

**SUMMARY OF PROPOSED CHANGES TO
THE LGMA-APPROVED GUIDELINES**

Issues Addressed:

Issue 7: Soil Amendments

Issue 8: Non-Synthetic Crop Treatments

Prepared by:

Western Growers

Submitted to the

Arizona Leafy Green Marketing Agreement

&

California Leafy Green Marketing Agreement

On June 18, 2021



BACKGROUND

Western Growers (WG) opened a comment period from March 29 to April 27, 2021, to gather proposed revisions to the Leafy Green Marketing Agreement (LGMA) – approved food safety guidelines document. A total of 130 proposed revisions to the Soil Amendments / Non-Synthetic Crop Treatments sections were submitted. WG hosted two web discussions to share those proposed revisions and get feedback from the leafy green industry. A total of 96 participants joined these two webinars. The list of the participants below is organized by webinar date.

May 20, 2021 - Part 1 discussion participants: 56 total participants

First Name	Last Name	Organization
Lawrence	Hinkle	Andrew Smith Company
Chase	Tew	Four Little Devils Farms Inc
Afreen	Malik	Western Growers
Bob	Mills	Misionero
Kate	Burr	Markon
Hannah	Harken	The Nunes Company
Adrian	Gumowski	Arizona Department of Agriculture
Belen	Quiroz	Fresh Foods, Inc./Rava Ranches, Inc./South County Packing, Inc.
Tony	Banegas	Bonduelle Fresh Americas
Cory	Peeks	Vessey & Co.
David	Ingram	FDA CFSAN
Amanda	Brooks	Harrison Farms
Amy	Karvoski	Yuma Fresh Vegetable Association
Danielle	Runion	Arizona Department of Agriculture
Mary	Castro	Limoneira
Edgar	Galaviz	Bard Valley Date Growers Association
Armando	Figueroa	Braga Fresh Family Farms
Norman	Barnett	Arizona Department of Agriculture

Joanne	Kidd	Mellon Farms
Tim	Klug	Sunsation Farms Inc.
Daisy	Villa	Harrison Farms INC
Jenna	Mann	Duncan Family Farms
Stephanie	Olivas	Gila Valley Farms
Maria	Barriga	Bella Vista Produce, Inc.
Ashley	Perez	Markon
Adam	Bestwick	Duncan Family Farms
Janet	Ham	DFF
Ed	Foster	Arizona Department of Agriculture
Juan Carlos	Mendoza	Sabor Farms
Jose	Ortiz	D'Arrigo Bros. Co., of California
Jessica	Sharkey	Markon
Subhadeep	Bhattacharjee	University of Arizona
Kelly	Miller	Griffin Family Farms
Mike	Cavenee	West Coast Soil Amendments, Inc.
Robert	Masson	Yuma Cooperative Extension
Stevi	Zozaya	Lee Farms
Kevin	Batchelor	California Department of Food and Agriculture
Tim	York	Leafy Greens Marketing Agreement
John	Massa	Comgro Soil Amendments
Cailin	Keaton	Pasquinelli Produce
Gerardo	Valenzuela	TLC Custom Farming Company
Michael	Menes	True Organic Products
Jodi	Pontureri	SWRCB
Amanda	Roach	Coronation Peak Ranches, Inc.
Audrey	Draper	U.S. Food and Drug Administration

Cynthia	Dominguez	Duda Farms
Bill	Hsu	Taco Bell Corp
John	Oliver	Fresh Express
Lupe	Camarena	Nature Fresh Farms
Ernesto	Bermudez	GreenGate Fresh
Francisco	Valdes	Sabor Farms
Blanca	Garcia	Harbinger Group LLC dba Misionero
Martha	Mena	Four Little Devils Farms, Inc.
Tami	Vassallo	The Nunes Company
Kami	Weddle	Rousseau Farming
Channah	Rock	University of Arizona

May 26, 2021 - Part 2 discussion participants: 40 total participants

First Name	Last Name	Organization
Michelle	Smith	U.S. Food and Drug Administration
Anika	Bansal	Bonduelle Fresh Americas
Kami	Weddle	Rousseau Farming
Cory	Peeks	Vessey & Company, Inc.
Amanda	Brooks	Harrison Farms
Mark	Crossgrove	The Nunes Company, Inc.
Kevin	Batchelor	CDFA
Brandon	Narron	Ratto Bros., Inc.
Valentin	Sierra	Amigo Farms, Inc.
Hannah	Harken	Nunes company
Fatima	Corona	JV Farms
Stevie	Zozaya	Lee Farms
Audrey	Draper	U.S. Food and Drug Administration

Tim	Klug	Sunsation Farms Inc.
Joanne	Kidd	Mellon Farms
John	Massa	Comgro Soil Amendments, Inc.
Jessica	Sharkey	Markon
Raul	Mendez	Lantana Farms
Daisy	Villa	Harrison Farms
Lawrence	Hinkle	Andrew Smith
Maria	Barriga	Bella Vista Produce, Inc.
Jenna	Mann	Duncan Family Farms
Armando	Figueroa	Braga Fresh Family Farms
Saul	Del Real	The Salad Farm
Kelly	Miller	Griffin Family Farms
David	Ingram	FDA CFSAN
Amanda	Roach	Coronation Peak
Connie	Quinlan	Leafy Greens Marketing Agreement
Victoria	Normandin	Self-employed consultant
Afreen	Malik	Western Growers
Tami	Vassallo	The Nunes Company
Lupe	Camarena	Nature Fresh Farms, LLC
Gerardo	Valenzuela	TLC Custom Farming Company
Kate	Burr	Markon Cooperative
Tony	Banegas	Bonduelle Fresh Americas
Bradley	Zittlow	Arizona Department of Agriculture
Martha	Mena	Four Little Devils Farms, Inc.
Marshall	Sherman	Ratto Bros
Ricardo	Canchola	LaBrucherie Produce
Cynthia	Dominguez	Duda Farms

Soil Amendments/Non-Synthetic Crop Treatments Proposed Revisions and Web Discussions Synopsis

WG received two proposals outlining revisions to Issues 7 and 8. These proposals were presented by the entities listed below (entity/spokesperson)

- Arizona LGMA – Vicki Scott
- California LGMA – Greg Komar

Opinion polls were conducted to gauge the feasibility of key proposed revisions. The results of this polling process are not binding. Polling results are included below when applicable. We encourage the use of the attached working draft of the CA LGMA-approved guidelines to follow and understand the summary below.

In more complex proposals, **blue font** indicates a language addition, and **red font** strikethrough indicates a language deletion.

GLOSSARY TERMS, ACRONYMS, PURPOSE, AND GENERAL REQUIREMENTS

Proposed Revision #1: New Glossary Term – “Aerated Static Pile” (see page 4)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition - “Composting process where active ingredients are covered with an insulating material and air is forced through the product. The product is maintained at a minimum of 131 degrees Fahrenheit for 3 days.”

Rationale: New glossary term added because Aerated Static Pile is reviewed in Table 3.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #2: Revised Glossary Term – “Agricultural Compost Tea” (see page 4)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Replaced the word “treatments” with “inputs”.

Rationale: This was changed to crop input in alignment with proposed changes to Issue 7 and Issue 8.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #3: New Glossary Term – “Agricultural Material” (see page 4-5)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Agricultural Material means waste material of plant or animal origin, which results directly from the conduct of agriculture, animal husbandry, horticulture, aquaculture, silviculture, vermiculture, viticulture and similar activities undertaken for the production of food or fiber for human or animal consumption or use, which is separated at the point of generation, and which contains no other solid waste. With the exception of grape pomace or material generated during nut or grain hulling, shelling, and processing, agricultural material has not been processed except at its point of

generation and has not been processed in a way that alters its essential character as a waste resulting from the production of food or fiber for human or animal consumption or use. Agricultural material includes, but is not limited to, manures, orchard and vineyard prunings, grape pomace, and crop residues.”

Rationale: New glossary term because agricultural material is referenced as a compost feedstock.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #4: Revised Glossary Term – “Animal By-Product” (see page 5)

Proponent: Greg Komar, CA LGMA

Proposed Revision:

Revised Glossary Term title - “Animal By-Product/Product”.

Revise definition – “~~Most p~~arts of an animal ~~that do not include muscle meat~~ including organ meat, nervous tissue, cartilage, bone, blood, feathers, and excrement. [This also include worm castings, guano, and other animal-based products and excrements.](#)”

Rationale: Added the word product to the glossary term and updated the glossary definition. Product was added because both by-products and products of animal origin could be used to create soil amendments and crop inputs.

The word “not” was removed because the types of by-products and products originally listed (organ meat, nervous tissue, cartilage, bone, blood, etc.) are used in the production of soil amendments and crop inputs, but there are possible restrictions as related to mortality composting. To address mortality composting a new glossary term is being proposed and a new best practice is also being proposed.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #5: New Glossary Term – “Biologicals” (see page 6)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Biologicals are products that contain beneficial, naturally occurring microorganisms or microbial derivatives as active ingredients.”

Rationale: New glossary term because this Biologicals is referenced in Table 3 section 7b.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #6: New Glossary Term – “Biorationals” (see page 6)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Biorationals are non-synthetic input materials in agriculture that are derived from natural sources such as microorganisms, biochemicals, minerals, organic materials, and plant extracts.”

Rationale: New glossary term because this term is referenced in Table 3 section 7b.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #7: Revised Glossary Term – “Biosolids”: Added Class A Language (see page 6)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language to definition – “Class A: Class A biosolids undergo a “Process to Further Reduce Pathogens (PFRP).” Pathogens are reduced to a level similar to the native soil and environment. Class A biosolids products can be used on hand golf courses, and other places where public contact is likely. Class A biosolids products include composted biosolids, lime pasteurized biosolids, and fertilizer pellets. Class A biosolids products are soil amendments, potting soils, and slow-release fertilizers.”

Rationale: New wording added because of new requirements regarding Class A biosolids being proposed to Table 3.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #8: Revised Glossary Term – “Biosolids”: Added Class B Language (see page 6)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language to definition – “Class B: Class B biosolids undergo a “Process to Significantly Reduce Pathogens (PSRP).” This means that while pathogens are significantly reduced to levels which are often below those found in animal manure, management practices (BMPs) are required at the site where they are used. Class B biosolids are used in bulk as fertilizers in agriculture and forestry and to reclaim barren lands. Site permits are required.”

