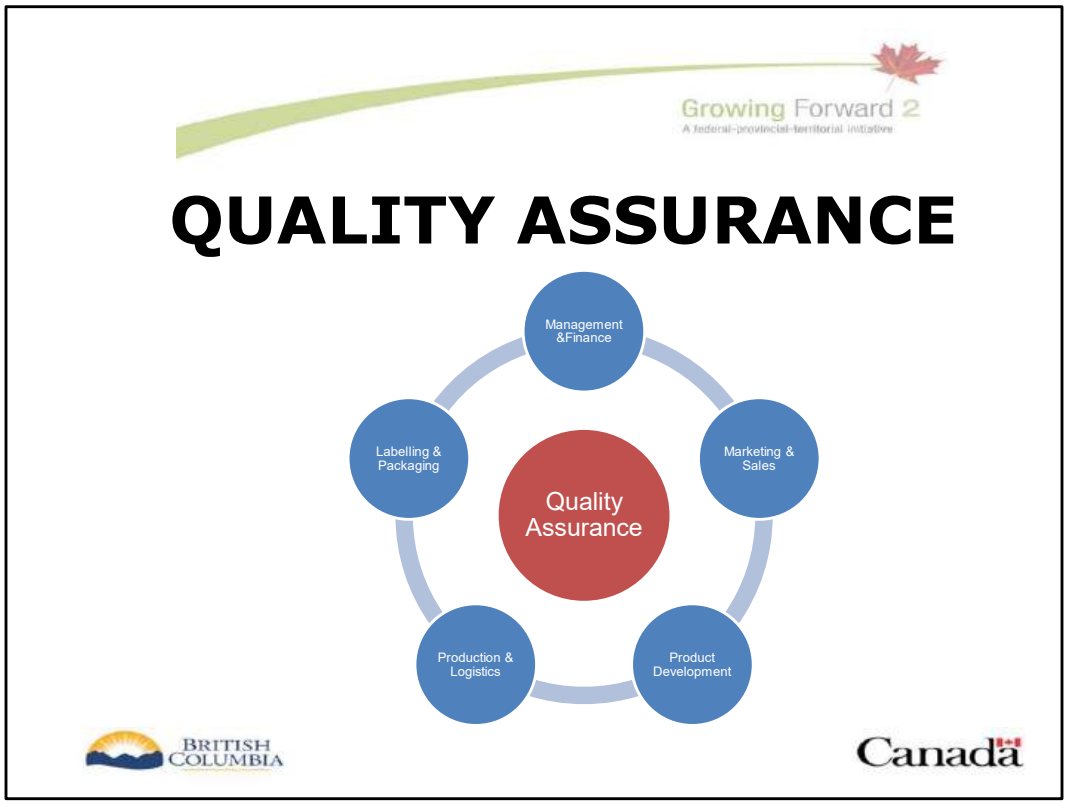


As with most departments or activities in a food business, Quality Assurance does not work alone.

Marketing provides direction on what products are to be created and sold. Quality Assurance also investigates customer complaints or inquiries that arise relating to food safety or performance of the products.

Product Development provides the technical and creative expertise to design the product for marketing requirements but also to assure food safety, durability, consistency and legal compliance.

Quality Assurance works with both Product Development and Production to create the operating standards or tolerances that can be measured to assure legal compliance and conformance to quality attributes. Quality Assurance also conducts a food safety review of the processing methods to confirm the shelf life.

Quality Assurance provides Production and Logistics with the rules of how the product is to be produced, stored and shipped.

Finance relies on the measurements that Quality Assurance obtains to assure that production controls and product formulation controls are

maintained thereby assuring that the costing of the product is accurate or requires adjustment.

SESSION OUTLINE

- Quality Assurance Process
- 4Cs of Quality Assurance
  - Compliance
  - Conformity
  - Consistency
  - Confirmation
- Documentation
- Collaboration

In this session we will be discussing the principles of Quality Assurance and the regulatory requirements for food businesses in Canada.

Every country jurisdiction has their own regulatory regime that you must be familiar with prior to exporting products to these countries.

Fortunately, Canada has a very progressive food regulatory system that is based on similar regulatory regimes as most G20 countries have adopted.

There is not enough time in this session to cover specific activities within the scope of a comprehensive QA program.

The application of the Quality Assurance principles within your company will yield immediate results for the benefit of both your customer and your bottom line.

Quality Assurance Process

To ensure that the next 4 to 400 bottles are the same as the original Product developed and approved bottle.

Are they all the same? How do you know? Visually? Test each bottle? Measure? What to measure?

