The scientific control (SC), an essential tool for Halal certification

Needs of certification?
What is certification?
Legitimacy?
Example with reference to a success, HACCP, Halal in the future?
What brings the scientific control to certification?
What can contribute the scientific control to Halal guidelines - certifications ?
QPCR Progenus, a restrictive and constructive tool for the public and private sector
Economic contribution of this tool “Progenus”

Background

- **Private standards** have become a **much more prevalent** part of the governance of global agri-food value chains in the last 10 to 15 years (Jaffee and Henson, 2004; OECD, 2004)
- **Private firms and standards-setting coalitions**, including companies and NGOs, **have created and adopted standards for food safety, as well as food quality and environmental and social aspects of agri-food production**.
- These are increasingly **monitored and enforced** through third party certification. (SC)
- This has raised profound questions about the role of public and private institutions in establishing and enforcing food safety norms.

Private standards

- important in global agri-food **value** chains (also in cosmetic and pharmaceutical products)
- **pervading** both domestic **business** and **international trade**
- may **relate to food safety and the integrity of food safety systems (SC)**
- also refer to aspects of food such as provenance, environmental impact, animal welfare, etc**.(SC)**
- an increasing focus **on the processes** by which food is produced

	Public	**Private**
Mandatory	Regulations	Legally-mandated private standards
Voluntary	Public voluntary standards	Private voluntary standards

Examples of private standards in agri-food chains

Individual Firm Standards

- Nature's Choice
- (Tesco)
- • Filières Qualité
- (Carrefour) – version
- applied in multiple
- countries
- Field-to-Fork (Marks
- & Spencer)
- • Filière Controlleé
- (Auchan) –version
- applied in multiple
- countries
- • P.Q.C. (Percorso
- Qualità Conad)
- • Albert Heijn BV: AH

Collective National Standards

- Assured Food Standards
- (UK)
- • British Retail Consortium
- Global Standard
- • Freedom Food (UK)
- • Qualitat Sicherheit (QS)
- • Assured Combinable Crops
- Scheme (UK)
- Farm Assured British Beef and Lamb
- Sachsens Ahrenwort
- SachsenQualitatslammfleisch
- QC Emilia Romagna
- Stichting Streekproduction

Collective International Standards

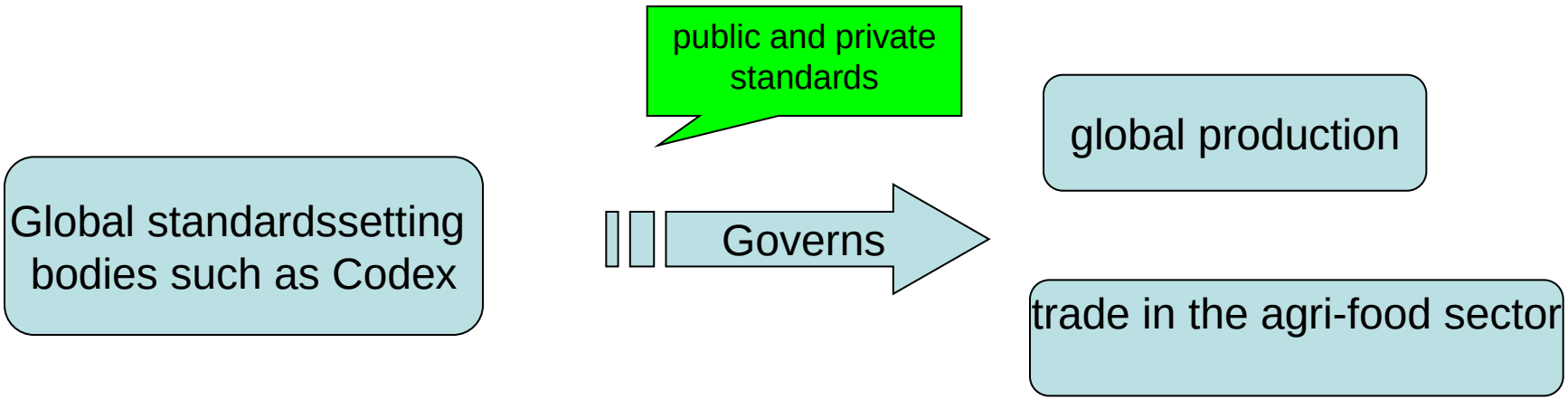
GlobalGAP
• International Food Standard
• Safe Quality Food (SQF) 1000/ 2000
• Marine Stewardship Council (MSC)
• Forest Stewardship Council (FSC)

Source: Based on WTO (2007a), with additional examples from Aragrande *et al*. (2005)

Private standards' and 'voluntary standards' are frequently used interchangeably

•It is also possible for governments to promulgate standards with which compliance is voluntary, and it will be for governments to make compliance with 'voluntary' standards mandatory.