Rationale: New wording added because of new requirements regarding Class B biosolids being proposed to Table 3.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #9: New Glossary Term – “Carbohydrate” (see page 7)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Ingredient for soil amendments and crop inputs that could improve growth of bacteria.”

Rationale: New glossary term because carbohydrate was added to the area of best practices for soil amendments and crop inputs. A carbohydrate is a naturally occurring compound, or a derivative of such

a compound, with the general chemical formula $C_x(H_2O)_y$, made up of molecules of carbon (C), hydrogen (H), and oxygen (O). Carbohydrates are the most widespread organic substances and play a vital role in all life. We are adding it to best practices because the use of different carbohydrates, during the application of soil amendments and crop inputs can significantly increase microbial populations including human pathogens if they are present in the soil amendment or crop input.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #10: New Glossary Term – “Compost/Mature Compost” (see page 8)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Compost is the product manufactured through the controlled aerobic, biological decomposition of biodegradable materials. The product has undergone mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds and stabilizes the carbon such that it is beneficial to plant growth. Compost is typically used as a soil amendment but may also contribute plant nutrients.”

Rationale: New glossary term because a major part of Issue 7 deals with compost but there was not a glossary term for compost previously.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #11: New Glossary Term – “Compost Feedstock” (see page 8)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “‘Feedstock’ means any compostable material used in the production of compost or chipped and ground material including, but not limited to, agricultural material, green material, vegetative food material, food material, biosolids, digestate, and mixed material. Feedstocks shall not be considered as either additives or amendments.”

Rationale: New glossary term because feedstock is part of the new proposed best practices in issue 7.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #12: New Glossary Term – “Crop Inputs” (see page 8)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Crop inputs are materials that are commonly applied post-emergence for pest and disease control, greening, and to provide organic and inorganic nutrients to the plant during the growth cycle.”

Rationale: New glossary term because a main proposal is to change the term crop treatment to crop input. While both are considered closely related crop input was determined to be the more universally acceptable term over crop treatment.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #13: New Glossary Term – “Covered Produce” (see page 8)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Commodities that FDA has identified as typically consumed raw. For our purposes this is for lettuce and leafy greens.”

Rationale: New glossary term because Covered Produce is used in the best practices section of issue 7.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #14: Revised Glossary Term – “Curing” (see page 8)

Proponent: Greg Komar, CA LGMA

Proposed Revision:

Added language – “The secondary phase of the composting process. As the active phase slows down and the temperature drops, mesophilic microorganisms recolonize and continue to breakdown the remaining organic matter. This process is also known as or referred to as the maturation step.”

Deleted language – “The final stage of composting, which is conducted after much of the readily metabolized biological material has been decomposed, at cooler temperatures than those in the thermophilic phase of composting, to further reduce pathogens, promote further decomposition of cellulose and lignin, and stabilize composition. Curing may or may not involve insulation, depending on environmental conditions.”

Rationale: This was updated for clarification and simplification regarding what curing means.

Poll Results: N/A.

Questions/Comments: The Leafy Green Safety Coalition commented on this proposed revision – “LGSC would like to see this process better defined, including metrics defining what ‘adequate curing’ would include.

Proposed Revision #15: Revised Glossary Term – “Detection Limit” (see page 9)

Proponent: Don Stoeckel, private citizen

Proposed Revision: Deleted the following language – “Methods that estimate bacterial populations in serial dilutions are limited to a minimum level of <2.2 MPN/100 mL and methods that count bacterial colonies growing on media are limited to a minimum level of <1.0 CFU/100 mL.”

Rationale: These limits are dependent on the set up and are not inherent to the methodologies in general. It is possible to have a detection limit of <1 MPN/100 mL (e.g., the popular Quantitray 2000 setup for Idexx Colilert) and it is possible to count bacterial colonies from more than 100 mL of water (detection limit <1/volume filtered or plated). Minor editorial changes could address this potential source of confusion.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #16: New Glossary Term – “Food Material” (see page 10)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Food Material means a waste material of plant or animal origin that results from the preparation or processing of food for animal or human consumption and that is separated from the municipal solid waste stream. Food material includes, but is not limited to, food waste from food facilities, food processing establishments, grocery stores, institutional cafeterias (such as prisons, schools and hospitals), and residential food scrap collection. Material that is defined as “food material” is not agricultural material.”

Rationale: Added this new glossary term because food material is referenced in other glossary terms, including compost feed stock.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #17: New Glossary Term – “Heat Treated Soil Amendments and Crop Inputs” (see page 11)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Soil amendments and crop inputs that have been physically heat treated and dried in accordance to standards issued by the USDA.”

Rationale: Added this new glossary term because treatment is referenced in Table 3 section 7c.

According to the U.S. Food and Drug Administration Food Safety Modernization Act, alternative treatments are recommended for reducing or eliminating human pathogens in raw animal manure. Physical heat treatments can be considered an effective method to inactivate pathogens in animal wastes.

Processed manure products must be treated so that all portions of the product, reach a minimum temperature of either 150° F (66o C) for at least one hour or 165° F (74o C), and are dried to a maximum moisture level of 12%; or an equivalent heating and drying process could be used.

<https://www.ams.usda.gov/sites/default/files/media/5006.pdf> - amended Aug 31 2018

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #18: New Glossary Term – “Incompletely Composted Manure/Immature Compost” (see page 12)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition - “Any form of compost that has not gone through a complete, validated, composting process approved by the LGMA and does not have tests showing that fecal coliforms, *E. coli*, *E. coli* O157:H7, *Listeria*, and *Salmonella* have been eliminated.”

Rationale: This new glossary term was added because the terms “incompletely composted manure” and “immature compost” are referenced but there were no glossary terms.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #19: New Glossary Term – “Listeria” (see page 12)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Any of a genus (*Listeria*) of small, gram-positive, rod-shaped bacteria that do not form spores and have a tendency to grow in chains and that include one (*Listeria monocytogenes*) that causes listeriosis.”

Rationale: This new glossary term was added because listeria is referenced in the metrics document.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #20: New Glossary Term – “Lot (Pertaining to Soil Amendments and Crop Inputs other than compost)” (see page 12)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Lot means a specific quantity of a finished product or other material that is intended to have uniform character and quality, within specified limits, and is produced according to a single manufacturing order during the same cycle of manufacture.”

Rationale: This new glossary term was added because new requirements for lot information relating to products other than compost are being proposed in Table 3. Additional [Link](#).

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #21: New Glossary Term – “Mortality Compost” (see page 13)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Mortality Compost is compost created through a process to manage livestock mortalities. The use of crop inputs, made from mortality composting processes, shall follow all local, state and federal regulations.”

Rationale: This new glossary term was added because new best practices language for mortality compost is being proposed in Issue 7.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #22: New Glossary Term – “Non-Detect” (see page 13)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Non-detect means not present but consideration should be given to the limit of detection of the approved laboratory method used for biological or chemical analysis.”

Rationale: This new glossary term was added because non-detect is referenced in Table 3.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #23: Revised Glossary Term – “Non-Synthetic Crop Treatments” (see page 13)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised glossary term title – “Non-Synthetic [Soil Amendments and Crop Inputs of Animal Origin](#) ~~Treatments~~”; added “soil amendment and/or” into definition.

Rationale: This glossary term was updated to stay in harmony with proposed changes to Issue 7 and 8.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #24: New Glossary Term – “Post-Consumer Waste” (see pages 13-14)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Post-consumer waste is a waste type produced by the end consumer of a material stream. Generally, this is discarded materials after something has been used. Post-consumer waste can include items such as packaging and unconsumed food.”

Rationale: This new glossary term was added because post-consumer waste is referenced as new proposed best practices in Issue 7.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #25: New Glossary Term – “Pre-Consumer Waste” (see page 14)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “A food item that was produced for consumption but that was never purchased, consumed or used.”

Rationale: This new glossary term was added because pre-consumer waste is referenced in the agricultural/compost tea glossary term.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #26: New Glossary Term – “Reconditioned/Re-processed” (see page 14)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Finished product that is added to a new production lot and goes through the entire validated production process. The old, finished product is now part of the new lot and testing of the new lot must follow all current requirements for LGMA testing before the product is used.”

Rationale: This new glossary term was added because reconditioning and reprocessing are referenced in new proposed requirements in Table 3.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #27: New Glossary Term – “Salmonella” (see page 14)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “*Salmonella* is a Gram-negative facultative rod-shaped bacterium in the same proteobacterial family as *Escherichia coli*, the family *Enterobacteriaceae*, trivially known as "enteric" bacteria. *Salmonellae* live in the intestinal tracts of warm, and cold blooded, animals. In humans, *Salmonella* is the cause of two diseases called salmonellosis: enteric fever (typhoid), resulting from bacterial invasion of the bloodstream, and acute gastroenteritis, resulting from a foodborne infection/intoxication.”

Rationale: This new glossary term was added because salmonella is referenced in multiple areas of the metrics and in Issue 7.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #28: Revised Glossary Term – “Synthetic Crop Inputs (Chemical Fertilizers)” (see page 15)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised glossary term title – “Synthetic [Soil Amendments and](#) Crop [Inputs](#)~~Treatments~~ (Chemical Fertilizers)

Rationale: This glossary term was updated to assure harmonization with the other proposed changes to the metrics.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #29: New Glossary Term – “Vegetative Material” (see page 16)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Vegetative material means food material resulting from the production or processing of food for animal or human consumption, but is no longer intended for such consumption, that is derived solely from plants and is separated from the municipal solid waste stream.”

Rationale: This new glossary term was added because it appears in other glossary terms and is also referenced in new proposed language in Table 3.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #30: New Glossary Term – “Vessel Compost Process” (see page 16)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Definition – “Enclosed composting process where ingredients are maintained at a minimum of 131 degrees Fahrenheit for at least 3 days.”

Rationale: This new glossary term was added because vessel compost process has been in the metrics in Issue 7, but there is no glossary term for the activity.

Poll Results: This proposed revision required no polling.

Questions/Comments: N/A.

Comment regarding glossary terms:

- Why are we not also defining a field lot?

Proposed Revision #31: New Acronym – “ISO - International Organization for Standardization” (see page 17)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added acronym – “ISO - International Organization for Standardization”.

Rationale: This acronym was added because International Organization for Standardization is being proposed to be added in the general requirements section under the proposed laboratory requirements.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #32: Added Best Practices Language to Issue 2: General Requirements (see page 19)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point – “Pre-harvest testing is required when risk assessments deem it is necessary (i.e., in proximity to animal operations per guidance.)”

