



# ANALYSIS OF LEAFY GREENS FARMING TRACEABILITY SYSTEMS



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## INTRODUCTION

Foodborne illness outbreaks associated with romaine lettuce in recent years have raised concerns about the ability to effectively trace contaminated product from the end-consumer back to through the supply chain. The U.S. Food and Drug Administration has emphasized that improved traceback efficiencies could greatly enhance outbreak investigations, prevent illnesses and reduce the financial impact of market withdrawals for growers, processors, retailers and restaurants.

The California Leafy Greens Marketing Agreement (LGMA) is committed to improving its required food safety practices in the interest of protecting public health. An important requirement of all LGMA members is verification that a product traceability system is in place for all leafy greens produced.

As part of the LGMA food safety program, compliance with the mandatory product traceability requirement is verified through audits conducted by government agricultural inspectors several times per year.

While no specific type of traceability system is required by the LGMA, all members must be able to show they have adequate processes in place. Since the LGMA requires 100% compliance with all food safety requirements, every certified member of the LGMA has been determined to have a traceback system in effect.

California LGMA members represent approximately 99% of all leafy greens grown in the state—accounting for about 80% of the nation's lettuce production.

In an effort to learn more about the value of the LGMA traceability requirements and to assess the capabilities of members' traceback systems, the LGMA conducted a survey of its membership. Fifty-two of the 93 members responded to a series of questions about their traceability programs, providing a 56% response rate. The respondents span a variety of operation types including large and mid-sized processors, large and mid-size commodity shippers and smaller specialty item grower shippers.

The objective of the survey is to identify how leafy greens producers' traceback systems are contributing to outbreak investigations and if there are additional requirements that could improve the speed and accuracy in finding the source of future outbreaks that may be linked to leafy green farms.

## SUMMARY OF SURVEY RESULTS

**100%** of LGMA member companies have a traceback system in place. This is verified through regular government audits under the LGMA.

**100%** can locate the exact field where a product was grown and can identify the initial customer who received it in 2 hours or less.

**100%** capture traceback information to identify the grower, ranch/field and date of harvest for all leafy greens they produce.

**100%** capture traceback information on activities involving growing and harvesting the product.

**100%** of respondents test their traceback systems at least once a year to verify it is working.

**96%** of respondents' traceback systems are capturing information on the harvest crew who picked the product.

**85%** use electronic tracking as all or part of their traceability system. 15% are using a paper-based system.

**63%** of respondents are utilizing the Produce Traceability Initiative for labeling and traceback.



## CONCLUSIONS



It is clear that with the LGMA's requirement to have a traceback system in place and the level of detail being collected by LGMA member companies, California leafy greens producers are capable of significantly assisting government investigations of outbreaks and recalls.

However, in practice, traceback systems within the supply chain are not working as quickly as needed to prevent illnesses and identify the source of contamination.

This underscores the need for the LGMA and the leafy greens industry to work more closely with the FDA to determine how traceback systems at the production end can better assist outbreak investigations.

The most challenging issues to overcome likely involve inconsistent traceback capabilities further up the supply chain and accessing valuable leafy greens labeling information from the end-consumer.

The LGMA supports an ongoing project coordinated by several food industry associations to examine and test traceback capabilities throughout the supply chain. The goal is to determine where breakdowns may be occurring and to learn specifics about additional traceback information that may be needed to assist government investigations to more quickly and effectively locate the source of contamination during an actual outbreak.

The LGMA is committed to making any necessary improvements to its required food safety practices to prevent future illnesses.

# SURVEY FINDINGS

The LGMA requires that all producers be able to trace product forward to the initial customer back to the field where it was produced. Verification that a traceback system is in place is part of regular government audits of LGMA member operations that occur 4 to 5 times per year.

