



Arizona Leafy Greens Technical Subcommittee

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Sonia Salas
Western Growers
15525 Sand Canyon
Irvine, CA 92618

RE: Leafy Greens Guidance Comments

Greetings Ms. Salas,

The Arizona LGMA appreciates the efforts of Western Growers in revitalizing the metrics review process and for providing this opportunity to give input for the continuous improvement of the Commodity Specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens. The attached document represents a strawman review and commentary for the Field Sanitation Issues – Numbers 9, 10, 11, & 12 as made by the Arizona Technical Subcommittee. In general, we have recommended consolidating similar bullet points into the same common area when possible for reference ease. In some cases, we are advocating formerly bulleted best practices be incorporated into SOP's. We have suggested new language or movement/repetition of language to different issues for emphasis. To summarize, the following are the key areas of modification:

Harvest Equipment & Tools SOP- We support consolidation of bullet points referencing harvest equipment and tools.

Harvest Containers- We suggest segregating Harvest Containers into a stand-alone area withal relevant bullet points noted.

Food Packaging Materials-We offer bullet points noting best practices relevant to field food packaging materials.

Questions may be directed to the Arizona LGMA Administrator at (602) 542-0945 or tlopez@azda.gov. We look forward to the open discussion by all interested parties.

Sincerely,

Teresa Lopez
Administrator
Arizona Leafy Greens Marketing Agreement

WORK GROUP REVIEW and DISCUSSION OF FIELD SANITATION ISSUES 9, 10, 11, & 12

Current AZ Line or Section of Metrics	Current CA Line or Section of Metrics	Issue addressed	Previous Language	Rationale	New Proposed Language	Comments
Issue 9 HARVEST EQUIPMENT, PACKAGING MATERIALS, AND BUILDINGS						
681	677	Movement between commodities and excessive soil build up	Clean and sanitize food contact surfaces on harvest equipment at the end of each daily harvest.	Additional language to address movement between commodities/fields and to address excessive soil buildup	Clean and sanitize food contact surfaces on harvest equipment at the end of each daily harvest, or when moving between commodities & fields and when excessive soil has built up.	
682	678	Daily inspection.	Based on inspection, if necessary, rinse and sanitize food contact surfaces on harvest equipment prior to beginning daily harvest.	Relocation to require in SOP. Move from 678 to 686	Daily inspection that addresses cleaning & sanitation, or noticeable change in conditions from prior sanitation and if necessary the rinsing and sanitizing of food contact surfaces on harvest equipment prior to beginning harvest. (i.e. dirt, debris, dust, droppings, etc.)	Moved to below.
692	688	Documentation - Records	None	Addition of bullet point to SOP list to maintain records of cleaning & sanitation on harvest equipment and containers.	Documentation (logs or records) must be maintained daily for each cleaning & sanitation event. Records must be reviewed, dated and signed by a supervisor or responsible party within a week after the records are made.	SOP designate record keeping. Non-food contact surfaces states on line 735.
739	738	Sanitation personnel use of PPE and prevention of cross contamination from PPE.	none	Add procedure to reduce potential cross contamination for personal protection.	Harvester sanitation personnel must utilize PPE equipment such as gloves, aprons, boots, face shields, respirators (if required) in such a way as to prevent cross-contamination of harvest equipment, tools, etc.	
739	738	9	None	Add procedure to reduce potential cross contamination.	Harvest sanitation crew must store all cleaning and sanitation chemicals in a designated and secure location. that is locked and secure	Chemical storage, follow current metric for handling
686	682	Address all harvest container handling, cleaning in same section.	Prepare an SOP for harvest equipment and containers that addresses the following:	Locate harvest containers for stand-alone SOP.	Prepare an SOP for harvest equipment and containers that addresses the following:	
THE BLUE SECTION HAS BEEN INCORPORATED IN AN SOP ON EXCEL LINE 13						
	677	Increase water replenishment.	none	Reducing potential for cross-contamination of knives/tools.	When Prior to harvest crews exiting for breaks there should be a receptacle with clean, untouched, microbially potable sanitized water for tools to be placed in. Harvester SOP	Moved within SOP for harvest equipment and tools Line 13.
682	678	Daily inspection.	Based on inspection, if necessary, rinse and sanitize food contact surfaces on harvest equipment prior to beginning daily harvest.	Relocation to require in SOP. Move from 678 to 686	Daily inspection that addresses cleaning & sanitation, or noticeable change in conditions from prior sanitation and if necessary the rinsing and sanitizing of food contact surfaces on harvest equipment prior to beginning harvest. (i.e. dirt, debris, dust, droppings, etc.)	Moved within SOP for harvest equipment and tools Line 13.
734	731-734	Cleaning verification methods.	Evaluate the use of cleaning verification methods for harvesting equipment (e.g., ATP test methods).	Consolidated verification language be placed up in SOP, line 690	Consider methods that aid in sanitation verification (e.g. ATP, APC, etc.). At line 686 add--	Moved within SOP for harvest equipment and tools Line 13.
Beginning on 686	699	9	Establish and implement maintenance, cleaning, and sanitation schedules for containers and equipment used in hydration.	Move to bullets on SOP for harvest equipment line 690	Maintenance, cleaning, and sanitation schedules for equipment used in hydration.	Moved within SOP for harvest equipment and tools Line 13.
729	726-727	9	Establish policies and implement sanitary design principles that facilitate frequent and thorough cleaning of non-food-contact surfaces and cleaning and sanitizing of food-contact surfaces.	Eliminate redundant language. SOP creation 682-704 addresses. Sanitary design principles addressed in 720-725, policies unnecessary language.	(remove).	Moved within SOP for harvest equipment and tools Line 13.