Rationale: This was added in response to the CA LGMA Advisory Board’s recommendation to add a risk-based pre-harvest testing requirement to the LGMA metrics.

Poll Results: Are you currently performing pre-harvest testing? If so, what guides your approach?

25 Total Responses

- 52% - Yes, we conduct Pre-harvest testing (based on customer's requirements)
- 24% - Yes, we conduct Pre-harvest testing (risk-based approach)
- 16% - No, we don't perform pre-harvest testing
- 8% - I am not sure

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #33: Added Best Practices Language to Issue 2: General Requirements (see page 19)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet points:

- Laboratories used for any analytical parameters (microbial, chemical, etc.) required in the metrics must be certified and/or accredited for the analytical methods being reported and the matrices being analyzed (water, soil, soil amendment, product, etc.). Certification and accreditation must be recognized by State, Federal, or internationally bodies (ISO).
 - Note: It may be appropriate for proprietary or modified methods to be used but there must be assurances that the results are consistent with accredited methodologies.

Rationale: This lab requirement is being proposed to be added to the General Requirements section as a blanket requirement for all labs being used for LGMA required testing and analysis.

See [FDA's Guidance for Industry](#): Submission of laboratory packages by accredited laboratories for information on the process of accreditation.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #34: Added Best Practices Language to Issue 2: General Requirements (see page 19)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point - "Perform root cause analysis after any incident that has a high likelihood of causing a foodborne illness or injury (i.e., high risk adjacent land concern, positive pre-harvest pathogen test, water system non-compliance, high risk health or hygiene incident, soil amendment concern, traceability failure, field fecal contamination, etc.)."

Rationale: This was added in response to the CA LGMA Advisory Board's recommendation to add a requirement to conduct Root Cause Analysis when a high-risk incident has occurred.

Poll Results: Question – "What do you need to perform Root Cause Analysis?"

23 Total Responses:

- 61%: Yes, both additional training and resources have been helpful
- 9%: Yes, Additional resources have been helpful
- 9%: Yes, Additional training has been helpful
- 21%: I am not sure

Questions/Comments: There were no questions or comments regarding this proposal.

ISSUES 7 (SOIL AMENDMENTS AND CROP INPUTS) AND 8 (NON-SYNTHETIC CROP TREATMENTS)

Poll: Do you have any comments about the inclusion of both soil amendments and crop inputs?

Proposed Revision #35: Revised Preamble language to Issue 7: Soil Amendments (see page 20)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language in pre-amble – “~~Non-synthetic~~ Crop ~~treatments~~ inputs are ~~commonly~~ applied ~~post-emergence~~ for pest and disease control, greening, and to provide organic and inorganic nutrients to the plant during the growth cycle. ~~For the purposes of this document, they are defined as any crop input that contains animal manure, an animal product, and/or an animal by-product that is reasonably likely to contain human pathogens. Due to the potential for human pathogen contamination, these treatments should only be used under conditions that minimize the risk for crop contamination.~~”

Rationale: The Preamble was changed for clarification regarding crop input use and for new risk categorization. Original language from Issue 8 - Non-synthetic crop treatments is included here.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #36: Added Preamble language to Issue 7: Soil Amendments (see page 20)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language – “One type of crop input is known as Biological Products. Biological Products are used to manage plant diseases; enhance nutrient uptake and improve crop growth; manage insects and related pests; and manage weeds. For the purposes of this document, soil amendment and crop inputs will be categorized as follows:

- 7a – Biological of animal origin
- 7b – Biological of non-animal origin (fungal/bacterial extracts, green/plant waste, plant extracts, vegetative material, algae, yeast extract, pre/post-consumer waste not containing products of animal origin, etc.)
- 7c – Processed products
- 7d – Synthetic and inorganic
- 7e – Mixed components (blending categories 7a, 7b, 7c, and 7d).”

Rationale: The committee work has expanded the categories to include a larger variety of amendments and inputs. The most significant update is regarding section 7b as a majority of the section is new proposed language.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #37: Added and Revised Soil Amendment Best Practices language (see page 20)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point – “When using soil amendments, a risk assessment shall be performed considering the supplier, delivery, storage, and application of the product. Additionally, weather and climactic conditions (wind, rain, and water runoff), animal intrusion, visitor/ employee movements, vehicle traffic, or other applicable hazards should be part of the risk assessment.”

Revised language: – “DO NOT USE raw manure or soil amendments containing untreated animal by-products, un-composted / incompletely composted animal manure and/or green waste, or non-thermally treated animal manure ~~to fields, which will be used for~~ to lettuce and leafy green production [areas](#).”

Rationale: This new proposed language takes into consideration the possible risks associated with the entire product life cycle from creation until application of soil amendments.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #38: Added Soil Amendment Best Practices language (see page 20)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language to bullet point #3 – “or as an ingredient for soil amendments and crop inputs used for lettuce and leafy greens production.”

Rationale: Added “or as an ingredient” per discussions with Michele Jay-Russell from Western Center for Food Safety. Our review of compost production practices showed that biosolids may be used as a feedstock.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #39: Added Soil Amendment Best Practices language (see page 21)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point - “The use of soil amendments, made from mortality composting processes, shall follow all local, state, and federal regulations.”

Rationale: This new proposed language was added per LGMA subcommittee discussions about risks related to mortality composted products.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #40: Added Soil Amendment Best Practices language (see page 21)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point - “When creating compost and/or soil amendments, use feedstocks and ingredients that will minimize the amount of biological, physical, and chemical food safety hazards that will be introduced to the process. Do not use materials that are not verified to be safe for food production (i.e., green waste from processing facilities).”

Rationale: This new proposed language reflects that soil amendment risk is not only associated with biological contaminants. Physical and chemical risks should also be considered when approving feedstocks.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #41: Added Soil Amendment Best Practices language (see page 21)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point - “Post-consumer waste materials shall be used according to all local, state, and federal regulations.”

Rationale: This new proposed language reflects new CA regulations minimizing waste materials from entering landfills.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #42: Revised Soil Amendment Best Practices language (see page 21)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language to bullet point #7 - “Implement ~~management plans (e.g., timing of applications, storage location, source and quality, transport, etc.)~~ a SOP regarding storage and application controls that significantly reduce the likelihood that soil amendments being used may contain human pathogens. Consider timing of applications, application processes, surplus/unconsumed inventory, length of storage, storage location, source and quality, transport, weather, or any other potential controls that may impact the safety of the soil amendments being used.”

Rationale: This additional language reflects best practices from published composting resources (e.g., Best Management Practices Guidelines for Pathogen Control at Organic Material Processing Facilities, Washington Organic Recycling Council, Original Language). Addresses the need to implement management plans (e.g., timing of applications, storage location, source and quality, transport, etc.) that significantly reduce the likelihood that soil amendments being used contain human pathogens.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #43: Added Soil Amendment Best Practices language (see page 21)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point - "If soil amendments may have become contaminated, the product must be segregated and prevented from being used until it is determined to be safe for food production. If a product can be re-conditioned there must be verification that it is free of pathogens such as a COA."

Rationale: This new proposed language reflects corrective action best practices if a soil amendment is potentially contaminated or is contaminated.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #44: Revised Soil Amendment Best Practices language (see page 21)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language to bullet point #9 - "Verify that the time and temperature ~~process used~~ during the composting process ~~reduces~~, controls or eliminates the potential for human pathogens ~~being carried in the composted materials, as applicable to regulatory requirements~~. Consider the moisture content of the finished product."

Rationale: This is proposed language regarding moisture. The moisture level of compost can impact the safety of the product.

Poll Results: This proposed revision required no polling.

Questions/Comments:

- Why not include a percentage of moisture in the document?
 - CA LGMA will need a resource moving forward to guide moisture percentages.

Proposed Revision #45: Added Soil Amendment Best Practices language (see page 21)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language to bullet point #9 - "When applying materials that may contact the edible portion of the crop consider the type of product being grown, the stage of the product growth, and the application process."

Rationale: There is evidence that contamination of romaine is more prevalent at the bottom 1/3 of the head due to contamination getting into the pre-cupped romaine. Applications of any products that might contact the edible portion of the plant should consider this possible risk.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

General Questions/Comments:

Comment from the Leafy Greens Safety Coalition regarding bullet point #10 under Best Practices:

- Need to implement practices that control, reduce or eliminate likely contamination of lettuce/leafy green fields in close proximity to on-farm stacking of manure. Potentially revise language to: “Consider potential ~~Minimize the proximity of~~ wind dispersed and aerosolized sources of contamination ~~(e.g., water and manure piles) that may potentially contact growing lettuce/leafy greens or adjacent edible crops.~~”
- Leafy Greens Safety Coalition supports the elimination of storage on/application to immediately adjacent fields until after the final leafy greens harvest

Comment from Don Stoeckel (private citizen) regarding bullet point #11 under Best Practices:

- Add “the application field and any adjacent fields”. Seems unlikely that would ever be a practice (application of untreated while leafy greens are growing) but it would be parallel with Subpart F (reduce likelihood of contact during application).

Proposed Revision #46: Revised Soil Amendment Best Practices language (see page 21)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language to bullet point #12 - “Use soil amendment application techniques that control, reduce or eliminate likely contamination of surface agricultural water and/or edible ~~crops~~ portion of covered produce being grown in adjacent fields.”

Rationale: Added the term “covered produce” to align with FSMA language.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #47: Added Soil Amendment Best Practices language (see page 21)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point - “Do not stockpile compost and/or other soil amendments near open system irrigation sources, including on-farm sources and those that serve multiple users, unless best management practices have been employed to prevent cross-contamination of common water sources (e.g. run-off protection such as berms, covering compost).”

Rationale: This new proposed language addresses practices to reduce contamination of water sources. We wanted to add stronger language, so people are very cognizant of how close they are to water sources when using soil amendments.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #48: Added Soil Amendment Best Practices language (see page 21)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point - “Perform a risk assessment based on the type and stage of crop prior to stockpiling compost and/or other soil amendments adjacent to covered produce/lettuce and leafy greens production areas.”

