California Leafy Greens Farmers Continue to Put Food Safety First
In 2007, following a tragic outbreak of E. coli that sickened over 200 people, California farmers made an unprecedented commitment to protecting public health through the creation of the California Leafy Green Products Handler Marketing Agreement (LGMA).

The program’s goal is to assure safe leafy greens and confidence in our food safety programs. The LGMA is the best model to produce safe food because it establishes a culture of food safety on the farm.

LGMA Members are committed to protecting public health by putting food safety first. They work every day to keep food safe because it is the right thing to do.
How the LGMA Works

**FOOD SAFETY PRACTICES**
Based on sound science and designed to reduce risk of contamination when growing and harvesting greens.

**GOVERNMENT AUDITS**
Multiple announced and unannounced audits are conducted annually by State of California auditors.

**CONTINUOUS IMPROVEMENT**
Corrective actions and industry-wide training drive advancement.

**ENFORCEMENT**
Each citation is reviewed by the Compliance Officer and must be corrected. Corrections are verified by the auditors.
Just as I had great leaders to learn from and follow in Joe Pezzini and Jamie Strachan, it is with great confidence that I hand off the chairmanship to Ron Ratto of Ratto Bros. I believe strongly that Ron will do a great job of leading our organization into the future.

I’m proud of what we have accomplished over the last three years, as an organization and as an industry. Following are some of the accomplishments that mean the most to me:

**Industry commitment to food safety**
LGMA membership is voluntary, however once you join the rules and requirements are mandatory and backed up by state law. It is remarkable that each year nearly 100 companies invite government auditors onto their farms to improve food safety.

**Seeing continuous improvement**
LGMA members have been improving their audit scores and doing a better job of implementing food safety practices on the farm. They focus on fixing problems when they occur, and keeping them from becoming issues again.

**Reaching out**
Over the last two years, we have built a relationship with the organization STOP Foodborne Illness – a group that represents victims of foodborne illness. This has been one of the most satisfying and inspiring things that we have done; sharing stories with victims of food borne illness has only served to strengthen our commitment to food safety.

---

**A greater focus on training**
The LGMA has become an organization that does much more than simply audit its members and make sure we’re following the rules. In recent years it has greatly increased its training and education efforts, doing more each year to help our members and our farmers do a better job of implementing the food safety practices that are required, through a program called LGMA-Tech. Read more about the comprehensive new courses offered on page 14.

**Preparing for FSMA**
The new federal food safety rules, through the Food Safety Modernization Act, will soon be a reality. For the last several years the LGMA has been preparing to operate under these new rules. We have done our best to raise awareness among our partners at FDA of how the LGMA program operates, and we feel ready for the new day of federal food safety oversight.

I have enjoyed my time as chairman of the LGMA, and I leave the position knowing that the organization is still in great hands. Good luck Ron, as we continue our commitment to food safety through this important effort.

---

Ryan Talley, Talley Farms
Representative Lois Capps (D – Santa Barbara), walked through a LGMA government audit, watching as the many required food safety practices were verified. It was gratifying to us that Representative Capps was well-versed in the issues around food safety, as she is a key voice in the ongoing discussions about the Food Safety Modernization Act in Washington.

The FDA released its strategy for overseeing the implementation of the new FSMA rules for food safety on farms and in facilities. In this document, the FDA stressed the need to coordinate and collaborate with “multiple public and private sources, including FDA and partner agencies, USDA audits, marketing agreements and private audits.”

The LGMA was very pleased to host two farm food safety tours in 2014 for over twenty people from the FDA and from produce retailers and restaurants. We’ve found there’s no substitute for seeing the LGMA program first-hand and meeting the people responsible for producing safe leafy greens. The impact of these kinds of educational opportunities last long after the tours are over.

The LGMA Tech Training Program officially launches. The courses are targeted at food safety professionals who supervise workers at harvest companies and labor contractors. Courses are offered throughout the different leafy greens farming regions in California and Arizona. They are offered in both English and Spanish.

The LGMA released a new video for use in all its food safety training programs that shares the stories of people who have experienced the tragic effects of foodborne illness. In order to truly educate people and make real change, everyone on the farm needs to understand why preventing foodborne illness is so important. This video strives to build that understanding and is making an impact.

November 2014

December 2014

May 2014

September 2014

Training Improvements
Audit Results

At the heart of the LGMA program are its accepted Food Safety Practices (also known as GAPs, or Metrics). LGMA members are required to ensure that these practices are implemented on all of the farms that grow the leafy greens they handle.