•Many organisations create and adopt standards, and there is a dynamic interchange between the public and private sectors.



WTO (World Trade Organization) has distinguished between three types of standard

	based on who sets (defines and codifies) the standard
Individual company standards	set by individual firms, predominantly large food retailers, and adopted across their supply chains
Collective national standards	set by collective organisations that operate within the boundaries of individual countries, including industry associations and non-governmental organisations (NGOs)
collective international standards	designed to be adopted (required or used) by organisations in different countries. This frequently means that the organisation that sets the standard has international membership.

Five different functions that are involved in standard schemes

Function	Regulations	Public Voluntary Standards	Legally-Mandated Private Standards	Private Voluntary Standards
Standard-setting	Legislature and/or public regulator	Legislature and/or public regulator	Commercial or non-commercial private body	Commercial or non-commercial private body
Adoption	Legislature and/or public regulator	Private firms or organisations	Legislature and/or public regulator	Private firms or organisations
Implementation	Private firms and public bodies	Private firms	Private firms	Private firms
Conformity assessment	Official inspectorate	Public/private auditor	Public/Private auditor	Private auditor
Enforcement	Criminal or administrative courts	Public/private certification body	Criminal or administrative courts	Private certification body

Private standards are frequently characterised

1. Private standards may be seen as more stringent or more extensive than public standards.

=> This is probably the most widely-held perspective on the relationship between private and public standards.

2. Private standards may increase the scope of activities regulated by the standard. Standards coverage can be extended both vertically and horizontally.

- Increased vertical coverage means extending the span of control up and down the value chain.
- Increased horizontal coverage relates to including new elements to be regulated by the standard. (food, cosmetic, pharmaceutic, etc…)

3. Private standards are much more specific and prescriptive about how to achieve the outcomes defined by standards than is the case with public standards.

Organisational forms of private food safety standards-setters

Category of Standards	Organisational Form	Examples
Individual Firm Standards	Private food firms	Nature's Choice (Tesco) Filière Qualité (Carrefour) Field-to-Fork (Marks & Spencer)
	Private standards firms	ProSafe Certified SCS Clean Food Standard PrimusLabs GAP Certification Program EFSIS Standards for Companies Supplying Food Products AIB Consolidated Standards
National or International Collective Standards	Industry organisations	BRC Global Standard for Food Safety International Food Standard SQF1000/2000
	Private standards coalitions	GlobalGAP Dutch HACCP Code Assured Food Standards

Common example;Certification demanded by UK seafood importer

"All prospective suppliers to … must now have achieved, or be working toward:

- Certification to the BRC, IFS or ISO 22000 standards for Quality Management.
- Certification to ISO14001, be preparing for it, or pass an independent inspection for responsible environmental management.
- Certification to the GAA standards for BAP conducted by an authorised ACC inspector.
- Successfully complete a third party inspection against the ETI Base Code.
- Successfully satisfy an inspection covering all aspects of GMP, GAP, GEM, and Social Accountability, conducted by one of the [company] technical team."

Now, Four key drivers for increasing control in value chains

1. reforms of food safety regulatory systems **respond to real and/or perceived risks in food production,**transport and processing which are the result of a series of food safety crises and increasing **consumer anxiety**.
2. heightened interest among consumers and businesses in food production processes and changes in their conceptions of food safety and quality are **reinforced by company competitive strategies** around provenance, environmental and social impact, etc.
3. the globalisation of food supply and increased role of coordination economies in defining **competitiveness create new risks and new challenges for value chain coordination and control**.
4. **responsibility** for ensuring food safety has been devolved from the state towards the private sector.

One **key role** of standards is **to facilitate the coordination of value chains** across space and between producers/firms and, in so doing, **to transmit credible information** on the nature of products and the conditions under which they are produced, processed and transported.