Rationale: This new proposed language addresses potential cross contamination of leafy greens and leafy greens production areas when soil amendments are stockpiled.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #49: Revised Soil Amendment Best Practices language (see page 21)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language:

- Segregate equipment, or use dedicated equipment, ~~used~~ for soil amendment handling, preparation, distribution, applications or use effective means of equipment sanitation before subsequent use that effectively reduce the potential for cross-contamination. Efforts should be made to assure proper flow of equipment to maintain segregation of raw and finished product. Site maps should be used to ensure that the necessary traffic flow is in place.
- ~~Compost~~Soil amendment suppliers and on-farm composting operations shall have written sampling procedures.
- Soil amendment suppliers shall have Standard Operating Procedures to prevent cross-contamination of in-process and finished soil amendments with raw materials. SOPs should consider ~~through~~ equipment, runoff, and wind. Additionally, the SOPs shall include instructions for the handling, conveyance and storage of in-process and finished soil amendments that have become contaminated. Growers shall annually obtain proof that these documents exist.

Rationale: Addresses soil amendment production process flow to prevent comingling of raw and finished products and equipment used between raw and finished areas.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal

General Questions/Comments:

Don Stoeckel made an editorial comment to bullet point #18 under Best Practices:

- Since the non-BSAAO bullet specifies the form the relevant documentation may take, consider doing the same here and including the Produce Safety Rule term 'certificate of conformance' per 112.60(b)(1). The focus on COA doesn't address handling after treatment.

Proposed Revision #50: Revised Soil Amendment Best Practices language (see page 22)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language to bullet point #18 - "Temperature monitoring and turning records for compost applied to lettuce and leafy greens crops shall be maintained for at least two years. Growers purchasing compost shall annually obtain proof from their supplier that this documentation exists. ~~This applies to composting operations regulated under Title 14 CCR as well as smaller operations that do not fall under Title 14.~~"

Rationale: We wanted to simplify the language.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #51: Added Soil Amendment Best Practices language (see page 22)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point - “When insulation materials are used during aerated static pile compost production, the insulation materials must be used in a way to minimize cross contamination. All air equipment should be maintained to minimize recontamination of the compost.”

Rationale: This new proposed language assures insulation and air equipment are managed to prevent recontamination of finished compost. While insulation materials are necessary, we also understand different types of insulation may be used.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #52: Revised Soil Amendment Best Practices language (see page 22)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Divided up original language into multiple bullet points and revised the following language:

- Any soil amendment that does not contain animal manure or other animal by-products must have a document (e.g., [COAs](#), ingredient list, statement of identity, letter of guaranty, etc.) from the producer or seller confirming that the soil amendment is manure / animal by-product-free. ~~This document must indicate in some way that manure is not an ingredient used in the production of the amendment or provide the ingredients of the product.~~
 - A statement of identity is sufficient for single-chemical amendments (i.e., “calcium carbonate” or “gypsum”).
 - If “inert ingredients” are listed as part of an amendment, then a document from the producer or seller is necessary indicating manure, [products of animal origin, or other non-synthetic products \(of animal or non-animal origin\)](#) ~~has~~ [have](#) not been added.
 - The document confirming the soil amendment is manure/animal by-product/ [and non-synthetic-free](#) must be available for verification before harvest begins. ~~and it must be saved and available for inspection for 2 years. A new document is required every two years unless there is a significant process or ingredient change.~~
 - [Assure product is handled properly from production to delivery.](#)

Rationale: This additional language was added for clarification. The original language was broken up to allow for clarity and simplification. The additional language assures product is handled properly from production to delivery was added.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #53: Revised Soil Amendment Best Practices language (see page 22)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised the following language to bullet point #22:

- ~~Retain~~ Documentation of all ingredients, processes and test results by lot ~~(at the supplier)~~ and/or Certificates of Analysis is required to be available for inspection for ~~a period of~~ at least every two years. If there is a significant process or ingredient change the results must be updated.

Rationale: This language was amended to include ingredients and to update information if a significant process or ingredient change occurs.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #54: Deleted Soil Amendment Best Practices language (see page 22)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Deleted language from bullet point #23:

- ~~See Table 3 and Decision Trees (Figures 7A and 7B) for numerical criteria and guidance for compost and soil amendments used in lettuce and leafy greens production fields. The Technical Basis Document (Appendix B) describes the process used to develop these metrics.~~

Rationale: This bullet was deleted by the CA LGMA subcommittee.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Poll Question: Overall, do the proposed revisions to current best practices for the use of soil amendments both enhance food safety and are feasible to implement?

26 Total Responses:

- 81%: They enhance food safety and are feasible to implement
- 15%: They are not feasible to implement
- 0%: They do not enhance food safety
- 4%: They do not enhance food safety nor are feasible to implement

Proposed Revision #55-#59, #61-#63, #65-#69: Move “Crop Inputs” from separate section (Issue 8) to Issue 7. Soil Amendments and align Best Practices language with Soil Amendment Best Practices (see page 22)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet points:

- When using crop inputs, a risk assessment shall be performed considering the supplier, delivery, storage, and application of the product.
- Do not use crop inputs that contain raw manure or other untreated animal products or by-products for lettuce or leafy green produce.
- When creating crop inputs, use ingredients that will minimize the amount of biological, physical, and chemical food safety hazards that will be introduced to the process.
- Post-consumer waste materials shall be used according to all local, state, and federal regulations.
- All crop inputs, in their final composition/end product, that will have contact with the edible portion of the crop need to have proof that they are free of pathogens of concern.
- Crop inputs that are biologically active must have assurances that they are pathogen free. A COA shall be available showing the input is free of pathogens of concern.
- The use of crop inputs, made from mortality composting processes, shall follow all local, state and federal regulations.
- Implement a SOP that establishes management controls that significantly reduce the likelihood that crop inputs being used may contain human pathogens. Controls could include the timing of applications, application processes, surplus/unconsumed inventory, length of storage, storage location, source and quality, transport, weather, and any other control that could reduce the likelihood of contamination.
- If a crop input may have become contaminated, the product must be segregated and prevented from being used until it is determined to be safe for food production. If a product can be re-conditioned there must be verification that it is free of pathogens such as a COA.
- Maximize the time interval between crop input application and time to harvest. When applying materials that may contact the edible portion of the crop consider the type of product being grown, the stage of the product growth, and the application process.
- When mixing multiple partial lots of materials, ensure there is lot integrity.
- Do not mix and use materials that are not verified to be safe for food production or do not have a labeled use. (i.e., the production process has verified pathogen reduction, pathogens are tested, heavy metal analysis, etc.)

Rationale: These newly proposed bullets are aligned with soil amendment best practices.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #60: Revised Crop Inputs Best Practices language (see page 23)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised bullet point:

- Do not apply untreated agricultural or compost teas containing added nutrients (e.g., [carbohydrates](#), molasses, yeast extract, algal powder, etc.) intended to increase microbial biomass directly to lettuce and leafy greens.

Rationale: The word “carbohydrate” was added based on evidence that adding carbohydrate food sources can cause significant growth of bacteria, including pathogens of concern, in the crop input.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #64: Revised Crop Inputs Best Practices language (see page 23)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised bullet point:

- Water used to make agricultural teas must [minimally](#) meet [Type A](#) water quality requirements ~~for post-harvest water use in Table 2G~~. Liquid crop ~~treatments~~-[inputs](#) such as agricultural or compost teas may be used in water distribution systems provided all other requirements herein are met.

Rationale: This proposed language attempts to harmonize language regarding water classification. Current language uses Type A water quality.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #70: Revised Crop Inputs Best Practices language (see page 23)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised bullet point:

- Segregate equipment, [or use dedicated equipment](#), for crop [input](#) applications or use effective means of equipment sanitation before subsequent use. [All sanitation events must be documented](#).
- Retain [all](#) documentation ~~of all test results available~~ for inspection for a period of at least two years.

Rationale: This language is proposed to align crop inputs with soil amendment best practices and requires all documentation, not just test results, to be retained for at least 2 years.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #71: Revised Crop Inputs Best Practices language (see page 24)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised bullet point:

- See Table 3 and Decision Trees (Figures) for numerical criteria and guidance for soil amendments [and crop inputs](#) used in lettuce and leafy greens production fields. ~~The Technical Basis Document (Appendix B) describes the process used to develop these metrics.~~

Rationale: This newly proposed language aligns with soil amendment best practices.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Poll Question: Overall, do these proposed best practices for the use of crop inputs enhance food safety and are feasible to implement?

24 Total Responses:

- 79%: They enhance food safety and are feasible to implement
- 13%: They are not feasible to implement
- 0%: They do not enhance food safety
- 8%: They do not enhance food safety nor are feasible to implement

Table 3: Soil Amendments and Crop Inputs

General Questions/Comments:

- Don Stoeckel (private citizen) – “What is the risk-based issue with green waste? It doesn’t appear to be addressed in the rationale. The Definition of green waste does not seem to include anything that generally would be associated with an elevated risk.”
 - Greg Komar – “Dr. Paula Rivendeira (previously of the U of Arizona) did a fly study that showed post-processed green waste (from salad production) was positive for pathogens. Additionally, testimony from compost producers, during our committee meetings, suggested that green waste had a high likelihood of harboring fecal contamination from domestic pets and other animals.”
 - Sonia Salas: This was addressed by Greg in the working draft (rationale may be good to add to the LGMA Technical Basis document).
- LGSC supports the elimination of storage on/application to immediately adjacent fields until after the final leafy greens harvest.

Proposed Revision #72: Added Metric/Rationale Language in Table 3: Soil Amendments and Crop Inputs (see page 25)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language – “Applications include, but are not limited to, the intentional use of an untreated soil amendment or crop input, the use of animals for field management of weeds and crop residue, the unintentional application due to drift from an adjacent area.”

Rationale: This new proposed language clarifies when the prohibition applies.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #73: Added Metric/Rationale Language in Table 3: Soil Amendments and Crop Inputs (see page 25)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language – “For Class A Biosolids use the one calendar year guidance. For Class B Biosolids the field cannot be replanted for a minimum of 38 months from discontinued use of Class B Biosolids. Soil testing must also be conducted demonstrating the soil meets the standard for compost.”

Rationale: This new proposed language is based on federal restrictions and makes clear that if those products are applied to the crop, the crop cannot be harvested for the fresh market.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #74: Added Language in Table 3: Soil Amendments and Crop Inputs – Time Intervals (see page 25)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language – “Minimum (1) one calendar year after application of the product.”

Rationale: This new proposed language clarifies the requirement. There is no published research at the moment proving less than one year is acceptable.

Poll Results: Poll Question: Does a minimum 1 calendar year after application interval enhance food safety and is it feasible to implement?

