

The Significance of Food Assurance Schemes in the UK, Requirements for Food Safety and Their Credibility, Part 2

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Abstract: This research examines the significance of Assured Food Standards (AFS) in the UK. The main aim of this research is to make clear the requirements that food assurance schemes have to fulfil in order to ensure adequate food safety, consumers' trust and transparency of the schemes.

The Assured Foods Standards (AFS) schemes have the following usefulness: First, all schemes within AFS are inspected by an independent inspection body. Every step in the whole food chain from farming, processing, storage, transporting to packing is inspected by independent inspectors. Second, the AFS schemes and inspection bodies are accredited by UKAS. UKAS accredits that an inspection body is truly independent from any influence from the food assurance schemes or farmers and that independent inspectors are sufficiently experienced. Third, many AFS schemes require "strongly recommended levels" in food safety and animal health, which are much higher than the legal minimum. Fourth, concerning traceability, some schemes (beef, milk and dairy, pigs, and chicken schemes) have traceability systems in feedstuffs, medical treatment records, and cattle and flock movements. These schemes require detailed record-keeping procedures for traceability systems.

The AFS schemes, however, need to be improved in the following points: First, the AFS must explain at what points their standards exceed the legal minimum, Second, some AFS schemes do not explain their traceability requirements in detail.

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7. Traceability Systems in the UK Market and Assured Food Standards

Minimum traceability requirements in EU Regulation

Since 1 January 2005, Article 18 of General Food Law Regulation EC 178/2002 came into force. This requires all food and feed businesses in EU countries to incorporate minimum traceability systems.

Traceability is defined in the General Food Law Regulation EC/178/2002 as the following: The ability to trace and follow a food, feed, food-producing animal or substance through all stages of production, processing and distribution. From 1 January 2005, all food and feed businesses are required to record information on input and output of products. Enforcement authorities can request to see the information on demand (Food Standards Agency, 2004, p. 14).

The EU General Food Law Regulation EC/178/2002, Article 18 requires as the following: 1) the traceability of food, feed, and food-producing animals shall be established at all stages of production, processing and distribution. 2) Food and feed business operators shall be able to identify any person from whom they have been supplied with food, feed, or a food-producing animal. 3) Food and feed business operators shall have in place systems to identify the other businesses, to which their products have been supplied. 4) Food and feed in the EU market shall be labelled or identified to facilitate its traceability.

However, the regulation does not require "internal traceability," which is the linking up of all inputs to outputs. Internal traceability is a system that would allow linkages to be made between the sale of individual products and the source of materials used to produce that product. This regulation does not include any requirement for records to be kept identifying how batches are split and combined within businesses. The regulation relies on a one up, one down approach between businesses (Food Standards Agency, 2002d, p. 12). The adoption of an internal traceability system remains a business decision (Food Standards Agency, 2004, p. 4).

Legal requirements on traceability

In addition to the EC regulation 178/2002, there are some sector specific measures that require traceability in place. (1) British Cattle Movement Service (BCMS), which is an Agency of DEFRA, carries out the mandatory cattle identification and registration scheme in the UK. All cattle in the UK must be registered. Cattle movements in the UK have to be traceable from birth to death (Food Standards Agency, 2004). (2) The Compulsory Beef Labelling Scheme (CBLS) came into operation in the UK on 1 September 2000. Mandatory labelling requires the identification of both the slaughterhouse and cutting plants for beef at the point of sale. Concerning countries where beef was born and raised, additional labelling is mandatory (Food Standards Agency, 2004). (3) The Feeding Stuffs Regulations 2000 require

control on the marketing of feed materials. These provide that a label should be attached to a batch of feed materials (Food Standards Agency, 2004). (4) Food which contains GM material is required to be labelled to give information on GM material.

