

How frontline traceability will interact with the NWCTI system

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The National Whole Chain Traceability Institute (NWCTI) at Oklahoma State University has developed a whole chain traceability software that is currently focused on the beef industry. However, the system has been designed in such a way that expansion to other industries, including fruit, vegetable, grain, and specialty crops, is possible. There are challenges associated with the inclusion of these industries, but their incorporation into the system could provide substantial value to producers. Many growers of specialty food products find that some consumers are willing to pay extra for specialty foods that are sustainably grown and harvested. Many consumers are especially interested in the opportunity to learn more about the farmer, the farm on which the products are grown, and the farm lifestyle. Even products that are, in many aspects, identical to foods consumers regularly purchase, such as Valencia oranges or avocados, can be worth more to consumers if they know more about the production process. The U.S. Department of Agriculture has a slogan to encourage this type of food supply transparency: "Know your farmer, know your food."

A prime example of how this desire can be transformed into economic growth for small farm producers is Top 10 Produce/ Our Locale. Top 10 Produce has pioneered a system in which a shopper at a farmers' market can bring a smartphone to scan a barcode or QR code which will instantly display information about the product (Figure 1). This could include the producer's website, a video about the farm, how the food was grown, suggestions for recipes, and even pictures of the farm family. However, their system is locally based. To reach consumers who cannot visit the farmers' market where the grower sells their produce (say, if the farmer is in California but the consumer is in Chicago), top 10 Produce can tie into the NWCTI system. This enables information to be readily available, even if the product has gone through several transactions before it gets to the consumer. The consumer could obtain whatever information about that journey the producer decides to share with the consumer. At each transaction, the barcode or QR code can record the movement through the supply chain so that the consumer can know all the steps the product took before it reached their dinner table. Meanwhile, the producer can keep track of the time along the way (to be sure the product that the consumer receives is as fresh as possible), and even keep track of the temperature of the food.



Figure 1. Example of information visible to a consumer through a whole chain traceability system.

A whole chain traceability system can provide additional benefits, such as improving food safety by facilitating food recalls or disseminating product information. Extending OSU's whole chain traceability system to interface with other traceability systems, such as the Top 10 Produce/Our Locale system, lets consumers interactively learn more about where their food came from and how it was grown – They can “know their farmer, know their food.” In turn, they can give feedback to the producers, so the producers can provide better products. Producers can keep track of their product as it goes through the supply chain, helping improve product quality and safety.

A core component of the system is the database mapping module. This module facilitates interfacing the NWCTI traceability software with other traceability systems. For example, the pilot NWCTI traceability software interfaces directly with the traceability system operated by Top 10 Produce LLC. Top 10's system permits producers (its current clients produce oranges, avocados, strawberries, and other fruits and vegetables, as well as beef cattle) to share photos of themselves and their farm, information about how the products were grown, recipes, and any other information they believe consumers might want. Food conscious consumers can view this information simply by scanning the QR code on the product at the grocery store with their smartphones. Consumers can in turn provide real-time feedback to the producers about the quality of the product, or ask questions about the product and how it was raised. The interface permits Top 10 to extend its relatively short supply chain both downstream and upstream through multiple stages, expanding the number of participants that can access its system even if they are several stages removed. Similar interfaces could be developed with any other traceability systems that need the data management features the NWCTI system provides, as long as the product can be digitally identified.

For more information about the NWCTI system, contact Dr. Michael Buser using the information below. YouTube videos related to the NWCTI system can be viewed at <https://goo.gl/MwPhoS>.



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