22 Total Responses

- 77%: It enhances food safety and is feasible to implement
- 5%: It is not feasible to implement
- 5%: It does not enhance food safety
- 13%: It does not enhance food safety nor is feasible to implement

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #75: Added Language in Table 3: Soil Amendments and Crop Inputs – Time Intervals (see page 25)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language – “Please note that certain environmental conditions particularly heavy rains, long periods (or unusual amounts) of rain or moisture, and increased humidity can cause pathogens of concern to persist for longer periods of time or to re-grow after being shown to be nondetectable. Also, the type, and amount of the soil amendment and crop input can also impact the persistence of pathogens which may change the minimum time required before replanting.”

Rationale: This proposed revision is based on the following resource: Bardsley CA, Weller DL, Ingram DT, Chen Y, Oryang D, Rideout SL and Strawn LK. (2021) Strain, Soil-Type, Irrigation Regimen, and Poultry Litter Influence *Salmonella* Survival and Die-off in Agricultural Soils. *Front. Microbiol.* 12:590303.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #76: Added Language in Table 3: Soil Amendments and Crop Inputs – Time Intervals
(see page 25)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language –

- “When deemed acceptable, and guided through a proper risk assessment, appropriate soil testing can be used to shorten this period to no less than 270 days prior to planting.
 - Suitable representative samples shall be collected for the entire area suspected to have been exposed to the applied products. This testing must be performed in a manner that accurately represents the production field.
 - Results must indicate that soil levels of microorganisms meet the recommended standards for processed compost.”

Rationale: The 270-day number is based on original FDA language regarding use of untreated BSAAO and discussions with leading researchers - D. Ingram FDA, M. Russell WCFS.

Poll Results: Poll question: If testing is conducted, an interval of 270 days prior to planting can be applied. Does that enhance food safety and is it feasible to implement?

21 Total Responses (percentages rounded to nearest whole number, therefore, does not equal 100%.

- 71%: It enhances food safety and is feasible to implement
- 10%: It is not feasible to implement
- 10%: It does not enhance food safety
- 10%: It does not enhance food safety nor is feasible to implement

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #77: Moved Language in Table 3: Soil Amendments and Crop Inputs – Time Intervals
(see page 25)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Moved language from flood mitigation section –

- For additional guidance on appropriate soil sampling techniques, use the Soil Screening Guidance: Technical Background Document (US EPA 1996). Specifically, Part 4 provides guidance for site investigations. Reputable third-party environmental consultants or laboratories provide sampling services consistent with this guidance.
- Appropriate mitigation and mitigation strategies are included in the text portion of the document.

Rationale: This information is not new language but was taken from the flood mitigation section.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #78: Combined Metric/Rationale Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 26)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Combined language – “Please see Figure 7A: Decision Tree for Use of ~~Composted~~ Biological Soil Amendments and Crop inputs of Animal Origin.”

Rationale: This was combined for simplicity. We are looking at not only soil amendments, but crop inputs.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #79: Revised Amendment Title in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 26)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised title language – “7a Composted Soil Amendments and Crop Inputs (containing animal manure or animal products)”

~~*Composted soil amendments should not be applied after emergence of plants.~~

Rationale: The name was changed to include crop inputs.

Poll Results: N/A.

Questions/Comments:

- Comment from Don Stoeckel (private citizen) – “Clarification, Is ‘adequate curing’ not necessary for vessel composting? The section does not fully describe what is vessel composting.”
 - A response was provided that there is a glossary term for vessel composting.

General Questions/Comments:

- Comment regarding Windrow Composting: “LGSC would like to see a better-defined process for curing. Establishing time/temp metrics would be the goal as compared to defining the intended results.”

Proposed Revision #80: Revised Aerated Static Pile Composting Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 26)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language – “Active compost must be covered with 6 to 12 inches of insulating materials per federal, state, and local regulation and maintain a minimum of 131°F for 3 days or longer with proper management to ensure elevated temperatures throughout all materials followed by adequate curing.”

Rationale: Proposed language to address that different insulation materials are being used and that ASP composting must be managed in order to achieve a hygienic finished product. We want to make sure people of following the process as it’s intended to be done.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #81: Revised Target Organism Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 26)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Removed “*E. coli* O157:H7” and replaced with “STEC”.

Rationale: Proposed to expand target as O157:H7 is not the only EHEC or STEC of concern.

Poll Results: Poll Question: Does the addition of STEC enhance food safety and is it feasible to implement?

19 Total Responses

- 74%: It enhances food safety and is feasible to implement
- 5%: It does not enhance food safety
- 11%: It is not feasible to implement
- 10%: It does not enhance food safety nor is feasible to implement

Questions/Comments:

- LGSC would like to understand if *Listeria monocytogenes* needs to be added if there are non-animal components included.

Proposed Revision #82: Revised Acceptance Criteria Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 26)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised fecal coliforms acceptance criteria from 1000 MPN/gram to 100 MPN/gram of total solids (dry weight basis).

Rationale: Here are resources behind the proposed change:

- Larney, F.J., Yanke, L.J., Miller, J.J. and McAllister, T.A. (2003), Fate of Coliform Bacteria in Composted Beef Cattle Feedlot Manure. *J. Environ. Qual.*, 32: 1508-1515.
<https://doi.org/10.2134/jeq2003.1508>
 - This shows that a proper composting process can achieve TC levels below 100 MPN.
- Brinton WF Jr, Storms P, Blewett TC. Occurrence and levels of fecal indicators and pathogenic bacteria in market-ready recycled organic matter composts. *J Food Prot.* 2009 Feb;72(2):332-9. Doi: 10.4315/0362-028x-72.2.332. PMID: 19350977 shows when composting is conducted properly FC levels should be less than 100 MPN.
 - This article bridges Dr. D Ingrams perspective that proper compost process controls must be in place and Dr. T Suslow's recommendation to reduce FC acceptance criteria from 1000 to 100 MPN.
- Arslan Topal, E.I., Ünlü, A. and Topal, M. Effect of aeration rate on elimination of coliforms during composting of vegetable–fruit wastes. *Int J Recycl Org Waste Agricult*, 5, 243–249 (2016).
<https://doi.org/10.1007/s40093-016-0134-6>

This research shows that ASP can achieve 99.9-100% reduction in FC counts when the process is controlled properly.

Poll Results: Poll Question: Does the modification of the acceptance criteria from 1,000 to 100 MPN/g enhance food safety and is feasible to implement?

23 Total Responses

- 39%: It enhances food safety and is feasible to implement
- 9%: It does not enhance food safety
- 13%: It is not feasible to implement
- 39%: It does not enhance food safety nor is feasible to implement

Questions/Comments:

- AZ LGMA:
 - “Research is ongoing through FDA and other entities with regards to the risks associated with fecal coliforms in soil amendments. At this time AZ prefers to stay in alignment with the FDA’s Produce Safety Rule criteria of <1,000 MPN/gram for fecal coliforms.”
 - However, after this proposed revision was presented as well as evidence of recent research to support <1000 MPN, the AZ LGMA may reconsider this revision.
- John Massa:
 - “In regards to the changing fecal coliforms from <1000 MPN to <100MPN, the studies that Greg Komar presented were from 2005 and were done on an earlier hypothesis that if compost had a <100MPN on fecal coliforms there would be a very little chance of other pathogens like O157:H7 being in the compost and the need for additional testing of other specific pathogens weren’t needed. This was done to keep the cost of testing down for

composters. We are very fortunate to have so many labs here in California that can do pathogen testing, were in other states, at the time of these studies, there might be one or no labs available to test compost for those additional pathogens and cost were high as compare to what we pay.

Trevor and I had this discussion over three years, and Trevor's thoughts were - we don't need to test for fecal coliforms anymore and was suggested it be dropped from the FSMA regulation and only test for targeted pathogens like STEC, *L. mono* and *Salmonella*.

From my own personal experience, I know that you can be <100MPN and still be positive for O157:H7 or a STEC. So, the point is moot and has no meaning in the great scheme of testing for pathogens.

Also, over 50% of compost produce here in California goes to agricultural use. This may force many composters to pull shallow samples from that first 12 inches or 30 cm from a pile which from my own personal experience as well as research done by Dr. William Brinton, that there is enough UV and oxygen degradation that the fecal coliforms and other pathogen like STEC will not show up on the testing. Possible *Salmonella* will be detected but the rest won't.

These are the major reasons why I feel that we need to leave the fecal coliforms at <1000 MPN but instead place sampling depths of greater than 12" and moisture content of those samples to be greater than 30% at time of sampling. Also, the composters need to state at what time frame during the composting process was the samples taken. I expressed these concerns during the year and half we have been working on this matter regarding compost but fell on deaf ears from other members of the technical team and was specifically shut down by Ms. Lanini anytime I tried to bring it up.

I hope this is taken into consideration and the CA LGMA leaves the Fecal Coliforms at <1000 MPN.

- LGSC would like to explore tighter limits up to <100 MPN and wants to understand what historical values look like.
- Audience comment: The Class A Biosolids density is 1000 MPN/g of total solids (dry weight basis), so this change would be less than for Class A.
- Audience question: Could you all evaluate test results on lots purchased to see if it is achievable?

Proposed Revision #83: Revised Recommended Test Methods Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 26)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language:

- Fecal coliforms: U.S. EPA Method 1680; multiple tube MPN
- *Salmonella* spp.: U.S. EPA Method 1682
- ~~E. coli O157:H7~~ STEC: Any laboratory validated method for compost sampling.
- Other U.S. EPA, FDA, AOAC, TMECC or validated/accredited methods may be used as appropriate.

Rationale: FDA's language = PSR 112.55 - What microbial standards apply to the treatment process. Not detected using a method that can detect one colony forming unit (CFU) per 5 gram (or milliliter if liquid is being sampled) analytical portion.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #84: Revised Sampling Plan Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 26)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revise current language and add new language

- A composite sample shall be representative and random. ~~and obtained as described in the California state regulations. (See Appendix E)“~~
- Verification and COA testing should have statistically relevant sample units (minimum n=60) to provide high probability of detection.

Rationale: We are recommending increase the minimum base on initial results from a CDFA study regarding an analysis of sampling plans. We use n=60 as a traditional number for a statistical valid subsample of a lot of product. N=12 may not be finding all pathogens, whereas an n=60 sample plan is more complete.

Poll Results: Poll Question: Is the implementation of a sampling plan with n=60 feasible and does it enhance food safety?

