

SECTION 5

BASIC CONCEPTS WHEN SETTING UP A TRACEABILITY SYSTEM

The definition of traceability is necessarily broad because traceability is a tool for achieving a number of different objectives. No single approach is adequate for every objective. For example even a hypothetical system for tracking salmon, in which consumers scan their packet of salmon steaks at the check-out counter and receive information on the date and location of the animal's birth, lineage, vaccination records, farm location, and use of feed supplements, is incomplete. It does not provide traceability with respect to pest control in the feed store, use of genetically engineered feed, or animal welfare attributes. There are hundreds of inputs and processes in the production of salmon steaks. A system for tracking each and every input and process with a degree of precision adequate for every objective would be virtually impossible.

The characteristics of good traceability systems vary and cannot be defined without reference to the system's objectives. Different objectives help drive differences in the *breadth*, *depth*, and *precision* of traceability systems.

Breadth describes the amount of information the traceability system records. There is a lot to know about the food we eat, and a record keeping system cataloguing all of a food's attributes would be enormous, unnecessary, and expensive. Take for example, a cup of coffee. The beans could come from any number of countries; be grown with numerous pesticides or just a few; grown on huge corporate organic farms or small family-run conventional farms; harvested by children or by machines; stored in hygienic or pest-infested facilities; decaffeinated using a chemical solvent or hot water. A traceability system for one attribute does not require collecting information on other attributes.

The *depth* of a traceability system is how far back or forward the system tracks. In many cases, the depth of a system is largely determined by its breadth: once the firm or regulator has decided which attributes are worth tracking, the depth of the system is essentially determined ...

Precision reflects the degree of assurance with which the tracing system can pinpoint a particular food product's movement or characteristics. Precision is determined by the unit of analysis used in the system and the acceptable error rate. The unit of analysis, whether container, truck, crate, day of production, shift, or any other unit, is the tracking unit for the traceability system. Systems that have large tracking units, such as an entire feedlot or grain silo, will have poor precision in isolating safety or quality problems. Systems with smaller



units, such as individual cows, will have greater precision. Likewise, systems with low acceptable error rates, such as low tolerances for GE kernels in a shipment of conventional corn, are more precise than systems with high acceptable error rates. In some cases, the objectives of the system will dictate a precise system while for other objectives a less precise system will suffice. To establish or review a traceability system the following steps should be completed:

- Benchmark the Traceability requirements of legislation, customers and markets,
- Document existing Traceability and flow systems to provide a detailed gap analysis of risks & deficiencies,
- Identify technology opportunities and Practicalities,
- Establish an action plan to achieve Traceability without sacrificing operating margins.

Tables 1 and 2 reflect the information that should be considered in Finfish and Shellfish Sectors. The examples of documents and records listed in this table, although extensive, are not inclusive of all documents and records that may be useful to verify compliance with legislative and commercial requirements.



Table 1 Farm-Raised Finfish

Hatchery /Nursery Pond	Grow-out Ponds	Slaughter/ Processor	Further Processor	Distributor
Responsibility				
Provide enough information for an auditor to verify the origin and ownership of all shipments of fry /fingerlings. Properly record all hatching production according to the designation.	Identify and segregate fingerlings as to the origin designation. Properly label and identify all marketable size fish sold. Maintain the integrity of the identification. Maintain ownership transfer records.	Segregate fish according to the country designation. Segregate and control throughout the system and properly label product according to the country designation. Document origin of all product.	Transfer labels and identification of all products processed. Operate under a labelling program. Inventory all products according to the origin.	Maintain the integrity of the product. If repackaged, transfer the original identification.
Examples of Records and Activities that may be useful.				
Hatching records	Transportation records	Transportation records	Product inventory	Invoices
Brood stock records	Receiving Records	Receiving Records	Receiving Records	Receiving Records
Receiving records	Purchase Records	Purchase Records	Purchase Records	Purchase Records
Purchase records	Sales Receipts	Plant ID system	Production Records	Sales records
Sales receipts	Feed bills	Sales Receipts	Sale Receipts	Sales Receipts
Feed bills	Feeding records	Shipping manifest	Label Inventory	Labelling requirements
Feeding records	Stocking records	Inspection records	Labelling requirements	Inventory
Site maps	Replacement activities	Quality Control records	Yield sheet	Segregation plan
Production estimates	Segregation plan	Segregation plan	UPC codes	UPC codes
Health records	Feed per acre rate	Production records	Segregation plan	
Ownership records	Pond yield records	Inventory records		
Replacement activities	Locations	UPC codes		
	Site maps	Sampling records		
	Pond acreage	Yield records		
	Harvesting records	Location records		



Table 2 Farm-Raised Shellfish

Hatchery/Nursery	Grow-out	Processor/Dealer	Further Processor/Dealer	Distributor
Responsibility				
Provide adequate information for an auditor to verify the origin of all seed, eyed larvae and set cultch. Record all origin information according to the designation.	Identify and segregate seed according to the origin designation and manner of production. Maintain and identify designation information. Maintain ownership and transfer records.	Maintain segregation of shellfish according to origin and manner of production designation and properly label throughout the system. Document origin and manner of production of all products.	Transfer labels, tags and identification of all products processed. Operate under a labelling program. Include origin and manner of production information in inventory records.	Maintain integrity of the product. If repackaged, transfer original identification.
Examples of Records and Activities that may be useful				
Spawning records	Seed/eyed larvae records	Landings reports	Landings reports	Invoices
Brood stock records	Cultch purchase records	Harvest records	Harvest records	Purchase records
Seed/eyed larvae purchase records	Seed transfer records	HACCP Records	Purchase records	HACCP Records
Feeding records	Inspection/monitoring records	Processing records	HACCP Records	Processing records
Policy records	Dive records	Receiving logs	Processing records	Receiving logs
Cultch purchase records	Transfer permits	Tags	Receiving logs	Tags
Growth records	Transplant records	Shipping records/Bills of lading	Tags	Shipping records/Bills of lading
Spat collection records	Site maps	Shucking records	Shucking records	Inventory records
Site maps	Harvest records	Inventory records	Shipping records/Bills of lading	Order sheets
Production records	Landings reports	Order sheets	Inventory records	Invoices
Import permits	Crop records and reports	Invoices	Order sheets	Sales records
Health records		Invoices	Invoices	Yield records
Crop records and reports		Sales records	Sales records	UPC codes
		Yield records	Yield records	Sampling records



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		UPC codes	UPC records	Plant ID system
		Sampling records	UPC codes	
		Plant ID system	Sampling records	
		Bulk Tagging Transaction Record	Plant ID system	Bulk Tagging Transaction Record
			Bulk Tagging Transaction Record	