In your food business, how do you assure that all of your products are the same, from one batch to the next, from one month to the next?

Over the next slides we will discuss the principles of Quality Assurance. Within your workbook you will find additional information of general regulatory information that the majority of food companies rely upon and some specific product related requirements.

The 4Cs:
Compliance
Conformity
Consistency
Confirmation

All of these brands are recognizable in the marketplace and evoke images of predictable food made by long standing companies.

The 4 C's are the foundation for each one of these companies to stay on top!

COMPLIANCE

Does your product comply with all of the food regulations?

How about your customers' requirements?

What are they?

Compliance, with whom or what?

In the food industry it is generally accepted to relate to complying with or meeting government regulations.

Does your product comply with all of the food regulations?

How about your customers' requirements?

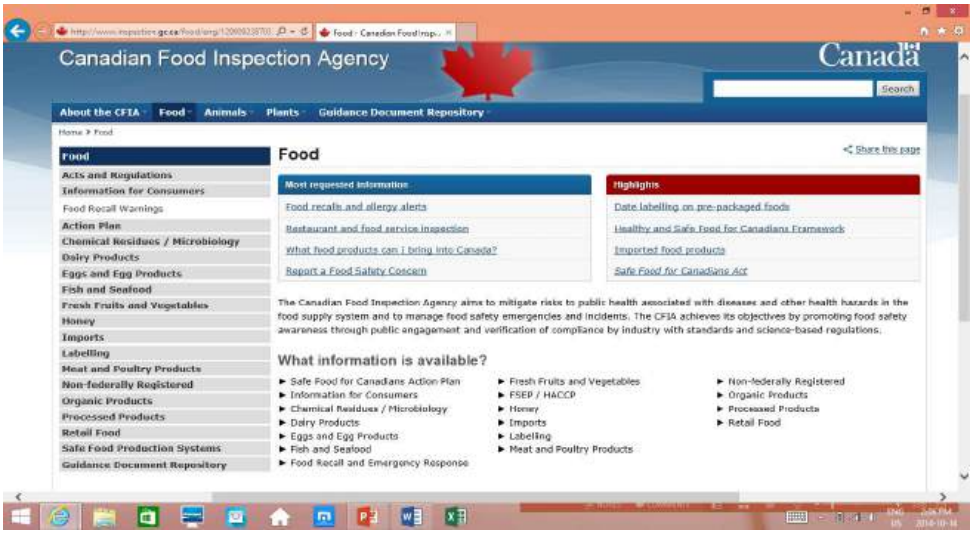
What are they? How do you know if you meet them?

Let's first talk about government regulations.

COMPLIANCE

Good place to start:

CFIA www.inspection.gc.ca



Health Canada develops food safety and nutrition standards and policies, assesses food safety risks, and promotes healthy eating through initiatives like *Canada's Food Guide.*

The Canadian Food Inspection Agency, guided by the Government's **Safe Food for Canadians Action Plan**, verifies that industry is meeting federal food safety and regulatory requirements, and sets standards to detect and prevent risks to Canada's food supply. Effective 2015, four different Acts will come under one overarching law.

COMPLIANCE

Food Safety System – HACCP Program

Food Safety Risks in the Haskap Berry Syrup?

Prevention and Mitigation?

- *Yeast or mold growth*
- *Glass Breakage*

HACCP (Hazard Analysis Critical Control Points) program is an internationally recognized systematic method of assessing the food safety risk of specific products and their processes and to identify the controls that can be put into place to prevent negative physical, chemical, and biological events from occurring.

In this example of a Haskap Berry Syrup packed in glass the two main hazards are considered biological, yeast or mold growth, and physical whereby the glass could potentially break and cause harm.

Prevention of mold and yeast growth - Ensure berries are cleaned, ensure recipe is followed and syrup is heated to 82°C for at least 15 minutes. The syrup is packed into bottles hot and immediately sealed.

Prevention and action for glass breakage – identify where glass could break and it if happens what is the radius of the affected production area. Glass can travel 10 feet if enough force when shatters. Procedure is to remove and discard any opened bottles of syrup that are on the line when the breakage occurs.

COMPLIANCE

Higher food safety risks,

i.e. meat, dairy products, egg processing, allergen labeling

Standards of identity,

i.e. Mayonnaise

Canada Brand

BC Kosher

The production and sale of safe food is the highest priority of both the Government and the consumer thus receiving the greatest attention within regulations but there are other aspects that are just as important for the food business.