21 Total Responses

- 57%: It enhances food safety and is feasible to implement
- 0%: It does not enhance food safety
- 19%: It is not feasible to implement
- 24%: It does not enhance food safety nor is feasible to implement

Questions/Comments:

- LGSC would like to revisit this sampling plan to determine efficacy. N=60 is the standard we want to work towards with a defined sample lot size and detail around sampling locations.
- Audience comment: An important aspect we are missing here is sample depth. You can pull a sample off the compost within the first 12 inches and not get an accurate reading where it can come back clean every time. You need to push deeper into the compost pile where the problems can be lying.

Proposed Revision #85: Modify Sampling Plan Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 26)

Proponent: Vicki Scott, AZ LGMA

Proposed Revision: Maintain original bullet point and remove proposed language (second bullet point)

- A composite sample shall be representative and random and obtained as described in the California state regulations. (See Appendix E)”
- ~~Verification and COA testing should have statistically relevant sample units (minimum n=60) to provide high probability of detection.~~

Rationale: Maintain sampling protocols aligned with current CA Code of Regulations regarding composting (n=12). Compost and fertilizer producers are a regulated industry. While we support the concept of increasing sampling sizes in order to obtain a higher probability of detection, in this case, the CA LGMA has not identified the sampling protocols for the suggested n=60 sample set. Statistical evaluation of the n=60 for smaller lot sizes has not been performed. In order to make an informed decision for the overall industry, additional information is needed.

Poll Results: N/A

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #86: Revised Recommended Test Methods Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 26)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language – “Sample may be taken by a trained representative ~~the supplier if trained by a testing laboratory or state authority.~~

~~Laboratory must be certified/accredited for microbial testing by a certification or accreditation body.~~

Rationale: This was proposed to simplify the training requirement. General consensus that it is not necessary to have training by a lab. 2Note: Appendix E needs updating if this proposal is accepted.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #87: Revised Testing Frequency Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 26)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language – “Each lot before application to production fields. A sampling lot is defined as a unit of production equal to or less than 5,000 cubic yards.

Rationale: Sampling lot has been proposed to be added in reference to STA sampling protocols which are a system approach to testing vs individual wind row samples.

Poll Results: N/A.

Questions/Comments:

- LGSC supports efforts to establish a recommended lot size for composted soil amendments that is in line with a new sampling proposal.
- Don Stoeckel (private citizen): “Why is it okay to have a Certification of Process Validity for thermal processes, but not for biological/composting processes?”

Proposed Revision #88: Added Testing Frequency Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 27)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- A unit of production is meant to be physically unique. Some characteristics could include the same ingredients, same time of production, same production conditions, same equipment, etc. (i.e., for each production lot, take one sample per each 5,000 cu yards).

Rationale: This new proposed language assures lot description is based on lot definition per a production run and not an overall time period similar to STA definitions.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #89: Added Testing Frequency Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 27)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- Reconditioned/re-processed product suspected of being contaminated.

Rationale: This new proposed corrective action language to assures if re-testing is conducted it is of reconditioned product.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #90 and 91: Added Testing Frequency Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 27)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- Bulk finished product, not enclosed or packaged, must be re-tested at minimum annually if it is stored for greater than one calendar year and none of the product has been distributed.

Rationale: This new language was added in anticipation of CA's new rules regarding reducing waste going to landfills. It is probable that there will be excess inventory being stored for long periods of time where none of the product has been distributed to an end user. If some part has been distributed the remaining product should be reconditioned minimally annually and re-tested. Also added additional language for consideration. If some part has been distributed the remaining product should be reconditioned minimally annually and re-tested.

Poll Results: Poll Question: Do proposed revisions to the testing frequency enhance food safety and are feasible to implement?

24 Total Responses

- 83%: They enhance food safety and are feasible to implement
- 0%: They do not enhance food safety
- 8%: They are not feasible to implement
- 8%: They do not enhance food safety nor are feasible to implement

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #92: Added Application Interval Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 27)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- Note: See best practices regarding what to consider when applying materials that may contact the edible portion of the crop.

Rationale: This new proposed language enforces considerations when applying soil amendments that may contact the edible portion of the crop.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Comment regarding the Application Interval phrase, “Must be applied > 45 days before harvest.”

- LGSC does not want composted soil amendments applied post-emergence.

Comment regarding the Documentation section:

- LGSC would like to understand traceability for composted soil amendments, including identification of lots after they are delivered on-farm to link them to the associated COA.

Proposed Revision #93: Added Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 27)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- All products must have documentation that demonstrates they are free of pathogens of concern.

Rationale: Added this proposed language based on group discussions. Pathogen free materials are a requirement throughout Issue 7.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #94: Revised Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 27)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised bullet point:

- All test results, ~~and/or~~ Certificates of Analysis, [and documentation](#) shall be ~~documented annually~~ [current, reviewed before use](#), and available for verification from the grower (the responsible party) for a period of two years. [Policies, procedures, letters of guarantee, and similar types of documents, must be updated annually.](#)

Rationale: This is new proposed language stating current means that all test results and COAs are for the materials being used. All documentation from suppliers (Policies, procedures, letters of guarantee) must be renewed annually.

Poll Results: N/A.

Questions/Comments:

- LGSC supports COA's submitted per established lot on composted soil amendments, based on recommendations from a new sampling proposal referenced above.
- Audience comment: The state of CA does have regulations that no compost can leave facilities that do not meet the minimum standards. When testing for pathogens we are following the LGMA standards.

Proposed Revision #95: Added Rationale Language in Table 3: Soil Amendments and Crop Inputs – Section 7a (see page 27)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- All products must be used in accordance with all local, state, and federal regulations.

Rationale: This new proposed language assures the legal use of compost.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #96: Revised Metric/Rationale Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Composted Not Containing products of Animal origin) (see page 28)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language and target organism:

[“Enclosed or within-vessel composting:](#)

[Active compost must maintain a minimum of 131oF for 3 days or longer.](#)

[Windrow composting:](#)

[Active compost must maintain aerobic conditions for a minimum of 131oF for 15 days or longer, with a minimum of five turnings during this period followed by adequate curing.](#)

[Aerated static pile composting:](#)

Active compost must be covered with ~~6 to 12 inches~~ of insulating materials [per federal, state, and local regulation](#) and maintain a minimum of 131oF for 3 days or longer [with proper management to ensure elevated temperatures throughout all materials](#) followed by adequate curing.”

Rationale: This proposed language is similar to 7a.

Poll Results: Poll Question for section 7b (Composted Not Containing products of Animal origin): Does the addition of STEC enhance food safety and is feasible to implement?

18 Total Responses

- 94%: It enhances food safety and is feasible to implement
- 0%: It does not enhance food safety
- 0%: It is not feasible to implement
- 6%: It does not enhance food safety nor is feasible to implement

Questions/Comments:

- Audience comment: FSMA PSR does not require pathogen testing of BSAAO-based compost prior to use for covered production.
- Yes, but the LGMA goes above and beyond the FSMA PSR.
- Audience comment regarding Targeted Organisms: For in vessel and post composting, FSMA states we have to test for Listeria and that’s not on the list.

Proposed Revision #97: Revised Acceptance Criteria Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Composted Not Containing products of Animal origin) (see page 28)

Proponent: Vicki Scott, AZ LGMA

Proposed Revision: Revised language: “Fecal coliforms: < 100 ([AZ: 1,000](#)) MPN / gram of total solids (dry weight basis)”

Rationale: AZ LGMA proposes a threshold of 1,000 MPN/g for fecal coliform and does not support a lower threshold of 100 as there isn’t enough research behind the change.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #98: Added Acceptance Criteria Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Composted Not Containing products of Animal origin) (see page 28)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language:

- Fecal coliforms: < 100 (AZ: 1,000) MPN / gram of total solids (dry weight basis)
- *Salmonella* spp.: Negative or < DL (< 1 MPN / 30 grams)
- STEC: Negative or < DL (< 1 MPN / 30 grams)

Rationale: Here are some resources that guidance our basis for the revisions:

- Larney, F.J., Yanke, L.J., Miller, J.J. and McAllister, T.A. (2003), Fate of Coliform Bacteria in Composted Beef Cattle Feedlot Manure. J. Environ. Qual., 32: 1508-1515.
<https://doi.org/10.2134/jeq2003.1508>
 - This shows that a proper composting process can achieve TC levels below 100 MPN;
- Brinton WF Jr, Storms P, Blewett TC. Occurrence and levels of fecal indicators and pathogenic bacteria in market-ready recycled organic matter composts. J Food Prot. 2009 Feb;72(2):332-9. Doi: 10.4315/0362-028x-72.2.332. PMID: 19350977
 - This shows when composting is conducted properly FC levels should be less than 100 MPN. This article bridges Dr. D Ingrams perspective that proper compost process controls must be in place and Dr. Trevor Suslow's recommendation to reduce FC acceptance criteria from 1000 to 100 MPN.
- Arslan Topal, E.I., Ünlü, A. & Topal, M. Effect of aeration rate on elimination of coliforms during composting of vegetable–fruit wastes. Int J Recycl Org Waste Agricult 5, 243–249 (2016).
<https://doi.org/10.1007/s40093-016-0134-6>
 - This research shows that ASP can achieve 99.9-100% reduction in FC counts when the process is controlled properly.

Poll Results: Poll Question: Does the modification of the acceptance criteria from 1,000 to 100 MPN/g enhance food safety and is feasible to implement?

21 Total Responses

- 52%: It enhances food safety and is feasible to implement
- 24%: It does not enhance food safety
- 5%: It is not feasible to implement
- 19%: It does not enhance food safety nor is feasible to implement

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #99: Added Recommended Test Methods, Sampling Plan, Testing Frequency, and Application Interval Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Composted Not Containing products of Animal origin) (see page 28)

Proponent: Greg Komar, CA LGMA

Proposed Revision: See attached document for revisions.

Rationale: This language is similar to 7a.

Poll Results: Poll Question: Is the implementation of a sampling plan with n=60 feasible and does it enhance food safety?

21 Total Responses

- 62%: It enhances food safety and is feasible to implement
- 0%: It does not enhance food safety
- 14%: It is not feasible to implement
- 24%: It does not enhance food safety nor is feasible to implement

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #100: Added Recommended Test Methods, Sampling Plan, Testing Frequency, and Application Interval Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Composted Not Containing products of Animal origin) (see page 28)

Proponent: Vicki Scott, AZ LGMA

Proposed Revision: Added bullet point:

- A composite sample shall be representative and random and obtained as described in the California state regulations. (See Appendix E)

Rationale: We want to stay aligned with the Produce Safety Rule with the thought that is a federal regulation and we increase compliance when being aligned with federal regulation.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #101: Revised CA LGMA's Sampling Plan Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Composted Not Containing products of Animal origin) (see page 28)

Proponent: Vicki Scott, AZ LGMA

Proposed Revision: Deleted CA LGMA's proposed sampling plan language:

- ~~Verification and COA testing should have statistically relevant sample units (minimum n=60) to provide high probability of detection.~~

Rationale: We believe we should stay aligned with CA state regulations. There's a lot more to it than just n=60. Instead of having this be a moving target we would rather see a blanket statement here.