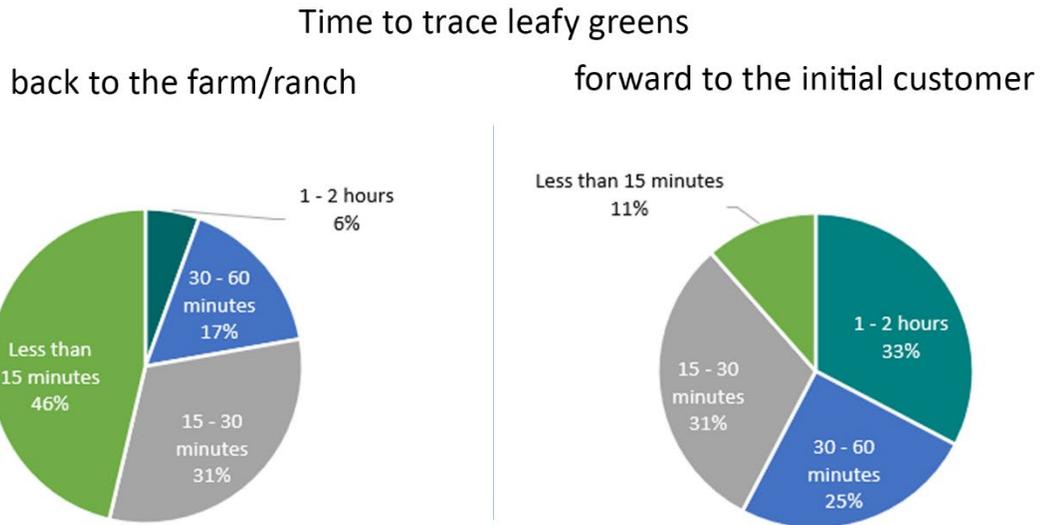
**BECAUSE THE LGMA MANDATES ITS MEMBERS COMPLY WITH THIS REQUIREMENT, 100% OF THE LGMA MEMBERS HAVE A TRACEBACK SYSTEM IN PLACE.**

This survey was conducted to assess more details about the capabilities and effectiveness of LGMA member traceback systems.



## AVERAGE TIME TO TRACE PRODUCTS

**MOST LGMA MEMBERS (75%) REPORT THEY CAN TRACE PRODUCT FROM THE FIRST CUSTOMER WHO PURCHASES PRODUCT BACK TO THE FIELD WHERE IT WAS GROWN IN 30 MINUTES OR LESS. ALL SAY THEY CAN PROVIDE THIS INFORMATION WITHIN 2 HOURS.**



This is a critically important part of the traceback system and indicates that if producers are provided with information from labeling on packages or containers of lettuce implicated in an outbreak or recall, they can quickly track this product to the specific field where it was grown.

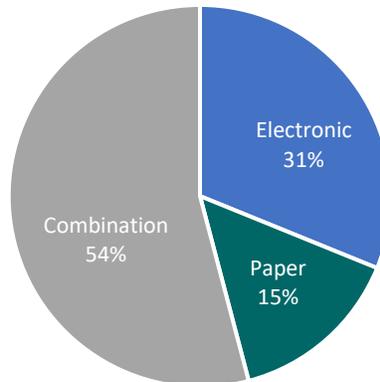
When it comes to tracking product from the field where it was grown to the initial customer who received the product, more than 85% of respondents say they can provide this information in less than one hour. All can accomplish this in less than 2 hours.

This capability is critical in assisting leafy greens producers to recall product should a particular field be identified as potentially linked to an outbreak.

## TYPES OF TRACEABILITY SYSTEMS UTILIZED BY LEAFY GREENS PRODUCERS

**100% OF LGMA MEMBERS HAVE A TRACEABILITY SYSTEM. 85% OF THEM USE ELECTRONIC TRACKING AS ALL OR PART OF THEIR TRACEABILITY SYSTEM.**

Traceability System



In recent outbreaks, the FDA has reported difficulty in gaining accurate and timely traceback information due to inadequate and antiquated paper-based systems. Information gathered in this survey shows that a small percentage (15%) of LGMA members utilize paper-only systems.

It should be noted that the ability and time to retrieve traceback information as noted in the above section (Average Time to Trace Products) does not appear to be significantly hampered by paper-based systems with 100% of respondents indicating they can trace product through their systems in a matter of hours.

## WHAT DOES TRACEBACK COVER?



Several activities are involved in bringing leafy greens products to market.