These include labelling regulations that also include food safety as they are the vehicle to inform the consumer of ingredient composition, allergens, nutrient claims as well as those regulations of more commercial concern, such as net fill or weight of the package, name and address of the distributor, manufacturer, or importer, and other standards such as compliance to Organic, Kosher, Halal, etc. regimes.

Also Canada has a Canada Brand logo that has specifications as to the use and qualification, similarly a number of religious and trade groups have specifications and symbols to assure conformance to a specific method of production or inclusion or exclusion of specific ingredients.

An example of a Standard of Identity is Mayonnaise
Mayonnaise must have a product composition with a minimum 65% of vegetable oil, contain eggs, vinegar or lemon juice and may contain water, salt, sweetening agent, spice or other seasoning except turmeric or saffron, citric, tartaric or lactic acid, and a sequestering agent (retains colour).

COMPLIANCE

Labelling – mandatory information on every label; some of which is bilingual

Tracking and Traceability – assists in retrieving non-compliant product and materials from the industry

Customer Complaints and Recall – assesses the level of quality and food safety, particularly in a food illness event.

Labelling – mandatory information on every label; some of which is bilingual
Tracking and Traceability – assists in retrieving non-compliant product and materials from the industry
Customer Complaints and Recall – assesses the level of quality and food safety, particularly in a food illness event.

The other common regulatory compliance areas include labelling, tracking and traceability. The latter are used to investigate customer complaints and provide valuable information to minimize a recall.
The latter are used to investigate customer complaints and provide valuable information to minimize a recall.

http://www.inspection.gc.ca/food/labelling/food-labelling-for-industry/eng/1383607266489/1383607344939
Food Industry Labelling Tool is a valuable tool to identify the mandatory information required on a label. It is still critical that each recipe is maintained with a copy of the label as once a change is made, the Information on the label may no longer be valid.

Tracking and traceability of materials and finished product can be considered an inexpensive insurance policy. The more detailed your records

for identifying where an ingredient came from to where it has gone can provide CFIA and your customers with the assurance that the recall or risk is limited to a known area or amount of product.

Customer complaints are a good feedback, good or not so good, that can assist in recognizing a potential problem through the investigation process. The result can lead to a full or limited recall of a food safety risk or can lead to changes in wording of storage or use instructions on a label providing better understanding by the consumer.

COMPLIANCE

Customer Expectations / Requirements?

What are they?

How do you obtain them?

Customers have basic expectations:
- food is safe for consumption
- When I taste the food, is it going to taste and look as I expect from the name and picture or description on the label?

How many times have you looked at a billboard or the side of a large truck where you see this enormous, gorgeous hamburger or salad and either think "WOW, that looks great, I think I'll go get one" or conversely, laugh thinking "WOW, it never looks like that when I open up the lid"

Customers develop expectations or requirements as they consume the product, that the claims made are accurate, that the quantity in the pack is the number it says on the label, that the product will be the same as the last time they consumed it, particularly if it was a pleasurable experience.

When you are producing a product for another company (contract manufacturing) or they are producing one for you then you require written specifications with acceptable variances or descriptions of the important attributes.

Some of these attributes can be sensory; colour, appearance, texture, flavour – or physical, such as size and shape, or chemical or biological or absence of allergens as a few examples.

If they do not supply this information you have to ask (or your marketing group

has to obtain this information).

CONFORMITY

Assurance of the product attaining the acceptable quality standards each time.

Protects the consumer from receiving a non-standard product

How do we accomplish this?

Now let's get back to ensuring the customer gets what they want each time.

The consumer wants a predictable product each time they purchase it.

How do we accomplish this?

CONFORMITY

Measurements and Records

- **Product Standards** – Acceptance or Rejection
- **Batch sheets** – Records and confirms that recipes are followed, correct materials and processes.

We use measurements and records

Earlier we talked about retrieving information from the customer as to what they want in their product.

Quality Assurance takes those product standards and assigns acceptance and rejection descriptions and in most cases attempts to quantify the standards as actual measurements are cleaner than subjective descriptions

Conformity between batches is assured by using the product specifications but also is confirmed through batch records that include the recipe with ingredient descriptions and quantities as well and processes used in the manufacture.

CONSISTENCY

Same product each time –
Predictability

- Purchasing materials to **Specifications**
- Supplier **Qualification**
- Certificates of Analysis / **Conformance**

Predictability, whether good or not so good is another basis for Quality Assurance processes. What is the customer expecting?

The day to day application of Quality Assurance involves other departments from Product Development and through the Logistics functions of Procurement, Production, and Shipping.

Product development creates the formulation in which all ingredients include a specification sheet from either the original supplier or an internally generated information and the critical aspects of the ingredients are clearly identified.