Poll Results: This proposed revision required no polling.

Questions/Comments:

- Audience comment: The state of CA has a minimum sampling requirement, it's not a definite requirement.

Proposed Revision #102: Revised CA LGMA's Sampling Plan Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Composted Not Containing products of Animal origin) (see page 28)

This item was marked as a proposed revision, but it was noted as an additional suggestion regarding Testing Frequency language.

- CA LGMA suggested this language for consideration underneath the last bullet point: “If some part has been distributed the remaining product should be reconditioned minimally annually and re-tested.”

Proposed Revision #103: Added Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Composted Not Containing products of Animal origin) (see page 29)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- All products must have documentation that demonstrates they are free of pathogens of concern.

Rationale: This language was added based on group discussions. Pathogen free materials are a requirement throughout Issue 7.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #104: Added Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Composted Not Containing products of Animal origin) (see page 29)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- Any biological soil amendment or crop input that DOES NOT contain products of animal origin must have documentation that shows the material is free of products of animal origin.

Rationale: This is similar to original language regarding soil amendments and crop treatments not of animal origin.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #105: Added Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Composted Not Containing products of Animal origin) (see page 29)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet points:

- All test results, Certificates of Analysis, and documentation shall be current, reviewed before use, and available for verification from the grower (the responsible party) for a period of two years. Policies, procedures, letters of guarantee, and similar types of documents, must be updated annually.
- Records of process control monitoring for on-farm produced soil amendments must be reviewed, dated, and signed, within a week after the records are made, by a supervisor or responsible party.

Rationale: This is similar to 7a language. All products must be used within state and federal regulations.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #106: Added Rationale Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Composted Not Containing products of Animal origin) (see page 29)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet points:

- The microbial metrics and validated processes are based on allowable levels from California state regulations for compost (CCR Title 14 - Chapter 3.1 - Article 7), with the addition of testing for E. coli O157:H7 as microbe of particular concern.
- The 45-day application interval was deemed appropriate due to the specified multiple hurdle risk reduction approach outlined. Raw manure must be composted with an approved process and pass testing requirements before an application.
- All products must be used in accordance with all local, state, and federal regulations.

Rationale: This is similar to 7a language.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Poll Question for section 7b (Composted Not Containing products of Animal origin): Do the proposed metrics for composted not containing product of animal origin enhance food safety and are feasible to implement?

18 Total Responses

- 72%: They enhance food safety and are feasible to implement
- 6%: They do not enhance food safety
- 6%: They are not feasible to implement
- 16%: They do not enhance food safety nor are feasible to implement

Proposed Revision #107: Added Product Definition Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 30)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language:

“Products

Products included in this section could include: Biofertilizers, biologicals, biorationals, bio-stimulants, biopesticides, agricultural and compost teas not of animal origin, and other products not derived from ingredients of animal origin.

Rationale: New proposed language to better define the materials that are part of this section. We want people to understand exactly what product we are referring to.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #108: Added Target Organism, Acceptance Criteria, and Recommended Test Methods Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 30)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language:

Target Organisms:

- Fecal coliforms:
- *Salmonella* spp.
- STEC
- *Listeria monocytogenes*

Acceptance Criteria:

- Fecal coliforms: < 100 (AZ: 1,000) MPN / gram of total solids (dry weight basis)
- *Salmonella* spp.: Negative or < DL (< 1 MPN / 30 grams)
- STEC: Negative or < DL (< 1 MPN / 30 grams)
- *Listeria monocytogenes*: Negative

Recommended Test Methods:

- Other U.S. EPA, FDA, AOAC, TMECC or validated/accredited methods may be used as appropriate.

Rationale: New proposed language to better define the materials that are part of this section. We did add *Listeria monocytogenes* per recommendation from experts.

Poll Results:

Poll Question #1: Does the addition of STEC enhance food safety and is feasible to implement?

18 Total Responses

- 89%: It enhances food safety and is it feasible to implement
- 0%: It does not enhance food safety
- 5%: It is not feasible to implement
- 5%: It does not enhance food safety nor is feasible to implement

Poll Question #2: Does the modification of the acceptance criteria from 1,000 to 100 MPN/g enhance food safety and is it feasible to implement?

17 Total Responses

- 59%: It enhances food safety and is feasible to implement

- 12%: It does not enhance food safety
- 6%: It is not feasible to implement
- 23%: It does not enhance food safety nor is feasible to implement

Questions/Comments:

- AZ LGMA proposes a threshold of 1,000 MPN/g for fecal coliform and does not support a lower threshold of 100.

Proposed Revision #109: Revised Proposed Acceptance Criteria Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 30)

Proponent: Vicki Scott, AZ LGMA

Proposed Revision: Revised language – “Fecal coliforms: < 100 ([AZ: 1,000](#)) MPN / gram of total solids (dry weight basis)”

Rationale: AZ LGMA proposes a threshold of 1,000 MPN/g for fecal coliform and does not support a lower threshold of 100.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Poll Question for 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin): Is the implementation of a sampling plan with n=60 feasible and does it enhance food safety?

17 Total Responses

- 59%: It enhances food safety and is it feasible to implement
- 6%: It does not enhance food safety
- 12%: It is not feasible to implement
- 23%: It does not enhance food safety nor is feasible to implement

Proposed Revision #110: Revised Sampling Plan Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 30)

Proponent: Vicki Scott, AZ LGMA

Proposed Revision: Revised language – “A [composite](#) sample shall be representative and random [and obtained as described in the California state regulations. \(See Appendix E\).](#)”

Rationale: Believe the word “composite” was missed in the section, as it’s included in other sections. Trying to conform with other language throughout the document.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #111: Added Sampling Plan Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 30)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- Sample may be taken by a trained sampler and/or verified automated process.

Rationale: Some of these products are being made in a manufacturing facility that do have automated sampling potential, so we wanted to be sure our language addressed that potential.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #112: Added Sampling Plan Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 30)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- For solids a minimum of n=60 samples or equivalent based on the manufacturer's production process. For Liquids sample size needs to be per production process lot sizes.

Rationale: New proposed language to align with the sampling requirements in the compost sections but also considers that the products may be solids and liquids that are different than compost and made from unique production processes.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #113: Added Testing Frequency Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 30)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet points:

- Each lot before application to production fields.
- Lot means a specific quantity of a finished product or other material that is intended to have uniform character and quality, within specified limits, and is produced according to a single manufacturing order during the same cycle of manufacture.

Rationale: Lot language based on the Lot glossary term for products other than compost.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #114: Added Testing Frequency Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 30)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- Reconditioned/re-processed product suspected of being contaminated.

Rationale: This is the same language as proposed above in the document.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #115: Added Application Interval Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 30)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet points:

- If a COA is available demonstrating that the input meets the microbial acceptance criteria outlined above, then no time interval is needed between application and harvest.
- Note: See best practices regarding what to consider when applying materials that may contact the edible portion of the crop.

Rationale: This is similar to original language for products that are considered low risk.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #116: Revised Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 31)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised bullet points:

- All products must have documentation that demonstrates they are free of pathogens of concern.
- All test results, ~~and/or~~ Certificates of Analysis, and ~~/or Certificates of Process Validation~~ documentation shall be current, reviewed before use, and available for verification from the grower (the responsible party) for a period of two years. Policies, procedures, letters of guarantee, and similar types of documents, must be updated annually. ~~The soil amendment supplier's operation should be validated by a process authority and a record maintained by the producer for a period of two years.~~

Rationale: This is similar to original language for products that are considered low risk.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #117: Added Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 31)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- Lot information (volume, weight, size, etc) shall be described on the COA.

Rationale: New proposed language to assure the product being received is the actual product that was tested.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #118: Added Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 31)

Proponent: Vicki Scott, AZ LGMA

Proposed Revision: Added alternative language:

- Lot information shall be described on the COA or lot information must accompany the COA if the information cannot be described on the COA. Lot information is required to be able to conduct traceability for the material applied to the growing location and to link the product to a test result. Information that could be used to confirm the lot description could be lot identification # associated with a treatment step, shift, time parameters, sanitation breaks, volume, weight, size but other parameters could also be used based on a specific production process.

Rationale: AZ offers alternative language regarding lot information declared on COA's. As voted on within the CA LGMA, lot sizes that were sampled were to be listed on COA's. It has come to our attention, that this practice may divulge proprietary business information. Suggested language was shared with AZ LGMA and CA LGMA. In the event that CA was not able to obtain approval, we offer the suggested language approved at the most recent AZ LGMA Technical Subcommittee meeting.

Poll Results: N/A.

Questions/Comments:

- Need to sort through which language will be included as this bullet and #117 are contradictory.
- Could they be combined as follows:
 - Lot information (volume, weight, size, etc) shall be described on the COA or lot information must accompany the COA if the information cannot be described on the COA. Lot information is required to be able to conduct traceability for the material applied to

the growing location and to link the product to a test result. Information that could be used to confirm the lot description could be lot identification # associated with a treatment step, shift, time parameters, sanitation breaks, volume, weight, size but other parameters could also be used based on a specific production process.

Proposed Revision #119: Added Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 31)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet point:

- Any biological soil amendment or crop input that DOES NOT contain products of animal origin must have documentation that shows the material is free of products of animal origin.

Rationale: No written rationale nor verbal rationale was provided.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #120: Added Rationale Language in Table 3: Soil Amendments and Crop Inputs – Section 7b (Non-Composted, Solid and Liquid, Soil Amendments and Crop Inputs Not Containing products of Animal origin) (see page 31)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added bullet points:

- Verification and COA testing should have statistically relevant sample units to provide high probability of detection. For solids a minimum of n=60 samples. For Liquids sample size needs to be per production process lot sizes.
- All products must be used in accordance with all local, state, and federal regulations.

Rationale: New proposed language to assure sample sizes are sufficient for the materials being tested. Also, new proposed language to assure all products are used in accordance to all applicable laws and regulations.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Poll Question for section 7b: Do the proposed metrics for composted solid/liquid, soil amendment and crop inputs not containing products of animal origin enhance food safety and are feasible to implement?