The companies who are members of the LGMA are often referred to as ‘handlers.’ Handlers are responsible for the sales and distribution of leafy greens. Handlers often work with many different farmers to supply their leafy greens. Handlers may also be farmers of leafy greens themselves. Some LGMA handler-members are also processors of leafy greens, but it should be noted that the LGMA program does not cover processing activities, but focuses only on growing, packing, cooling and distribution.

All leafy greens produced under the LGMA are grown in an outdoor field or farm and many of the LGMA’s required food safety practices concern how leafy greens are farmed. The LGMA’s required food safety practices are also prevalent throughout harvest activities and many leafy greens are packaged during the harvest operation.

Some leafy greens are harvested directly into consumer packaging in the field, while some are harvested into various kinds of shipping containers. These products usually go from the field to a cooling facility where they await transportation to a customer. Meanwhile, some leafy greens are harvested, placed in a bulk container and go to a processing facility for further packaging or mixing with other commodities.

From the cooling or processing facility, leafy greens products may be shipped directly to a retail or restaurant distribution facility. Some may go to a wholesaler who then sells the product to a store or restaurant.

Further complicating matters, some leafy greens are sold to secondary processors who may be located anywhere in the country. These processors may repackage leafy greens mixing them with other food ingredients to make a host of packaged food products to be enjoyed by consumers.

When it comes to traceback systems, LGMA members are responsible for keeping records of the product as it goes through the various production practices. This includes activities like growing, harvesting, cooling, processing and distribution. LGMA members are required to track all activities up to shipment to the initial customer who purchases the product. This initial customer may be a wholesaler, retailer, restaurant or processor. Once the product leaves the LGMA member’s distribution facility and goes to this first customer, the LGMA member may lose the

ability to track the product – particularly if the product is removed from its original package or shipping container.

The LGMA handler-members and growers who responded to this survey report they are tracking several activities involved in the production of leafy greens.

**ALL OF THE RESPONDENTS (100%) IN OUR SURVEY INDICATE THEY ARE KEEPING TRACK OF INFORMATION ABOUT GROWING AND HARVESTING THE PRODUCT.**

What does your traceability program cover?

52 responses



Information about growing and harvesting are critically important to any traceback system, so it is not surprising that all respondents are tracking that information.

When asked what kind of information they are tracking with respect to growing and harvesting information, all of the respondents report they track who is the grower of the product, the location of the ranch, or field and the date of harvest. A majority (79%) also keep track of the time of day product is harvested. Additionally, the vast majority (98%) keep track of what is referred to as the 'lot.' A lot is a sub-section of product harvested from a ranch, field or farm.

Which of the following does your traceback program include?

52 responses

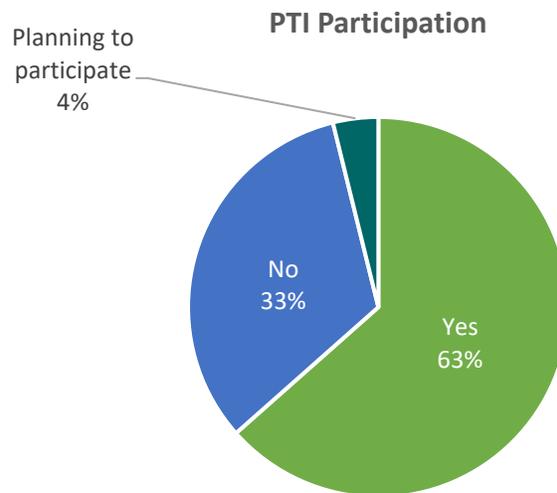


## PARTICIPATION IN THE PRODUCE TRACEABILITY INITIATIVE

Over a decade ago, the produce industry launched a voluntary effort to develop a standardized approach to tracking and tracing produce through the supply chain that would enhance the speed and efficiency of traceability system for all produce items, not just leafy greens.

The Produce Traceability Initiative (PTI) is sponsored by Canadian Produce Marketing Association, GS1 US, Produce Marketing Association and United Fresh Produce Association. This group continues its work to encourage adoption of PTI among producers, sellers, buyers and processors of produce and the system has been adopted by many producers.