The LGMA verifies that these practices are being implemented by auditing its members regularly. Government auditors employed by the state of California and trained and licensed by the United States Department of Agriculture (USDA) conduct all LGMA audits.

On average, LGMA members are audited five times a year. Scheduled audits take place once during every two-month period in which the company is active in the market. In addition each LGMA member has at least one unannounced audit per year.

The total number of audits has declined in recent years; this has been driven primarily by consolidation through company mergers and acquisitions in the industry. Fewer LGMA members equals fewer audits. This decline was accelerated in 2014/15 by California’s drought, which greatly reduced the number of farms growing leafy greens in California’s Central Valley.

Each LGMA audit consists of 185 checkpoint and members are required to be in compliance with all of them. Government auditors conduct all LGMA audits. When an auditor identifies a checkpoint that is not in compliance with the LGMA Metrics, this is considered a non-conformity. All non-conformities are reviewed by the LGMA Compliance Officer. The Compliance Officer then assigns citations as warranted.

Each non-conformity with the metrics can be assigned one of four citation levels. These range from a minor infraction (for relatively minor issues that are corrected at the time of the audit) to flagrant violations (that can lead to decertification from the program). The four kinds of citations are described below:

<table>
<thead>
<tr>
<th>Flagrant Violation</th>
<th>Major Deviation</th>
<th>Minor Deviation</th>
<th>Minor Infraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>A violation of the LGMA practices that significantly increased the risk of delivering unsafe product into commerce. Penalties can range from temporary to permanent decertification.</td>
<td>A violation that does not necessarily result in unsafe product. A corrective action plan must be provided within 5 days, an on-site inspection within 3 days provides verification. Uncorrected major deviations may be elevated to a flagrant violation.</td>
<td>A deviation from the LGMA practices which can be addressed within 5 days of the inspection. This type of deviation does not necessarily increase the risk of a food-borne illness. Multiple violations of the same type within a year may elevate the violation to a Major Deviation.</td>
<td>An infraction from the LGMA practices that does not necessarily increase risk of a food borne illness. The infraction can be corrected before the inspector leaves the premise. Multiple minor infractions will lead to a minor deviation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LGMA Audits</th>
<th>2010/11</th>
<th>2011/12</th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled</td>
<td>490</td>
<td>483</td>
<td>448</td>
<td>413</td>
<td>388</td>
</tr>
<tr>
<td>Unannounced</td>
<td>91</td>
<td>90</td>
<td>93</td>
<td>88</td>
<td>79</td>
</tr>
<tr>
<td>Total</td>
<td>581</td>
<td>573</td>
<td>541</td>
<td>501</td>
<td>467</td>
</tr>
</tbody>
</table>
Audit Results continued

The 2014/15 leafy greens season saw a continuation of positive trends since the 2010/11 season with the number of citations for non-conformities dropping greatly each year. In 2014/15, LGMA audits covered nearly 75,000 audit checkpoints; the 370 citations assigned represented less than half of a percent of all audit checkpoints.

Overall citations for nonconformities with the LGMA metrics fell to 370, the lowest total since the inception of the program. With the exception of soil amendments, there was a reduction of citations issued across all categories. And for the fourth consecutive year, there were no flagrant violations issued.

Another way to compare results is to look at the number of violations issued per audit. Again, the trend here was also very positive, with less than one citation being issued per audit.

*The LGMA requires that all nonconformities are corrected, resulting in an ultimate compliance rate of 100%*
The Big Picture

In 2014/15 the leafy greens farming community continued to improve its compliance with the LGMA’s rigorous food safety practices. The steady decline in citations for nonconformities illustrate the industry’s focus on protecting public health by doing everything it can to raise the bar for food safety.

The LGMA will continue to use these results to improve its food safety program. Analyses of problem areas will aid in further development of the LGMA Tech training program, so the LGMA can assist the leafy greens industry in doing an even better job in complying with the Metrics.

While continuous improvement is a core value of the leafy greens industry, so is continual vigilance. Today’s trends are positive and clearly demonstrate the industry’s commitment, but growers and shippers recognize that they must continue to do everything they can to mitigate risks and protect public health. Their commitment to doing the right thing is the best way to ensure the continuous improvement that is expected, and that we expect of ourselves.

The chart below shows the distribution of audit citations by category; In the following pages we will provide more information on each of these areas. As in past years, we see that the vast majority of citations are Field Observations, followed by Water Use. This is mostly due to the fact that these requirements are repetative and performed by a variety of people. This fact continues to underscore the need for constant and comprehensive, industry-wide training programs.

