Traceability and Authenticity in the Global Halal Supply Chain

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Who are we?

**FoodReg**

- Specialist provider of
  - Multi-standard compliance management solutions
  - Internal and external traceability solutions

- We help companies and governments
  - With our expertise in food, biofuels, standards and other claims
  - With our experience in the implementation of standards and systems

- Present in Europe and South East Asia

- Active in EU research
  - Coordinator of BrightAnimal on Precision Livestock Farming

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Halal is special
Producing Halal goods is not only a matter of business, it’s a promise. Muslim consumers globally depend on Halal claims being true for their spiritual well-being. Non-muslim consumers buying Halal want to be sure to consume the high quality they associate Halal with.
Retailers: masters and slaves

- Retailers all over the world are realising the huge potential behind the Halal market

- In the UK, most supermarket chains already have own Halal range
  - Although most meat is still sold in small butcher shops, the world-wide tendency is to buy at larger shops

- Retailers bet their own image on compliance to rules and regulations

- Retailers are the gate-keepers

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<table>
<thead>
<tr>
<th>SUPERMARKETS</th>
<th>CHICKEN</th>
<th>LAMB</th>
<th>BEEF</th>
<th>OWN HALAL RANGE?</th>
</tr>
</thead>
<tbody>
<tr>
<td>TESCO</td>
<td>Up to 5% of chicken is halal</td>
<td>All NZ and 35% of UK lamb is halal</td>
<td>No halal beef sold</td>
<td>Shahada halal meat range - 40 stores</td>
</tr>
<tr>
<td>Waitrose</td>
<td>No halal chicken sold</td>
<td>All lamb is halal</td>
<td>No halal beef sold</td>
<td>Does not sell any halal-only range</td>
</tr>
<tr>
<td>M S</td>
<td>No halal chicken sold</td>
<td>NZ lamb is halal</td>
<td>No halal beef sold</td>
<td>Does not sell any halal-only range</td>
</tr>
<tr>
<td>Sainsbury's</td>
<td>No halal chicken sold</td>
<td>All lamb is halal</td>
<td>No halal beef sold</td>
<td>Tahira halal meat range - 42 stores</td>
</tr>
<tr>
<td>ASDA</td>
<td>Refused to comment</td>
<td>Refused to comment</td>
<td>Refused to comment</td>
<td>Refused to comment</td>
</tr>
<tr>
<td>Somerfield</td>
<td>No halal chicken sold</td>
<td>NZ lamb is halal</td>
<td>No halal beef sold</td>
<td>No halal range</td>
</tr>
<tr>
<td>The co-operative</td>
<td>No halal chicken sold</td>
<td>NZ lamb is halal</td>
<td>No halal beef sold</td>
<td>3 London stores sell halal range</td>
</tr>
</tbody>
</table>

Src: Daily Mail
The need for authenticity

• Paperwork check

RECEPTION

Sample

LABORATORY

• In-depth authenticity tests
• Food safety tests
• Quality tests

Somebody else’s product

PRODUCTION

My product

Authenticity tests

• Label-based (authenticity of labels and certificates)
• Physico-chemical (spectroscopy and other)
• Microbiological (genetic passports, …)
• Natural feature identification (e.g. laser surface analysis)
Limitations of the chain of trust

- Fraud
- Human error
- Lack of information
- Lack of knowledge
The particularities of Halal food

- Halal food is different
  - The spiritual aspect exempts it from a risk-management approach
  - Only very limited physico-chemical or microbiological tests available

- Two basic challenges
  - Certificate/label fraud
  - Doubtful certificate schemes
  - Misinterpretation of certification scheme rules

- There is a clear need for Halal assurance through information exchange
  - The separation of the product flow from the information flow boosts labelling safety
The exchange of information
What is traceability?

Traceability is

- An *infrastructure*, much like rails
- It connects inputs to outputs, like connecting stations on a railway
- A system of claims which need independent verification

Electronic traceability allows us to

- Transport specific information from A to B just-in-time
- Increase the barrier to fraud
- Connect producers to consumers
- Streamline operations within the company and along the supply chain
Our clients want traceability because...

- Market differentiation by documentation of certain practices of social, religious nature such as fair trade, Halal, or adherence to certain standards

- Production of “local” foods, i.e. foods which originate in a certain area (“Made in ...”) or are prepared in a certain fashion (“Taste of ...”)