Standard, Certification a essential Needs of the 21 st century

People, Consumer, Muslim
Around the World

Everything come from every where

safety
proof
responsibility
value
real information

Public

Certification

Private

Reference Laboratory

Legitimacy –FAO (Food and Agriculture Organisation) and WHO (World health Organization)report

- Anyone can create a new standard, and organisations can decide whether or not to adopt it.
- But when standards begin to have wide impact, questions can be raised about the extent any impact on third parties is fair and reasonable.

Indicators of legitimacy:

- *the standards-setting process is transparent;*
- *influence of agri-food value chain stakeholders on the standardssetting process;*
- *country interests are taken into account in the standards-setting process;*
- *speed of the standards-setting process and responsiveness to the demand for new or revisedstandards harmonisation;*
- ***scientific basis for standards. (SC)***

Legitimacy - CAC (Commission Codex Alimentarius) and ISO (International Organization for Standardization)

- The **CAC** (Commission Codex Alimentarius) is a membership-based organisation, open to all Member Nations and Associate Members of FAO and/or WHO.
- All nation members, currently numbering180, **negotiate agreements on international food safety standards** within the framework of the United Nations. Malaysia is a member
- Since 2003, the European Commission has joined Codex as a member organisation.

- Reflecting its far greater size and wider scope, **ISO** has a highly formalised managerial structure consisting of 160 national standards organisations, variously from the public or NGO sectors.

⇒ The difference in structure and operation of these two organisations reflects their distinct mandates; whereas ISO's primary role has been the elaboration of voluntary standards, Codex was established to define rules that predominantly guide the establishment of national regulations.

Three types of rules in the Codex Alimentarius

Codex standards:

- Referring to specific commodities – standards for specific products
- Referring to ranges of commodities – standards for ranges of products
- Codex methods of analysis and sampling

Codex codes of practice for production, processing, manufacturing, transport and storage:

- For individual foods
- For groups of foods
- General principles for all products, such as the Codex General Principles of Food Hygiene

Codex guidelines:

- Principles that set out policy in key areas
- Guidelines for the interpretation of these principles or for the interpretation of other Codex standards
- Interpretative Codex guidelines for labelling and claims about food
- Guidelines for interpreting Codex principles for food import and export inspection and certification, etc.

Example with reference to a success, Halal in the future?
Normative Référence - Hazard Analysis - Critical Control Points

HACCP :

- A working tool
→ But is not a norm.

A standard is a descriptive document, developed by consensus and approved by a recognized standardization body (eg ISO).

HACCP is a system that identifies, evaluates and controls hazards significant in relation to food safety (NF V 01-002).

Based on 7 principles, the implementation of HACCP is following a logical sequence of 12 steps, including hazard analysis and identification of critical control point.

HACCP focuses on three classes of hazards to food safety:
biological hazards (viruses, bacteria ...) (SC)
chemical hazards (pesticides, additives ...) (SC)
physical hazards (wood, glass ...).(SC)

Story of HACCP

It all started in the 60s, the United States, when NASA and the military plan to send humans into space. It was then necessary **to ensure food safety for astronauts** without destroying all the products for analysis.
The authorities then ask a company, Pillsbury, to develop a tool to ensure safe products.
This tool was the first draft of the HACCP method, created by Mr. Bauman, who has been recognized as the father of HACCP.

HACCP has been an original;

In from the industrial to the concept,
Concept of the method,
Method in the system,

while being validated by international Entities, scientific, legislative and industry.(way on Legitimacy!)

Development path of HACCP

After the success of the HACCP during spaceflight, several studies based on this new concept are published in parallel by different institutions yet.

Firstly, the FDA (Food and Drugs Administration) integrates HACCP its recommendations for canning.
The NACMCF (National Advisory Commitee on Microbiological critera for Food), internal organization of the U.S.
National Academy of Science, whose mission is to establish microbiological specifications of food is based on these recommendations and experimentation to publish a report on the HACCP in 1989.

In addition, the ***WHO (World Health Organization)*** published several reports including HACCP and based on the work of Bauman during the 70s and 80s. She asked the ICMSF (International Commission for the Microbiological Safety of Food) group of fifty international experts in food microbiology, working on HACCP. The result of this work is a collective work published in 1988, some points were echoed by NACMCF and *reported at a meeting of members of the Codex Alimentarius Commission.*

Success from a cross development

1. Standardization sector

The Codex Alimentarius Commission, after a joint program of the FAO (Food and Agriculture Organization) and WHO, whose role is to establish standards and guidelines for international food.
Thus, the particularity of HACCP is the existence of a coordination between a number of organizations more than a concensus within one of them would be the Codex.