2014/15 Distribution of Audit Citations by Category
General Requirements

LGMA members must meet specific requirements related to their food safety management program; these include having a written compliance plan in place, an up-to-date growers list, a traceability process and two designated individuals who are available 24/7 to oversee their food safety program.

After a brief upturn in citations in this area last year, 2014/15 brought a return to the previous rate of decline.

---

### General Requirements Citations

- **15** Checkpoints per audit in this category
- **7,005** Total checkpoints audited
- **14** Checkpoint citations issued
- **99.80%** Compliance rate*

---

*The LGMA requires that all citations be corrected, ultimately resulting in 100% compliance.

---

### General Requirements Audit Category

The General Requirements audit category accounts for 8% of audit checkpoints, but only 4% of citations given in 2014-15.

On average a General Requirements issue was cited every 33 audits, with a citation occurring for every 500 checkpoints.
Environmental Assessments

LGMA Members are required to conduct pre-planting, pre-harvest, and daily harvest assessments of all their leafy green fields. Auditors review these assessments on the LGMA audit and verify compliance with the Metrics.

This is another area where we see steady improvement, citations in 2014/15 were at their lowest level ever even though the LGMA Metrics related to animal intrusions were updated in 2013 (more details on the next page.) The fact that citations declined despite these changes indicates how quickly the industry was able to implement the new requirements.

Environmental Assessment Citations

The Environmental Assessments category accounts for 20% of audit checkpoints, but only 5% of citations given in 2014-15.

On average, an Environmental Assessments issue was cited every 27 audits, with a citation occurring for every 989 checkpoints in this category.
Environmental Assessments: High Compliance with New Food Safety Requirements

When the LGMA was formed in 2007, much of the focus was on controlling the risk of E. coli 0157:H7 contamination. After all, that was the pathogen involved in the tragic outbreak tied to California grown spinach that led to the organization’s formation.

That priority led to the identification of five animals of significant risk -- cattle, sheep, deer, pigs and goats -- that would become the focus of the program’s required practices related to animal intrusion.

Over time it became clear that there were other pathogens of concern besides E. coli 0157:H7, including salmonella. Placing so much emphasis on the “animals of significant risk” might lead growers to overlook risks presented by other animals and birds.

As a result, the Western Growers Association (WGA) worked with environmental groups and grower organizations to bring revised metrics for environmental assessments to the LGMA board to consider in 2013. The board accepted these changes and those requirements became part of the LGMA metrics for the 2014/15 season.

The new revised Metrics require handlers to have SOPs in place describing their policies for dealing with animal intrusions. Those policies must include practices related to both low risk and medium/high risk situations. Low risks can be dealt with according to the company’s SOP. The medium or high risks must be handled according to the LGMA requirements, including clearly established no harvest areas when appropriate.

To help the industry prepare for the new regulations, the LGMA held a series of workshops in Arizona and California, and created and distributed specific tools to all LGMA members.

The low number of citations in the area of environmental assessments in 2014/15 shows how quickly leafy greens growers were able to implement the new rules.
Water Use

The LGMA metrics include specific water sampling and testing requirements for all water used in the production and harvest of leafy greens.

Despite significant improvements, we continue to see a relatively high numbers of citations in this category. The areas that were most troublesome during the 2014/15 season included ranch maps not having all of the required information, not having water test results available at the time of audit, and not having chlorine testing results available at the time of the audit.

Water Use Citations

The Water Use audit category accounts for 15% of audit checkpoints, but 19% of citations given in 2014-15.

On average a Water Use issue was cited every 7 audits, with a citation occurring for every 178 checkpoints in this category.

*The LGMA requires that all citations be corrected, ultimately resulting in 100% compliance.
Soil Amendments

The LGMA has specific requirements for soil amendments used in the production of leafy greens. It is very important that soil amendments have been properly treated and tested to ensure they are pathogen free. Precise documentation is required for auditor verification in this category.

Although citations in this category ran counter to the trend of continued improvement for 2014/15, we can report that no major deviations were assigned for violations in this category. In fact, citations in this category were all very low. Citations in the Minor Deviation level primarily involved missing elements in documentation. The higher number of citations in the category reflects the LGMA’s very stringent requirements for proper paperwork. In all cases, the missing data was ultimately provided and verified by auditors.

*The LGMA requires that all citations be corrected, ultimately resulting in 100% compliance.

