality assurance consists of that “part of quality management focused on providing confidence that quality requirements will be fulfilled.” The confidence provided by quality assurance is twofold—internally to management and externally to customers, government agencies, regulators, certifiers, and third parties.

Auditing is part of the quality assurance function. It is important to ensure quality because it is used to compare actual conditions with requirements and to report those results to management.

The scope of any effective quality assurance program should include entire production and distribution system, beginning with the suppliers and ending with the customer. And because workers are normally well aware of the causes of most problems, written quality assurance program should be made available to all employees so they may help resolve issues and ensure product is manufactured in a way that includes food safety, food security, quality control, GMPs, HACCP, GAP, sanitation, recall, glass inspections, out-of-specification product, returned product and hold/release, chemical and pest-control programs.





### **4.3 Difference between Quality Assurance & Quality Control**

The following are the major differences between quality assurance and quality control.

1. The set of activities which takes into confidence that the quality of the process by which the product is developed is up to the mark is known as Quality Assurance. The set of procedures which guarantees the fitness of the product is known as Quality Control.
2. Quality Assurance is pro-active which is just opposite of the Quality Control because quality assurance takes place at the time of development of the product, but the quality control takes place after the final product is produced.
3. Quality assurance lays emphasis on the customer, however, quality control lays emphasis on standards.
4. Quality Assurance keeps focusing on process, whereas the product is the main focus of Quality control.
5. Quality Assurance protects the product from defects while Quality Control detects and sort out the defects in the product.
6. In quality assurance, quality is created during the designing phase. On the contrary, in quality control, quality is created at the control stage.
7. Quality Assurance is a staff function, which is not in the case of Quality Control.
8. Quality Assurance is a preventive action, but Quality Control is a corrective measure.

Quality assurance reviews the whole process for example the working area is clean and maintained hygienically, the workers are wearing the personal protective equipment's, SOPs are being followed and everything is in place while the quality control review the product for examples the raw material used is in exact quantity, the food is processed on the recommended temperatures, the consistency of the finished product is same etc.