2. Private sector

In addition to studies of experts and public organizations, manufacturers incorporate HACCP their mode of production. Nestlé in an internal text, focuses on HACCP in the early 80s.

3. Recognition by the Institutions of International Trade

The ultimate recognition of HACCP as a reference method arrives at the signing of the SPS agreements annexed to the WTO (World Trade Organization) in 1994, in which HACCP is the reference method for international disputes

Seven principles of HACCP

- HACCP is a method that is based on seven principles:

  PRINCIPLE 1:
  Conduct a hazard analysis. (SC based on statistical model)

  PRINCIPLE 2:
  Determine the critical control point (CCP).

  PRINCIPLE 3:
  Or set the threshold (s) review (s).

  PRINCIPLE 4:
  Establish a system to monitor control of the CCP. (SC – Laboratory analyses and ERP)

  PRINCIPLE 5:
  Establish the corrective action to be taken when monitoring indicates that a particular CCP is not under control. (SC with Progenus Methodology)

  PRINCIPLE 6:
  Establish procedures for verification to confirm that the HACCP system is working effectively. (SC- Analyses on finished products)

- PRINCIPLE 7:
  Create a file which will contain all procedures and records appropriate to all these principles and their implementation.

12-steps

1. Assemble HACCP team

2. Describe the product

3. Identify intended use

4. Establish a flow diagram

This is the HACCP team should be responsible for establishing the flow diagram (see "assemble HACCP team"). This chart will include all operational steps for a given product.

5. On-site confirmation of flow diagram

6. Describe all potential hazards associated with each step, conduct a hazard analysis, and consider any measures to control identified hazards (Principle 1)

7. Determine the Critical Control Points (Principle 2)

8. Establish critical limits for each CCP (Principle 3)

9. Establish a monitoring system for each CCP (Principle 4)

Such a monitoring system to measure or observe critical limits at a CCP. The monitoring procedures must be able to detect loss of control.(QPCR – Progenus)

In addition, information should normally be provided in time to make the necessary adjustments in order to ensure that the thresholds are exceeded. (ERP – Progenus)

Wherever possible, it will make adjustments to processes when monitoring results indicate a trend towards loss of control at a CCP. The adjustments should be taken before a deviation occurs. (Predictive analyses – progenus)

The data must be evaluated by a designated person for the purpose and with the knowledge and authority to implement, if necessary, corrective action. (ERP – Progenus)

If monitoring is not continuous, the controls must be sufficiently frequent and detailed to ensure control of the CCP.

Most of these checks must be made quickly (Progenus analyses < 24 hours) because they are on the production line and there is no time to make long-term analyzes. It is therefore useful to rapid and effective scientific methods. (QPCR methodology – Progenus)

10. Take corrective action (Principle 5)

Specific corrective actions must be developed for each CCP in the HACCP system in order to deal with deviations when they occur.
These measures should ensure that the CCP has been brought under control. (SC)

11. Establish verification procedures (Principle 6)

We may use the methods, procedures and tests, verification and audit, including sampling and analysis of random samples to determine if the HACCP system is working correctly. (Progenus Methodology)

Such controls should be frequent enough to confirm the proper functioning of the system.

12. Establish documentation and record keeping (Principle 7)

Holding and accurate record is essential to the application of HACCP.
HACCP procedures should be documented, appropriate to the nature and extent of the operation and sufficient to enable the company to be satisfied that controls are in place and being maintained. HACCP guidance materials (eg HACCP guides specific to each sector)
(ERP – Progenus)

Necessary Assets

Cfr RR

Joint FAO/WHO Food Standards Programme
CODEX ALIMENTARIUS COMMISSION

FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS
WORLD HEALTH ORGANIZATION
Rome, 2001

GENERAL GUIDELINES FOR USE OF THE TERM "HALAL"

CAC/GL 24-1997[27]

The Codex Alimentarius Commission accepts that there may be minor differences in opinion in the interpretation of lawful and unlawful animals and in the slaughter act, according to the different Islamic Schools of Thought.

As such, these general guidelines are subjected to the interpretation of the appropriate authorities of the importing countries. However, the certificates granted by the religious authorities of the exporting country should be accepted in principle by the importing country, except when the latter provides justification for other specific requirements.