The Purchaser orders ingredients and materials by specification from Suppliers that have been qualified – they are reliable and can supply the materials consistently to the required conformance.

For all or at least those ingredients where it is critical to have specific attributes, a supplier can provide a Certificate of Analysis where certain attributes are tested for each Lot of product to prove that for that specific lot the attributes conform to the specification and to what degree.

A Certificate of Conformance is another document from a supplier where only the assurance is provided that the specific lot conforms to the specifications. There are no specific analytical data to show to what degree the conformance was correct.

CONSISTENCY

Same product each time –
Predictability

- Standardized & measurable production processes
- Stock Rotation – **FIFO**
- Storage, Receiving & Shipping temperature controls

This slide brings the responsibility in-house to the production floor where standardized and measureable production processes are employed.

Standard Operating procedures (SOPs) are created for each process whereby employees can be trained to show comprehension and performance capability. They can then be tested proving their qualification for each task or position.

Within each SOP there may be requirements for measurements and recording this data and identifying through the process if the material or process meets the stated requirements; this can be temperature/time process, minimum or maximum pH, or specific dimensions and tolerances to meet a process constraint, etc.

Assuring product quality and freshness and control of inventory is critical thus stock rotation based on FIFO (First in First out) is employed. Food ingredients have shelf life limitations to preserve not only freshness but also food safety criteria.

This follows through to the warehouse functions of Receiving, Storage, and Shipping. The manners in which materials are received, stored and shipped all contribute to the predictability of the finished product and how it is received by the consumer.

CONFIRMATION

Acceptance Criteria:

Attribute	Target	Range
% Sugar, °Brix	72	68-74
Water Activity, a_w	0.64	< 0.68
Fill Level, mL	750	749 – 755
Specific gravity, g/mL	1.33	1.320 – 1.335
Bottle Label Orientation	Centred	Not greater than 2 mm off centre
Cap Torque (tightness)	13	7-16

This slide is an example of how specific important criteria are defined with a target value but have acceptance levels where if the product measurements fall within these ranges the product will be accepted.

Some of these range values will be based on food safety or shelf life aspects of the product whereas others, such as the bottle label orientation, may be specified by aesthetic values coupled with ease of vision of the product identity.

CONFIRMATION

General Attributes – measurable

Shelf life - 9 months

Lot Tracking format –
DDDYY date of production,
i.e. Sept 2, 2014 = 24514

Storage temperature –
ambient, 15 - 28°C

Again, there are some attributes that will have measurable ranges of acceptance whereas some items such as shelf life are for information where the confirmation tests have been conducted during the initial production stages and during product development and maybe conducted periodically to reconfirm or to assess if changes are warranted.

Lot tracking information provides the reader with the method deciphering the format and the storage information again provides the optimal storage conditions for attaining the declared shelf life.

DOCUMENTATION – Quality / Production

- **Daily Production Records** - Review and approve product for shipment
- **Annually assess food safety program efficacy**; including mock recall and label review
- **Quarterly test effectiveness** of sanitation procedures

These are examples of the types of documentation that the quality assurance responsibility will review, conduct or assess.

The frequency of completing the documents that become records vary based on regulatory requirements, internal desire for collecting data for decision making, and possibly customer requirements or conformance to specifications of a food safety system to assure efficacy of the processes.

COLLABORATION

Quality Assurance is the auditor of the production capacity using the product attributes as the key performance indicators.

The assurance that the products are compliant to regulatory requirements, conform to acceptance criteria, and are consistently meeting the targets is monitored and evaluated by Quality Assurance.

All of which provides the other departments with confidence that their activities are being conducted with a suitable and approved product.

Next Stage of Learning

1. Define acceptance standards
2. Create Food Safety Plan
3. Evaluate suppliers and new materials
4. Connect the effect of current regulations on your products and integrate them into your processes and procedures.
5. Investigate Change Control

At this level you have learned the basics of quality assurance and regulatory requirements for food products.

To put the knowledge to work within your own food business the next steps will involve defining and quantifying acceptance standards, creating an operational food safety plan, and creating a supplier qualification program, all of which will benefit the financial bottom line.

Your increased knowledge will permit you to integrate the current regulations within your processes and practices through your standard operating procedures.

Instituting change control is a basis of good business practices but is critical to implement the discipline for regulatory compliance

FEEDBACK, PLEASE

Please take a few minutes to assist us by providing feedback as to the content and delivery of this module.

We would appreciate if you would provide your name and contact details to follow up for more details as we want these modules to constantly be relevant to food business owners. We appreciate all input, positive and less than positive!