The Soil Amendments audit category accounts for 3% of audit checkpoints, but 10% of citations given in 2014-15.

On average a Soil Amendments issue was cited every 13 audits, with a citation occurring for every 76 checkpoints.
Worker Practices

The LGMA Metrics require a range of Standard Operating Procedures (SOPs) related to worker practices in the field. These include having written visitor policies, a documented sanitary facility program, and a worker health practices program. The LGMA audit includes 32 checkpoints on worker practices.

Worker Practices Citations

36
Checkpoints per audit in this category

16,812
Total checkpoints audited

48
Checkpoint citations issued

99.77%
Compliance rate*

Citation Analysis continued

Worker Practices audit category accounts for 19% of audit checkpoints, but only 13% of citations given in 2014-15.

On average a Worker Practices issue was cited every 10 audits, with a citation occurring every 350 checkpoints.

*The LGMA requires that all citations be corrected, ultimately resulting in 100% compliance.
**Field Sanitation**

The LGMA metrics include specific requirements for cleaning and sanitizing farm equipment. These requirements include having written sanitation SOPs and a daily food safety harvest assessment.

Perhaps no category that LGMA tracks has shown the level of improvement in audit results as field sanitation. Improved training programs, like the Cleaning and Sanitizing Harvesting Equipment course that debuted last season as a part of LGMA Tech (see next pages), have helped the industry improve its day-to-day practices.

---

**Field Sanitation Citations**

*The LGMA requires that all citations be corrected, ultimately resulting in 100% compliance.*

The Field Sanitation audit category accounts for 19% of audit checkpoints, but only 10% of citations given in 2014-15.

On average a Field Sanitation issue was cited every 12 audits, with a citation occurring for every 430 checkpoints.
Field Sanitation: Targeted Improvement Through Training

One important audit category that, over the years, has had high citation numbers was field sanitation. While most other areas in the Metrics improve every year, there is a clear need to do more to help farmers and shippers comply with sanitation requirements -- things like properly measuring chlorine and pH levels and sanitizing field harvesting equipment.

The LGMA, prioritized sanitation in 2014, making it the topic of the first LGMA Tech training course to be presented to industry.

The course, developed by LGMA Technical Director Mike Villaneva and Dr. Sergio Montenegro-Nieto of Food Safety CTS, was completed early in 2014. Workshops were presented free of charge to growers, shippers and harvest companies throughout California and Arizona. “The response was great,” said Villaneva. “We are already seeing positive movement in sanitation numbers on LGMA audits.”

The Cleaning and Sanitizing Harvesting Equipment course includes training guides for supervisors, slides, pictures and videos to illustrate methodologies, and activities for students. Once completed, the LGMA Tech program will include five additional courses: Employee Hygiene and Handwashing, Train-the-Trainer, Conducting Environmental Assessments, Managing Personnel and Harvest Operations, and Sampling and Testing Procedures. The courses will be completed this year, with workshops beginning in the fall of 2015.
Field Observations

The LGMA audit checklist includes a visual farm inspection element. In this section of the audit an auditor verifies proper water and soil amendments use, and employee hygiene and hand washing. Auditors also survey the ranch for any sources of fecal contamination.

Although great improvement has been seen over the years in the Field Observations category; this is the audit category with the highest number of citations issued and it is an area that the LGMA-Tech training program will continue to focus on.

Field Observation Citations

- **30** Checkpoints per audit in this category
- **14,010** Total checkpoints audited
- **145** Checkpoint citations issued
- **98.97%** Compliance rate*

*The LGMA requires that all citations be corrected, ultimately resulting in 100% compliance.*

The Field Observations audit category accounts for 16% of audit checkpoints, but 39% of citations given in 2014-15.

On average a Field Observations issue was cited every 3 audits, with a citation occurring for every 97 checkpoints.
Major Deviations
Most nonconformities cited during LGMA audits are minor and pose a low risk for contaminating leafy greens products. These issues, cited as Minor Deviations or Minor Infractions, are often corrected during the audit. Handlers later submit Corrective Action Plans outlining how they will prevent them from happening again.

This section provides a brief summary of the more significant nonconformities cited this year—the Major Deviations. There were 16 Major Deviations assigned for citations in the 2014-15 fiscal year.

Distribution of Major Deviations Citations

As with minor infractions/deviations, in each case handlers corrected the issues and retrained employees or adjusted their practices to ensure compliance with the Metrics. The handlers were then re-audited within one week to verify that they had implemented the corrective actions.