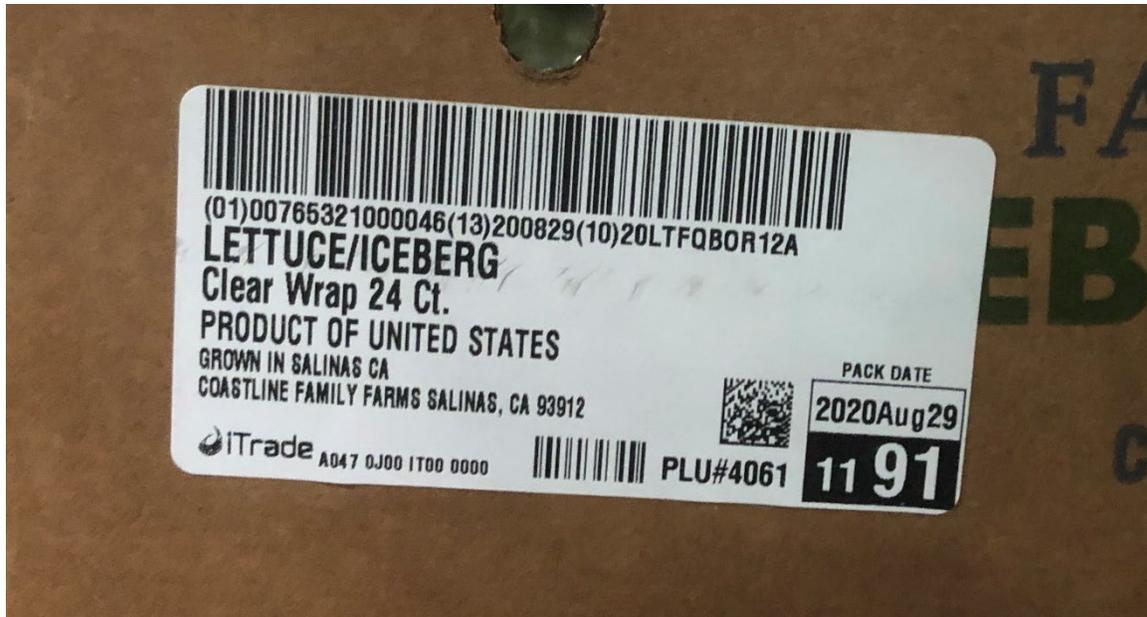
**LGMA SURVEY RESULTS INDICATE THAT TWO-THIRDS (63%) OF RESPONDENTS ARE CURRENTLY USING A PTI SYSTEM FOR THEIR TRACEBACK SYSTEM.**



## KINDS OF TRACEABILITY LABELLING

At the heart of the Produce Traceability Initiative are computer-generated labels that utilize a common scannable code, known as a G10 code, which contains information on the grower, field location, harvest date and time. The benefit of the PTI label is that it is meant to be universally read by anyone using the PTI system. Many LGMA members place this PTI label on the outside of containers or cartons of leafy greens.

Below is a sample of what a PTI label looks like:



LGMA members may also utilize other identification labels either alone or in conjunction with a PTI label. These labels or tags may be placed on consumer packages, cartons, pallets or truckloads of product to track and maintain information about growing and harvesting activities. These labels come in many different forms include field tags, bread stickers, twist ties, ink jet applied directly to cartons and others.

## PLACEMENT OF LABELS

When it comes to where producers are placing visual traceability labels, the industry uses two common terms – **primary packaging** and **secondary packaging**.