18 Total Responses

- 72%: They enhance food safety and are feasible to implement
- 5%: They do not enhance food safety

- 12%: They are not feasible to implement
- 12%: They do not enhance food safety nor are feasible to implement

Proposed Revision #121: Added Language to the Title in Table 3: Soil Amendments and Crop Inputs – Section 7c (see page 32)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language: “(Chicken pellets, blood meal, bone meal, feather meal, soybean meal, kelp meal, alfalfa meal, cotton seed meal, mustard meal, rice bran, treated fish emulsion, treated agricultural teas, etc.)”

Rationale: New proposed language to assure there is clarity regarding the types of products that fall under category 7c and that any treatment that is validated will be accepted. (i.e. heat, chemical, other)

Poll Results: N/A.

Questions/Comments:

Comment regarding Heat Process Validation in section 7c:

- LGSC would like to see a prohibition on direct contact with crops for any soil amendments containing animal manure, even after processing.

Comment regarding Acceptance Criteria in section 7c:

- LGSC would like to see established protocol for what to do if unacceptable results are returned and the inputs need to be further processed.

Poll Question for section 7c: Does the addition of STEC enhance food safety and is feasible to implement?

20 Total Responses

- 80%: It enhances food safety and is feasible to implement
- 10%: It does not enhance food safety
- 5%: It is not feasible to implement
- 5%: It does not enhance food safety nor is feasible to implement

Proposed Revision #122: Revised Sampling Plan Language in Table 3: Soil Amendments and Crop Inputs – Section 7c (see page 32)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language:

- [A sample shall be representative and random.](#)
- [Sample may be taken by a trained sampler and/or verified automated process.](#)
- [For solids a minimum of n=60 samples or equivalent based on the manufacturer’s production process. For Liquids sample size needs to be per production process lot sizes.](#)

- ~~• Extract at least 12 equivolume samples (identify 12 separate locations from which to collect the sub-sample, in case of bagged product 12 individual bags)~~
- ~~• Sample may be taken by the supplier if trained by a testing laboratory or state authority.~~
- ~~• Laboratory must be certified / accredited by annual review of laboratory protocols based on GLPs by a certification or accreditation body.~~

Rationale: This proposed language is similar to section 7b's proposed language. Wanted to make sure the language captured statistical relevance.

Poll Results: N/A.

Questions/Comments:

- LGSC would like to revisit this sampling plan to determine efficacy. N=60 is the standard we want to work towards with a defined sample lot size and detail around sampling locations.

Proposed Revision #123: Revised Testing Frequency Language in Table 3: Soil Amendments and Crop Inputs – Section 7c (see page 32)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language:

- Each lot before application to production fields.
- Lot means a specific quantity of a finished product or other material that is intended to have uniform character and quality, within specified limits, and is produced according to a single manufacturing order during the same cycle of manufacture.
- Reconditioned/re-processed product suspected of being contaminated.
- ~~• In lieu of the above analysis requirement, a Certificate of Process Validity issued by a recognized process authority can be substituted. This certificate will attest to the process validity as determined by either a documented (included w/Certificate) inoculated pack study of the standard process or microbial inactivation calculations of organisms of significant risk (included w/Certificate) as outlined in FDA-CFSAN publication "Kinetics of Microbial Inactivation for Alternative Food Processing Technologies. Overarching Principles: Kinetics and Pathogens of Concern for All Technologies" (incorporated for reference in Appendix E – Thermal Process Overview).~~

Rationale: This proposed language is similar to section 7b's proposed language.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #124: Revised Application Interval Language in Table 3: Soil Amendments and Crop Inputs – Section 7c (see page 33)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language:

- If the heat treatment process used to inactivate human pathogens of significant public health ~~concern that may be found in animal manure containing soil amendments, is validated and~~ meets the microbial acceptance criteria outlined above, then no time interval is needed between application and harvest.
- If the heat treatment process used to inactivate human pathogens of significant public health concern ~~that may be found in animal manure containing soil amendments~~ is not validated but will likely significantly reduce microbial populations of human pathogens and [product COAs](#) meets microbial acceptance criteria outlined above, then a 45-day interval between application and harvest is required.
- [Note: See best practices regarding what to consider when applying materials that may contact the edible portion of the crop.](#)

Rationale: Proposed changes are for simplification but similar to original language.

Poll Results: N/A.

Questions/Comments:

- LGSC would like to explore further the level of data required to be considered a validated process.
 - Even with a documented process, we support a buffer of at least 7 days prior to harvest (no later than the earliest possible pre-harvest risk assessment). This is given a sampling program and process validation plan that we have confidence in.
- Don Stoeckel (private citizen) – “Clarification, this seems like a potential loophole or area of future debate unless this standard specifies bounds on the terms “likely to reduce” and “significantly reduce”?”
- Audience question: Why is the target organism STEC but the recommended testing method for *E. coli* and mono?
 - That was an error. Align acceptance criteria with test methods

Proposed Revision #125: Revised Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7c (see page 33)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language:

Rationale: This proposed language is similar to section 7b’s proposed language.

- All test results, Certificates of Analysis and documentation shall be current, reviewed before use, and available for verification from the producer who is the responsible party for a period of two years. Policies, procedures, letters of guarantee, and similar types of documents, must be updated annually.
- Records of process control monitoring for on-farm produced soil amendments must be reviewed, dated, and signed, within a week after the records are made, by a supervisor or responsible party.
- Lot information (volume, weight, size, etc.) shall be described on the COA

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #126: Added Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7c (see page 33)

Proponent: Vicki Scott, AZ LGMA

Proposed Revision: Added alternative language:

- Lot information shall be described on the COA or lot information must accompany the COA if the information cannot be described on the COA. Lot information is required to be able to conduct traceability for the material applied to the growing location and to link the product to a test result. Information that could be used to confirm the lot description could be lot identification # associated with a treatment step, shift, time parameters, sanitation breaks, volume, weight, size but other parameters could also be used based on a specific production process.

Rationale: AZ offers alternative language regarding lot information declared on COA's. As voted on within the CA LGMA, lot sizes that were sampled were to be listed on COA's. It has come to our attention, that this practice may divulge proprietary business information. Suggested language was shared with AZ LGMA and CA LGMA. In the event that CA was not able to obtain approval, we offer the suggested language approved at the most recent AZ LGMA Technical Subcommittee meeting.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #127: Added Documentation Language in Table 3: Soil Amendments and Crop Inputs – Section 7c (see page 33)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Added language:

- All products must be used in accordance with all local, state, and federal regulations.

Rationale: This proposed language is similar to section 7b's proposed language.

Poll Results: N/A.

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #128: Revised Language in Table 3: Soil Amendments and Crop Inputs – Section 7d (see page 34)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language:

- [Any soil amendment or crop input that is synthetic or inorganic must have documentation that it is free of non-synthetic products and not containing ingredients of animal origin or manure.](#)
- [All products shall be produced, transported, stored, and applied to prevent contamination of lettuce and leafy greens crops and production areas.](#)
- [All products must be used in accordance with all local, state, and federal regulations.](#)

- ~~Any soil amendment that DOES NOT contain animal manure must have documentation that it is free.~~
- The documentation must be available for verification before use ~~harvest begins~~.
- Any test results and/or documentation shall be available for verification from the grower who is the responsible party for a period of two years.
- Note: See best practices regarding what to consider when applying materials that may contact the edible portion of the crop. ~~If there is documentation that the amendment does not contain manure or animal products then no additional testing is required, and there is no application interval necessary.~~
- ~~Any test results and/or documentation shall be available for verification from the grower who is the responsible party for a period of two years.~~

Rationale: Synthetic products are considered a low food safety risk. Proposed language reflects the requirement to have assurances that the products are synthetic and that they are being managed to prevent contamination and used according to all laws and regulations.

Poll Results: Poll Question for section 7d: Do the proposed metrics for synthetic and/or inorganic soil amendments or crop inputs enhance food safety and are feasible to implement?

15 Total Responses

- 80%: They enhance food safety and are feasible to implement
- 13%: They do not enhance food safety
- 0%: They are not feasible to implement
- 7%: They do not enhance food safety nor are feasible to implement

Questions/Comments:

- LGSC: Even with a documented process, LGSC supports a buffer of at least 7 days prior to harvest (no later than the earliest possible pre-harvest risk assessment). This is given a sampling program and process validation plan that we have confidence in.

Proposed Revision #129: Revised Language in Table 3: Soil Amendments and Crop Inputs – Section 7e
(see page 34)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Revised language:

- Any soil amendment or crop input that is combined must follow the criteria for the highest risk ingredient. (See 7a, 7b, 7c, and 7d above)
- The documentation must be available for verification before use.
- Any test results and/or documentation shall be available for verification from the grower who is the responsible party for a period of two years.

~~NOTE: MIXTURES OF SOIL AMENDMENT MATERIALS~~

~~For soil amendments that contain mixtures of materials, each component must meet the requirements of its respective class of materials. The usages allowed will conform to that of the most stringent class of materials utilized in the mixture.~~

~~For example, soil amendments containing animal manure that has been heat treated or processed by other equivalent methods that are mixed with soil amendments not containing animal manure would require a process certification for the heat treated (or processed by other equivalent methods) materials and the components from non-animal manure would require documentation attesting to its manure-free status. The resulting mixture could then be applied in accordance with the guidelines associated with the heated treated class of materials (most stringent limits).~~

Rationale: New proposed language is for simplification purposes but similar to the original language used for mixed products.

Poll Results: Poll Question for section 7e: Do the proposed metrics for synthetic and/or inorganic soil amendments or crop inputs enhance food safety and are feasible to implement?

17 Total Responses

- 82%: They enhance food safety and are feasible to implement
- 6%: They do not enhance food safety
- 0%: They are not feasible to implement
- 12%: They do not enhance food safety nor are feasible to implement

Questions/Comments:

- Audience question: How recent should the test results be?

Proposed Revision #130: Combined Issue 8: Non-Synthetic Crop Treatments with Issue 7: Soil Amendments (see page 33)

Proponent: Greg Komar, CA LGMA

Proposed Revision: Combined Issue 8: Non-Synthetic Crop Treatments with Issue 7: Soil Amendments.

Rationale: Combine to create a more comprehensive set of guidelines.

Poll Results: This proposed revision required no polling.

Questions/Comments: There were no questions or comments regarding this proposal.