The major deviations can be broken down as follows:

Not fully implementing LGMA food safety practices (4)
In two instances, some of the steps for pre-season/daily harvest assessments were not completed. The other two violations were related to specific water sources that were not being tested/monitored monthly as required by the Metrics. In all cases, food safety programs and procedures were corrected as necessary to comply with the Metrics.

Improperly completing records (5)
In four cases, daily harvest assessment forms were either completed incorrectly or not at all. In the fifth, the cleaning and sanitizing log was not completed correctly. In all cases, the employees responsible for these activities were re-trained on proper documentation procedures and/or disciplined.

Evidence of Animal Intrusion (2)
In both instances, feces were found near water distribution systems. The handlers removed the feces and updated their practices to match environmental assessment requirements.
Major Deviations - continued

The major deviations can be broken down as follows:

**Improperly maintained ranch sanitary facilities (2)**
In both cases, ranch sanitary facilities were not being serviced/maintained regularly as required by the Metrics. The handlers contacted their maintenance companies and worked out a routine servicing schedule for the sanitary facilities.

**Worker Hygiene (1)**
A citation was given for a worker spitting on a road near a field. The worker was reprimanded and re-trained.

**Missing documentation at time of audit (1)**
Water source and testing information was not available during the audit. It was later provided to the auditor.

**Wrong Julian dates (1)**
Containers of packed product were labeled with the wrong Julian date. The error was corrected during the audit, and the employee responsible for this activity was re-trained.
## Advisory Board

### Members
- Tom Nunes – The Nunes Company
- Joe Pezzini – Ocean Mist Farms
- Jamie Strachan – Growers Express
- Mark Borman – Taylor Farms
- Steve Church – Church Brothers
- John D’Arrigo – D’Arrigo Brothers
- Ron Ratto – Ratto Bros., Inc.
- Jan Berk – San Miguel Produce
- Ryan Talley – Talley Farms
- Victor Tognazzini – Gold Coast Packing
- Jack Vessey – Vessey and Company
- Eric Wexler – Tanimura and Antle
- Steve Powell – Peter Rabbit Farms
- Barbara Matthews - Public Member

### Alternates
- Tom Russell – Pacific International Marketing
- Mike Costa – Mann Packing
- Tom Mack – Dole
- Bardin Bengard – Bengard Ranch
- Phil Adrian – Coastline/Sunridge
- Courtney Parker – Fresh Express
- Will Daniels – Earthbound Farm
- Dan Sutton – Pismo Oceano Vegetable Exch.
- John Jackson – Beachside Produce
- Mitch Ardantz – BoniPak
- Megan Chedwick – Church Brothers
- Todd Brendlin – Crystal Organic
- Lorri Koster – Mann Packing

## Committees

### Technical
- Ariane Allan - Fresh Kist
- Bardin Bengard - Bengard Ranch
- Jim Brennan - Alliance of Tech. Profs
- Michael Brautovich - Earthbound Farms
- Megan Chedwick - Church Bros.
- Mike Costa - Costa Farms
- Larry Cox - Sunridge Farms
- Lisa Fuentes - The Nunes Co.
- John Jackson - Beachside Produce
- Sharan Lanini - Fresh Express
- Bob Martin - Rio Farms
- Gurmail Mudahar - Tanimura and Antle
- Courtney Parker (Chair) - Fresh Express
- Ron Ratto - Ratto Bros., Inc.
- Jeff Saleen - Bonipak Produce
- Ken Stearns - D’Arrigo Bros. of California
- Chato Valdez - Sabor Farms

### Executive
- Phil Adrian - Coastline Family Farms
- Courtney Parker - Fresh Express
- Joe Pezzini - Ocean Mist Farms
- Ron Ratto (Chair) - Ratto Bros., Inc.
- Jamie Strachan - Growers Express LLC
- Ryan Talley - Talley Farms
- Victor Tognazzini - Gold Coast Packing

### Communications
- Phil Adrian (Chair) - Coastline Family Farms
- Matt Seeley - The Nunes Company
- Abby Taylor-Silva - Grower Shipper Assn
- Victor Tognazzini - Gold Coast Packing
- Steve Church - Church Bros. Produce
- Dan Sutton - Pismo Oceano Vegetable Exch.
- Kori Tuggle - Church Bros. Produce

## Staff

- Mike Villaneva
  Technical Director
- April Ward
  Communications Director
- Scott Horsfall
  CEO
- Amarachi Okemiri
  Member Services Coordinator
- Jonathan Field
  Compliance Officer