Traceability in Assured British Meat

In the beef meat and lamb meat sector, Assured British Meat (ABM) ensures full traceability systems of its assured product from farm to retail outlets, with specific schemes for transport, auction market, abattoirs and cutting plants, and secondary wholesalers. Systems must be in place to record animal movements and to identify cattle individually (Assured British Meat, 2005c, ABM Beef and Lamb Farm Standards and Guidance for Producers, B1.0). The inspector must cross check the movement records against passports for cattle and check that all information is recorded for sheep (ibid. B1.1). All sheep born on the farm must be marked according to current legislation and the farm of birth of purchased sheep must be identifiable (ibid. L1.2). All sheep leaving the farm of birth must be tagged or tattooed with their sheep flock number. All purchased sheep must be tagged (ibid. L1.2). "Store animals, breeding stock and lambs or calves must be bought from a farm registered under a recognised assurance scheme (ibid. B1.3)." The beef and lamb meat cutting plant standards have requirements for traceability of assurance product, and the traceability systems are verified as part of the plant audit. These schemes also require an HACCP based food safety system over and above legal requirements.

Traceability in Assured British Pigs

In the pig sector, the Assured British Pigs (ABP) scheme provides traceability throughout the whole pig meat production chain from animal feed manufacture to meat processing and distribution. With using the database in ABP, all processors, cutting plants and packing-houses which are licensed are subject to traceability audits (Assured British Pigs, 2004, Newsletter). Given a pig registration number, surname, or trading name and address, the scheme confirms its certification status, registration number, expiry date and scope of certification to the abattoir (Assured British Pigs, 2005b, Scheme Operating Procedures, clause 34). Producers should retain written records of the source, breed type, and use of all breeding stock and semen (Assured British Pigs, 2005a, The Certification Standard, clause 3.4). The ingredient composition of all feed should be recorded and traceable to source (ibid. clause 4.5). The producers should record the type, quantity, and date of delivery of all feed. Assured British Pigs scheme demands HACCP based food safety systems for food production plants.

Traceability in National Dairy Farm Assured Scheme

In the milk and dairy sector, National Dairy Farm Assured Scheme (NDFAS) emphasises enhanced traceability of feedstuffs and medical products. It requires that member farms must be registered with the British Cattle Movement Service. The British Cattle Movement Service covers legal requirements of traceability for all cattle. It shows that NDFAS has a proper

traceability system to identify and trace their assured product. The assessor must cross check the movement records and ear tags against passports for a sample of cattle, (National Dairy Farm Assured Scheme, 2004, "Standards and Guidelines for Assessment," 5.7a).

In order to do so, NDFAS requires documentation and clear records which provide member farmers with a means of demonstrating due diligence. The scheme has detailed requirements to keep detail records for monitoring herd health and animal welfare, the occurrence of all health and welfare conditions (*ibid.* 5.1c), and all treatments and medicine administered (*ibid.* 5.4a). The member farmers have to present a Herd Health Plan and Veterinary Medicine Record Book to verify their production and process procedures. Member farmers have to keep records on feed delivery for all purchased feed (*ibid.* 4.1d). All feed must be purchased from accredited suppliers of the UKASTA Feed Assurance Scheme (UFAS). The evidence of accreditation status must be present on the feed label and accompanying documentation such as delivery notes or invoice (*ibid.* 4.1b).

Traceability in Assured Chicken Production

In the poultry sector, the Assured Chicken Production scheme provides total traceability of the life of a bird. The standards are designed to cover the whole life of a bird up to a particular processing point. Although Assured Chicken Production's standards do not give a clear explanation of its traceability systems, the standards require detailed records for each flock. This means the scheme identifies birds at each unit of flock.

Flock performance records must be monitored (Assured Chicken Production, 2005a, 'Poultry Standards, 2004-2005,' 7.1). A record must be maintained for "each flock detailing routine checks, monitoring, inspection, delivery, extraordinary events," including flock inspections, medicine and vaccine administration records, veterinary advice, salmonella tests, feed deliveries (dates, quantities, types) (*ibid.* 7.3). Specific information on 'each flock' must be supplied in the Production Report. It must include the number of day-old chicks delivered; date delivered; origin of flock (hatchery, breeder flock); mortality on a daily basis; date, quantity and type of feed delivered; date of sale, number sold; incidence of disease; administration of medicines and vaccines (date administered, withdrawal periods, amount administered, administrator) (*ibid.* 7.4). Details of the ACP registration number must be included on all dispatch notes (*ibid.* 7.5).