731	728-730	9	Establish sanitation and/or cleaning frequency of food-contact and non-food contact surfaces of 728 equipment, tools, and containers by developing and implementing Sanitation Standard Operating 729 Procedures (SSOPs) and a sanitation schedule for machine harvest operations.	Eliminate redundant language. Addressed in 682-704	(remove).	Moved within SOP for harvest equipment and tools Line 13.
737	735-737	9	Develop and implement appropriate cleaning, sanitizing, storage, and handling procedures of all equipment and food-contact surfaces to reduce and control the potential for microbial cross contamination.	Redundant. SOP creation at 682 covers	(remove 735-737).	Moved within SOP for harvest equipment and tools Line 13.
686	682	Separation of harvest equipment from containers.	Prepare an SOP for harvest equipment and containers that addresses the following:	Locate harvest containers for stand-alone SOP	Prepare an SOP for harvest equipment and containers tools that addresses the following: - Clean and sanitize when moving between commodities and fields - Daily inspection that addresses cleaning and sanitation or noticeable change in conditions from prior sanitation and if necessary the rinsing and sanitizing of food contact surfaces on harvest equipment prior to beginning harvest. (i.e. dirt, debris, dust, droppings, etc.) - Proper cleaning sanitation and storage of hand-harvest equipment (knives, scythes, etc.) - Prior to harvest crews exiting for breaks there should be a receptacle with clean, untouched, microbially potable water with sanitizer for tools to be placed in - Consider methods that aid in sanitation verification - Maintenance, cleaning and sanitation of equipment used for hydration - Control procedures when equipment is not in use, including policy for removal of equipment from the work area or site and the use of scabbards, sheathe or other storage equipment	
686	682	Separation of harvest equipment from containers.	Prepare an SOP for harvest equipment and containers that addresses the following:	Repeat and locate additional bullet points for stand-alone SOP. Line 694	Prepare an SOP for handling and storage of harvest containers that addresses the following: Daily inspection Proper cleaning and sanitation - routine and for changes in conditions of materials Overnight storage Contact with the ground Damaged Container assembly (RPC, fiber bin, plastic bin, etc.) Use of containers containers only as intended	
In Issue 9 Line 707 as a suggestion	In Issue 9 Line 704 as a suggestion	Criteria necessary for food packing materials.	Located in different lines of the document.	Combine bulleted items or points into a common section on food packing materials beginning at line 744.	Food packing materials must be of adequate food safety design and quality for their intended use, which includes: - Cleanable and/or designed for single use to prevent the possible growth or transfer of pathogens - Store packing containers and materials off the floor or ground, and covered or in a covered area. - If packing materials are re-used, ensure that food contact surfaces are clean or lined with a new liner. - Consider obtaining a letter of guarantee for reusable containers if not cleaned in-house. - Packaging containers shall be free of breaks, cracks or broken or missing pieces	This is for field pack packaging. Food contact compliant acceptable standards for food contact surfaces
708	705	Introduction of pathogens at the cut surface.	Establish and implement appropriate measures that reduce and control the potential introduction of human pathogens at the cut surface during and after mechanical harvest operations. Due to the cut surface being more vulnerable to microbial contamination, this best practice is extremely important. Take all practical means to reduce the possibility of introduction of contamination at this process step.	Seems like an opportunity to make this simpler and more precise language and require SOP.	Cut surfaces are vulnerable to microbial contamination. Prepare an SOP that minimizes the potential introduction of contamination during and after mechanical harvest operations.	
712-713	709-710	Multi-pass water.	If re-circulated rinse or antioxidant solutions are used on the cut surface, take all practicable precautions to prevent them from becoming a source of contamination.	Addressed in multi-pass use water in 545 and in 680 of issue 9	Consider removal, but may be helpful to reiterate.	Check for audit checklist.