1 SCOPE

1.1 These guidelines recommend measures to be taken on the use of Halal claims in food labelling.

1.2 These guidelines apply to the use of the term halal and equivalent terms in claims as defined in the General Standard for the Labelling of Prepackaged Foods and include its use in trade marks, brand names and business names.

1.3 These guidelines are intended to supplement the Codex General Guidelines on Claims and do not supersede any prohibition contained therein.

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GENERAL GUIDELINES FOR USE OF THE TERM "HALAL"

2 Definition

- 2.1 Halal Food means food permitted under the Islamic Law and should fulfil the following conditions:
- 2.1.1 does not consist of or contain anything which is considered to be unlawful according to Islamic Law; (QPCR analyses "Free of" kit Progenus)
- 2.1.2 has not been prepared, processed, transported or stored using any appliance or facility that was not free from anything unlawful according to Islamic Law; and
- 2.1.3 has not in the course of preparation, processing, transportation or storage been in direct contact with any food that fails to satisfy 2.1.1 and 2.1.2 above. (QPCR analyses "Free of" kit Progenus)
- 2.2 Notwithstanding Section 2.1 above:
- 2.2.1 *halal* food can be prepared, processed or stored in different sections or lines within the same premises where non-halal foods are produced, provided that necessary measures are taken to prevent any contact between halal and non-halal foods; (Contamination -QPCR analyses "Free of" kit Progenus)
- 2.2.2 *halal* food can be prepared, processed, transported or stored using facilities which have been previously used for non-halal foods provided that proper cleaning procedures, according to Islamic requirements, have been observed (Health analyzes, QPCR analyses - kit Progenus)

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GENERAL GUIDELINES FOR USE OF THE TERM "HALAL"

- ***3 CRITERIA FOR USE OF THE TERM "HALAL"***
- **3.1 LAWFUL FOOD**
- The term halal may be used for foods which are considered lawful. Under the Islamic Law, all sources of food are lawful except the following sources, including their products and derivatives which are considered unlawful:
- ***3.1.1 Food of Animal Origin*** (QPCR analyses "Free of" kit Progenus)
- (a) Pigs and boars.
- (b) Dogs, snakes and monkeys.
- (c) Carnivorous animals with claws and fangs such as lions, tigers, bears and other similar animals.
- (d) Birds of prey with claws such as eagles, vultures, and other similar birds.
- (e) Pests such as rats, centipedes, scorpions and other similar animals.
- (f) Animals forbidden to be killed in Islam i.e., ants, bees and woodpecker birds.
- (g) Animals which are considered repulsive generally like lice, flies, maggots and other similar animals.
- (h) Animals that live both on land and in water such as frogs, crocodiles and other similar animals.
- (i) Mules and domestic donkeys.
- (j) All poisonous and hazardous aquatic animals.
- (k) Any other animals not slaughtered according to Islamic Law.
- (l) Blood.

GENERAL GUIDELINES FOR USE OF THE TERM "HALAL"

- ***3.1.2 Food of Plant Origin***
- Intoxicating and hazardous plants except where the toxin or hazard can be eliminated during processing.
- ***3.1.3 Drink***
- (a) Alcoholic drinks.
- (b) All forms of intoxicating and hazardous drinks.
- ***3.1.4 Food Additives*** (QPCR analyses "Free of" kit Progenus)
- All food additives derived from Items 3.1.1, 3.1.2 and 3.1.3.
- **3.2 SLAUGHTERING**
- All lawful land animals should be slaughtered in compliance with the rules laid down in the Codex Recommended Code of Hygienic Practice for Fresh Meat[28] and the following requirements:
- 3.2.1 The person should be a Muslim who is mentally sound and knowledgeable of the Islamic slaughtering procedures.
- 3.2.2 The animal to be slaughtered should be lawful according to Islamic law.
- 3.2.3 The animal to be slaughtered should be alive or deemed to be alive at the time of slaughtering.
- 3.2.4 The phrase "Bismillah" (In the Name of Allah) should be invoked immediately before the slaughter of each animal.
- 3.2.5 The slaughtering device should be sharp and should not be lifted off the animal during the slaughter act.
- 3.2.6 The slaughter act should sever the trachea, oesophagus and main arteries and veins of the neck region.