Traceability cannot be achieved without adequate and precise documentation. Concerning animal feedstuffs, Assured Chicken Production has detailed requirements. Feedstuffs must not contain Meat and Bone Meal or Poultry By-Products Meal. Feedstuffs must not contain antibiotic growth promoters. Feedstuffs must not contain tallow. Compound feed is to be sourced from a mill with currently certified memberships of UFAS or proven equivalent. Feed delivery tickets are to be shown and retained for each flock for at least one year. In addition, samples of each delivery of feed are to be retained for three months (*ibid.* 4.12).

Assured Chicken Production's Advisory Committee emphasises the importance of documentation and traceability. It says, "Traceability will not be achieved without adequate and clear documentation." The advisory committee recommends that farmers should keep the

following records: records of feedstuffs purchased (date, description including ingredients, supplier, batch code for additives); records of tests conducted on purchased feedstuffs; date and quantity mixed; records of any analyses conducted to confirm adequacy of mixing times, cleaning procedures; date fed and livestock details; and grazing records (Assured Chicken Production, 2005b, Newsletter).

Traceability in Assured Produce Scheme

In the fruits and vegetables sector, Assured Produce Scheme standards require member farmers to have a working traceability system. Traceability should be possible through their production process. Member farmers must ensure that a traceability system is in place that can pass this 'traceability' link to the next point in the supply chain when the produce leaves the member's control. "All Assured Produce registered product must be traceable to the registered farm where it has been grown" (Assured Produce, 2004a, "Generic Crop Protocol Standards," 2.1.1), "Audit-trail should be in place to enable individual produce batches to be traced from initial receipt of seed, through propagation, production, harvesting, packing, storage to the final point of sale to the consumer" (Assured Produce, 2004b, "Generic Protocol Guidance Notes 2004/2005," 2.1.1).

Concerning record keeping, Assured Produce requires or strongly recommends that member farmers keep detailed records of a wide range of farming procedures. On site history, a recording system must be established. The recording system must include a visual identification or reference for each field, orchard, and glasshouse to provide a permanent record of the crops and agronomic activities undertaken in those locations (Assured Produce, 2004a, "Assured Produce Generic Crop Protocol Standards," 3.1.1). Seed should be traceable to source and seed records should be kept including variety name, batch number and seed vendor (*ibid.* 5.2.1).

Substrates should be traceable to source. Their records should be available (*ibid.* 4.4.1). If chemical sterilisation of substrates is undertaken, location, date, chemical name and active ingredient, method, machinery used and name of operator must be recorded (*ibid.* 4.4.4). Concerning pesticide application, records on pesticide applications, crop name, location of application, product trade name, application date, operator name, and product dose or quantity should be held (*ibid.* 5.4.1).

Traceability in Assured Combinable Crops

Assured Combinable Crops standards do not provide any clear explanation on traceability systems. Therefore, it is not clear by what system they carry out their traceability, how they identify their product, how they can make a linkage between the product and product information, and what kind of internet systems they use to carry out their traceability system. However, the scheme is a whole farm assurance scheme for combinable crops and it has detailed requirements for record-keeping on products.

Concerning pesticide use, all pesticide applications must be recorded and kept for a minimum period of 3 years. The record should include name of equipment operator, crop and

growth stage, crop location or field name, area to treat, chemical required, rate of application, product name, reason for application, special precautions required, date of application, time of application, and so on (Assured Combinable Crops Scheme, 2005b, 'Assured Combinable Crops Standards 2004-2005,' 2.10). All post harvest pesticides used on grain, dose rate, date, and reason must be recorded (ibid. 6.9).

Concerning purchased seed, the records on certificates/lot numbers and any seed treatment must be kept and be available for inspectors (ibid. 4.1).

Concerning fertiliser, the date, type and rate of all fertiliser and organic manures for each field must be recorded (Assured Combinable Crops Scheme, 2005b, 'Assured Combinable Crops Standards,' 5.6).

Concerning records of long-term grain storage, the record of dates of all checks and follow-up action must be kept (ibid. 6.7).

Key elements for robust traceability

In order to assess the levels of traceability in Assured Food Standards, it is useful to confirm what procedures are important for robust traceability. First, traceability relies on the clear identification of products. Within a business, product identification relates to a batch or lot of products. A batch or lot is a unit number or amount of products which are sold, such as a few kilos of oranges. Businesses use a batch or lot as a unit to identify product. Second, in order to build robust traceability systems, it is important for businesses to collect the right information on the product, to make a linkage between the information and a specific product, to assess the product information. Through this process, businesses can trace the product. Third, in many traceability systems, product information is recorded on data sheets that accompany each batch through all the stages of the production process (Food Standards Agency, 2004).