- Internal performance improvements such as stock reduction

- Calculation of parameters related to sustainability, such as food miles, carbon footprint, fossil energy savings etc

- Performance feedback, especially for the feed – animal – food chain

- Fraud prevention
Benefits of chain food information management

- **Sustainability**
  - stakeholder involvement
  - key indicator calculation

- **Efficiency**
  - forward logistics
  - dynamic shelf life

- **Marketing and brand assurance**
  - authenticity
  - claims management

- **New business Models**
  - carbon indexed ingredients

- **Compliance to standards and regulations**

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Halal stakeholders

- Market access controllers
- Operations
- Regulators
- Consumers
- Supply chain
- Quality management and religious affairs

More information at: FOODTRACEABILITY.EU
What are the basic services of the perfect Halal system?

- Online consumer confirmation for Halal foods
- In-depth reading for making information food choices
- Goods delivery notice (GDN) streamlines reception
- Recall/withdrawal tool
- RFID/barcode based data capture for semi-automatic processes
- Automated Halal verification at reception and despatch
- Complete food safety management suite
Linking production to consumers with traceability
Challenges
Towards a truly global Halal standard
The first of its kind, the Halal Guide Book for Food Producers is a handbook for Halal food producers and consumers who are interested to have a better understanding on the Halal, safety and quality food compliance. This book highlights the guidelines and step-by-step approach based on Malaysia Halal Food Standard (MS1500), Hazard Analysis and Critical Control Points (HACCP) and also Good Manufacturing Practices (GMP). It is comprehensive in scope, yet easy to understand with illustrations and images.

Five (5) key areas are the main focus in this handbook of Halal, safety and quality food compliance, namely Management, Receiving, Processing and Handling, Delivery and Storage. These key disciplines will translate all the points that need to consider and implement by the producers, as well as educate the consumers on the supply chain of the Halal food production. Tips for consumers to consider before buying food are also included in this handbook.

www.hdcglobal.com/publisher/Halal_guide_book
The EU project TRACE attempted the standardisation of the exchange of traceable information.

Framework is called TraceFood – www.foodtraceability.eu
- Contains abstract data exchange standard
- Ontologies for water, honey, chicken and caught fish

Came to realise that huge marketing effort needed to push standard

Consequently, integrated TraceCore into EPCIS
- But: EPCIS not fully specified
- Mostly large players
- No provisions for smallholders
Ownership: new developments in the US

“I’ve often said that I don’t believe government has the answer to every problem or that it can do all things for all people. We are a nation built on the strength of individual initiative. But there are certain things that we can’t do on our own. There are certain things only a government can do. And one of those things is ensuring that the foods we eat, and the medicines we take, are safe and don’t cause us harm.”

Source: whitehouse.gov
SEC. 210. TRACEBACK REQUIREMENTS.

(a) IN GENERAL.—The Administrator, in order to protect the public health, shall establish a national traceability system that enables the Administrator to retrieve the history, use, and location of an article of food through all stages of its production, processing, and distribution.

(b) APPLICABILITY.—Traceability requirements under this section shall apply to food from food production facilities, food establishments, and foreign food establishments.
Ownership

- Currently 4 different variants:
  - State-owned full view (e.g. Malaysia, Vietnam, Indonesia),
  - State-owned on request only (US, in preparation)
  - Industry-owned (Norway, Denmark)
  - Private organisation as a service

- Value of transparency not generally recognised

- Perceived lack of access control, especially by tax authorities

- There is a need for public-private cooperation
Halal Compliance Management

Halal Assurance and Verification

Halal eCertification

Integrity control layer

Primary production → Processing → Distribution/Export → Import/Retail

Consumers

Standards layer

red light: non-conformance
green light: conformance

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Labuan Distribution Hub

- Key motivator: add traceability to Halal claim
- Strategic project
  - Owned by HDC
  - Implemented by Labuan Corporation
  - In collaboration with MARDITECH
  - Integrated with JAKIM (online)
- Project October 2009 – Q1 2011
- Includes RFID integration with Halal traceability

Halal Reg
Tracing and Tracking System

Halal compliance management system

Halal knowledge management system
Halal Trace and Trace – component view

- **RFID**
- **Halal Mgt**
- **Halal and Toyyiba Traceability**
- **Toyyiba Management**
- **Common Infrastructure**
- **HKP** (Halal Knowledge Portal)
- **HCM** (Halal certification management)

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Conclusions
Conclusions

- Halal is a promise – authenticity of the Halal claim is not debatable
- Traceability as enabler of information exchange is the key ingredient to Halal Assurance
  - Separation of the information from the product flow boosts label and certificate certainty
  - Information about practices removes doubts about certification schemes
- There are a number of challenges related to chain food information management
  - Standardisation, ownership and smallholding
- Some solutions are being pursued
  - The Labuan distribution hub implements a Halal Assurance scheme
- We are getting there...
Thank you for your attention!

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