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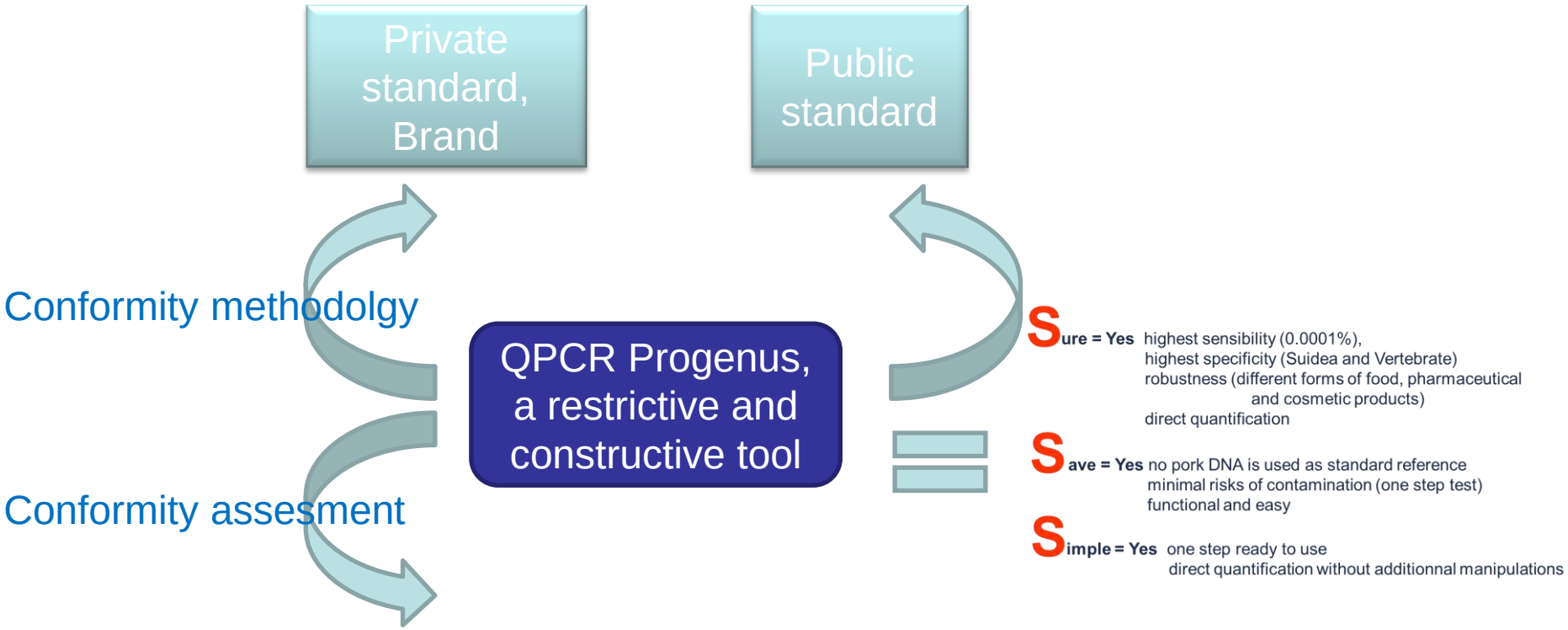
GENERAL GUIDELINES FOR USE OF THE TERM "HALAL"

- **3.3 PREPARATION, PROCESSING, PACKAGING, TRANSPORTATION AND STORAGE**
- (QPCR analyses Progenus)
- All food should be prepared, processed, packaged, transported and stored in such a manner that it complies with Section 2.1 and 2.1 above and the Codex General Principles on Food Hygiene and other relevant Codex Standards.

- ***4 ADDITIONAL LABELLING REQUIREMENTS***
- 4.1 When a claim is made that a food is halal, the word ***halal*** or equivalent terms should appear on the label. (Kit Progenus "free of "is accredited by ?in Europe)
- 4.2 In accordance with the Codex General Guidelines on Claims, claims on halal should not be used in ways which could give rise to doubt about the safety of similar food or claims that halal foods are nutritionally superior to, or healthier than, other foods.



=>Validation of critical points by laboratory analysis
=>Implementation of a sampling plan by statistical method
=>Control of critical points analyses sensitive, specific, safe, fast and efficient at a competitive price
=>Staff training
=>Interpretation of results: contamination, fraud, accident,
and society friendly product in time and quality
=>Support for the establishment and control corrective action
=>Support to networking
=>Support for certifiers

Quality control is the real scientific tool of regulation value chains in compliance with the requirements of consumers

Provide the simplest tool and service, safe, efficient, sensitive, specific, fast and efficient at a competitive price

Mission of Progenus