With these systems, product and information on production history can be trailed. Product information should provide a clear link with its production history. In order to do so, increasingly automatic data collection by computers, IT-enabled systems, and bar code readers are being introduced into traceability systems.

Therefore, the following characteristics are important for robust traceability systems: a) Identification of product; b) A 'batch' or 'lot' to record information about the product; c) The items of information recorded in a data base, record keeping; d) Making a linkage between the information and the product.

Traceability requirements in Assured Food Standards

Assured Food Standards requires clear segregation of assured food from non-assured foods. Assured Food Standards emphasises that the scheme can verify the provenance of assured food. It stresses that the scheme has a whole-chain traceability system for assured products, as a necessity for licensing. It ensures that all processors, dairies, cutting plants and packing-houses licensed to pack Red Tractor products will be subject to "traceability audits."³⁾

However, Assured Food Standards does not show any detailed requirements on their

traceability procedures. It does not sufficiently explain about methods used to handle food-safety data and food-quality data. It does not clearly define the methods and technology systems for product identification, items of information to be kept, procedures for record keeping and the linking between product identification and product information.

Six schemes within Assured Food Standards, which are above examined, require detailed record-keeping on their assured food. All schemes are whole chain assurance schemes in each sector. In addition, these schemes and Assured Food Standards pay a lot of attention to control of the logo for their assured food. It is considered that the six schemes and Assured Food Standards have systems of product identification, data bases of production history for their assured food, and a system to control the use of logo. All these systems could help efficient traceability.

Concerning Assured British Meat, Assured British Pigs, National Dairy Farm Assured Scheme, and Assured Produce Scheme, these schemes clearly describe the requirements for traceability. The other schemes do not explain sufficiently about traceability requirements in their standards. How can they identify their product? What kinds of items of information are collected and can be traced? Concerning traceability, what kinds of methods do they use for handling food safety data and quality data? They have to explain these points. In addition, they have to explain about their specific requirements which are above the legal minimums for traceability.

Although the primary role of traceability is to facilitate the rapid withdrawal of products from sale, in addition, the traceability systems help to prevent food fraud where analysis cannot be used for authenticity, such as in the case of free-range eggs, and organic food. In this context, the traceability systems are important for policing whether the Red Tractor logo is properly used or not. Traceability systems are useful to provide a better control over the use of the logo on assured food, especially to avoid logo fraud. In order to avoid logo fraud, traceability systems in the Assured Food Standards need to be improved.

8. Retailers' Brand Control and Its Impacts on Red Tractor Logo

Retailers' own brand control and 'add-on' specifications

Retailers have been the major drivers in the development of assurance schemes in the UK food market. Since the Food Safety Act (1990) came into force, in order to satisfy their "due diligence" obligations for on-farm products, retailers began to choose farmers who were certified by assurance schemes for on-farm products (Kirk-Wilson, 2002). Now many retailers utilise the Red Tractor logo for on-farm products. They sell assured foods which are certified by Assured Food Standards. In general, major supermarkets and leading suppliers in the UK prefer to deal in assured foods through Assured Food Standards rather than non-assured foods.⁴⁾

Although some retailers sell foods certified by Assured Food Standards, some retailers sell these foods under "retailer's own brand" status. They sell these foods without any reference to Assured Food Standards or Red Tractor. Some retailers utilise Assured Food

Standards as a baseline for on-farm products and they add their own specifications to standards in Assured Food Standards. These are 'add-on' specifications by retailers' own brand control (Kirk-Wilson, 2002).

Although some retailers add their particular specifications on assured foods, they wish to use their own brand, because they try to differentiate their own brand from those of competitors' brands (Kirk-Wilson, 2002). Because of these reasons, some products assured through Assured Food Standards are not labelled with Red Tractor logo. Some foods only bear retailers' own brand logos, other foods are labelled with retailers' own logos and Red Tractor logo.