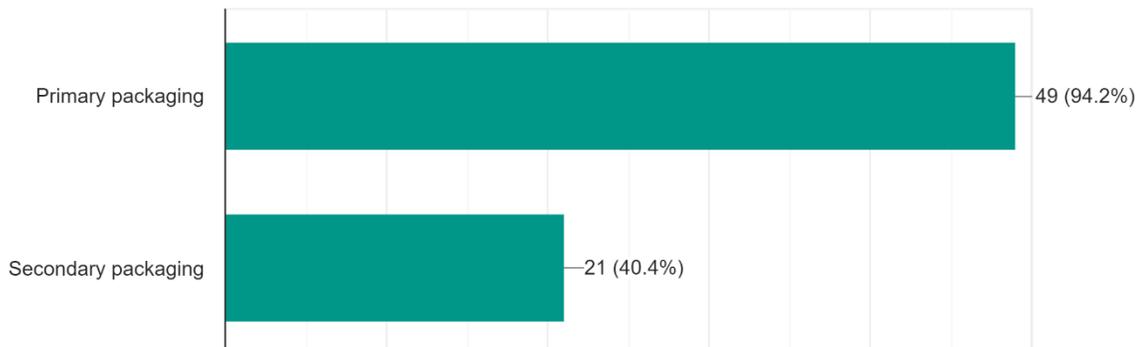
A **primary package** is defined as packaging that touches the product. For example, a consumer package, like a cellophane sleeve, that touches the product inside would be considered a **primary package**. In the case of a bulk packed product, the carton that contains loose lettuce bunches that touch the inside of the carton is also considered a **primary package**.

Meanwhile, a **secondary package** would include something like a carton that contains individual packages of lettuce. For example, a carton that contains consumer packages of romaine hearts would be considered a **secondary package**.

**THE VAST MAJORITY (90%) OF RESPONDENTS REPORTED PLACING TRACEABILITY LABELS ON PRIMARY PRODUCT PACKAGING, WHILE OVER 40% REPORT PLACING THIS DATA ON SECONDARY CASE PACKAGING. MANY COMPANIES DO BOTH.**

Where is your visual traceability placed?

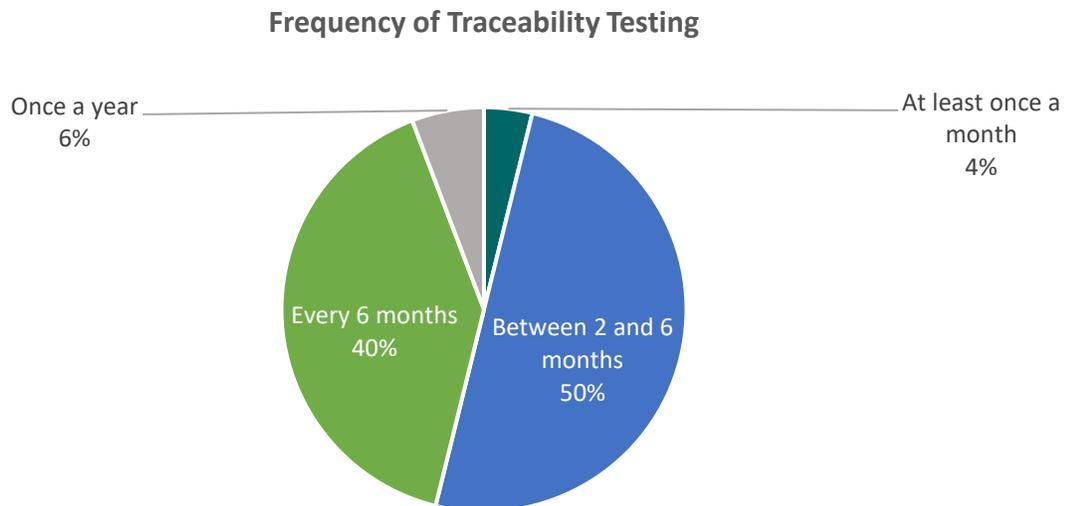
52 responses



## TESTING OF TRACEABILITY SYSTEMS

Survey findings indicate that LGMA members work to ensure their traceback systems are operating accurately.

**ALL LGMA MEMBERS REPORTED TESTING THEIR TRACEABILITY SYSTEMS THROUGH MOCK RECALLS OR AUDITS AT LEAST ONCE A YEAR, HOWEVER THE VAST MAJORITY (90%) CONDUCT THESE TESTS EVERY 2 TO 6 MONTHS AND ALL TEST AT LEAST ONCE PER YEAR.**



This is another important indication that leafy greens producers are prepared at all times to help facilitate government investigations of foodborne illness outbreaks in tracking product to the field where contaminated product may have originated.