Therefore, some retailers do not sufficiently inform consumers about the fact that they make use of assured foods supplied by Assured Food Standards (Kirk-Wilson, 2002). Consumers are not fully informed about retailers' 'add-on' specifications. Some retailers do not provide detailed information about which points they add as their own specifications to Assurance Food Standards' standards. As a result, multiple logos are marketed in the UK food market. This confuses the consumers. It is difficult for consumers to understand the precise meaning of Red Tractor logos and the levels of standards in Assured Food Standards schemes (Food Standards Agency, 2002a).

Multiplicity of logos and consumers' confusion

In 2002, the Policy Commission on the Future of Farming and Food for England indicated that consumers were confused about the implications of a variety of food assurance schemes. According to the commission, the trust in assurance schemes among consumers was limited (Policy Commission on the Future of Farming and Food for England, 2002).

"Most people are thoroughly confused about assurance scheme. The number of different schemes and their various logos adds to the confusion. For example, consumers are not sure whether the Red Tractor logo is to do with country of origin, better standards of production, or better quality of food." "The creation of a new, independent governing board for Red Tractor schemes, along with measures to improve transparency and consistency across the board are essential to meet the needs of the consumer" (Food Standards Agency, 2002c).

The consumers' survey conducted by the National Consumer Council (NCC) commented, "In many cases they (food assurance schemes) do not go as far as consumers expect" (National Consumer Council, 2003).

Assured products by Assured Food Standards 'can' carry Red Tractor logo. However, they do not necessary carry the Red Tractor Logo. Therefore, according to Kirk-Wilson (2002), the Red Tractor logo was recognised by only some 30% of consumers in 2002. The Food Standards Agency recommended the following points: Retailers should disclose the meaning of assurance schemes in retailers' own brand control. Retailers should explain details about their 'add-on' specifications on assurance scheme's standards (Food Standards Agency, 2002a).

When retailers sell assured foods under their own brand, the Food Standards Agency recommends the following points: (i) Retailers should be able to explain how schemes link

into retailers' own brand specifications. (ii) Retailers should give suitable and easily accessible consumer information about the Red Tractor certified products that they are selling on their own sites (Kirk-Wilson, 2002).

9. Consumer Representatives and Independence of Organising Board

Kirk-Wilson (2002) emphasised that independence of governing boards should be given greater priority in order to ensure consumer credibility. In this context, his report analysed a balance among representatives in governing boards of food assurance schemes. It examined whether the governing boards in the food assurance schemes involve all stakeholders in the food supply chain, and whether any consumer representative is involved. The appointment of consumer representatives shows that assurance schemes are independent from producers or farmers, and hence that it is important for assurance schemes to take consumer interests well into consideration.

Only a small number of schemes have consumer representatives. a) The Assured Food Standards has a specific consumer representative in their governing boards. b) The Assured Combinable Crop's governing boards involve a broad range of stakeholders, consumer representatives, and an independent chairman. In addition, representatives from certification bodies are present in meetings in order to give some operational advice. c) The Assured British Meat (ABM), the Scottish, Welsh and Northern Irish Beef and Lamb Scheme, involves consumer representatives. Concerning setting standards, the Assured British Meat board adopts any recommendations made by the Technical Advisory Committee (TAC). TAC takes into account recommendations by relevant organizations including the industry, retailers, consumers, DEFRA, Food Standards Agency, welfare groups, and environmental groups (Assured British Meat, 2005d, "Setting Standards").

However, some schemes do not give any information about representatives on their governing boards. The Food Standards Agency has strongly recommended that in order to gain confidence from consumers, food assurance schemes must appoint consumer representatives to their governing boards, and that food assurance schemes should establish a better balance among all stakeholders in their governing boards (Kirk-Wilson, 2002, Food Standards Agency, 2002a).

Conclusions

The Significance of Assured Food Standards

This paper has identified the following points in which the Assured Foods Standards (AFS) schemes have usefulness and significance in improving food safety and its credibility with consumers.

- a) All schemes within AFS are inspected by an independent inspection body. Every step in the whole food chain from farming, processing, storage, transporting to packing is inspected by independent inspectors.

- b) All standards of the AFS schemes are open on their websites. In addition, all schemes show explanations or summaries of their standards on their websites.
- c) The AFS schemes and inspection bodies are accredited by UKAS. An UKAS accreditation means that the AFS schemes are properly inspected. UKAS accredits that an inspection body is truly independent from any influence from the food assurance schemes or farmers and that independent inspectors are sufficiently experienced. UKAS accredits that the inspection body and the AFS schemes conform to the international standard for product certification EN45011.
- d) The schemes within Assured Food Standards satisfy the legal minimum. Many AFS schemes require “strongly recommended levels” in food safety and animal health which are much higher than the legal minimum. These levels that are higher than the legal minimum include a veterinary health plan, salmonella monitoring, traceability of feedstuffs, traceability of seed, no use of antibiotic growth promoters, welfare of livestock, livestock transport schemes, the use of feed assured by UKASTA Feed Assurance Scheme (UFAS), detailed record-keeping on pesticide application and all medicines administrated.
- e) Some schemes appoint more than two inspection bodies. The competition among inspection bodies could help to improve the quality in inspections.
- f) The AFS schemes have good websites, which provide a lot of information on their standards and farming procedures, including newsletters for member farmers. They provide useful information for consumers, such as describing how they try to carry out food safety and other issues.
- g) Concerning traceability, beef, milk and dairy, pigs, and chicken schemes have traceability systems. They have traceability in feedstuffs, medical products, and cattle movement or flock movements. These schemes require detailed record-keeping procedures for traceability systems.

The necessary improvements in Assured Food Standards

The Assured Food Standards schemes need to be improved in relation to the following points.

- a) The AFS must explain at what points their standards exceed the legal minimum. As consumers do not have enough knowledge about the legal requirements of food safety, the AFS schemes should explain what benefits the AFS schemes can provide in food safety, animal welfare, and environmental practices.
- b) The AFS schemes have to show evidence of improvements in food safety that they have achieved. They should disclose scientific data annually about measurable improvements that they have brought about, such as pesticide usage, and salmonella control. Claims of achieved benefits and improvements should be verified with measurable data.
- c) The AFS schemes should improve their inspections. Especially, schemes should introduce at least annual inspections, more unannounced inspections and more random inspections than now. The AFS schemes need to appoint more than one inspection body,

- in order to make the AFS schemes more reliable and transparent.
- d) Detailed information should be provided to consumers about traceability requirements. Some AFS schemes do not sufficiently explain their traceability requirements. The AFS schemes should review downstream controls in the food chain to ensure effective traceability of assured products.
 - e) In order to consider consumers interests, consumer representatives should be involved in the governing boards and standards setting boards in the AFS schemes. Standards setting bodies should represent all stakeholders, including consumers, retailers, producers, enforcers, veterinary and welfare representatives, environmental representatives, and other relevant experts.

Notes

- 3) For example, Assured Food Standards states the following: “How do we ensure that the Red Tractor logo only appears on food that meets its standards? Tight traceability systems are required to keep control. No company can use the Red Tractor logo on food labels or marketing without a licence from AFS..... The vast majority of traceability results prove that licences are complying with the rules” (Assured Food Standards, 2005e, “Traceability given even greater priority”), and “If a food business in another EU member state could demonstrate that its products met all the Red Tractor standards and licence conditions, including the robust rules on independent auditing and whole-chain traceability, it could apply for a licence” (Assured Food Standards, 2005f, “Red Tractor Adheres to EU Rules”). Assured Food Standards mainly emphasises traceability in order to keep control of logo and to verify provenance of assured foods. “The integrity of the Red Tractor logo is fiercely guarded and AFS has been checking that food carrying the logo has passed through an assured chain of production. We will identify the packers and challenge them to produce production records to ensure that raw materials can be traced back to assured farms. Using our database we will ensure that all processors, dairies, cutting plants and packing-houses licensed to pack Red Tractor products will be subject to traceability audit regardless of where they are based or who they are packing for” (Assured Combinable Crops Scheme, 2004b, ‘Newsletter,’ p. 4).
- 4) For example, Brakes, the UK’s leading supplier of frozen, chilled and grocery products to the catering industry has launched a range of “Prime Meat” labelled with the Red Tractor logo. Brakes also launched a Red Tractor liquid milk range in 2005 (Assured Combinable Crops, 2004b, ‘Newsletter,’ p. 4).

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