714-718	711-715	Monitoring of water used in harvest.	Instruments or controls used to measure, regulate, or record temperatures, hydrogen ion concentration (pH), sanitizer efficacy, or other conditions must be: o Accurate and precise as necessary and appropriate for their intended use o Adequately maintained; and o Adequate in number for their designated uses.	Addressed in post-harvest water at 545 and in 680 of issue 9	Consider removal, but may be helpful to reiterate.	Check for audit checklist.
723-725	720-725	Sanitary Design	Design equipment and tools to facilitate cleaning by using materials and construction that facilitate cleaning of non-food contact surfaces and cleaning and sanitation of food-contact surfaces (e.g., transportation tarps, conveyor belts, etc.). o Seams on food-contact surfaces on equipment and tools must be smoothly bonded or maintained to minimize accumulation of dirt, filth, food particles, and organic materials and the opportunity for harborage or growth of microorganisms.	Place as introduction after 677	Design equipment and tools to facilitate cleaning to a microbiologically clean level: Food equipment must be constructed to ensure effective and efficient cleaning of the equipment over its lifespan. The equipment should be designed as to prevent bacterial ingress, survival, growth and reproduction on both produce and non-product contact surfaces of the equipment. o Seams on food-contact surfaces on equipment and tools must be smoothly bonded or maintained to minimize accumulation of dirt, filth, food particles, and organic materials and the opportunity for harborage or growth of microorganisms.	Consider creating a glossary reference to sanitary design. Add this reference: https://www.qualityassurancemag.com/article/sanitary-design-principles/
	738-739	9	Locate equipment, tool, and container cleaning and sanitizing operations away from product and other equipment to reduce the potential for cross-contamination.	Clean up language. Relocate to line 684 - remove from 738-739)	Sanitizing and cleaning operations of equipment should take place away from product and other equipment to reduce the potential for cross contamination.	Do not take out.
741	740-742	Cross contamination of harvest equipment and tools as well as general farm equipment.	If equipment and tool food-contact surfaces have contact with produce that is not covered by the Produce Safety Rule, adequately clean and sanitize before using this equipment to harvest lettuce/leafy greens.	Reinforce language in Issue 9 in Issue 12. Lines 847-849. This places emphasis on farm equipment.	Place at 847-849. New language: When farm equipment has had direct contact with raw untreated manure, untreated compost, waters of unknown quality, animals, uncovered produce as defined in the PSR, excessive soil or other potential human pathogen reservoirs it may be a source of cross contamination. If farm equipment comes into contact with a potential source of contamination steps need to be set in place to address cleaning and sanitation to prevent cross contamination.	
749-750	749-750	Equipment turning.	Allow adequate distance for the turning and manipulation of harvest equipment to prevent cross contamination from areas or adjacent land that may pose a risk.	Also include in issue 12.	State again in issue 12 for the distinction between harvest equipment and regular farming equipment.	
756	755	Reduction of contamination inside buildings.	Take proper precautions to reduce potential for contamination of food contact surfaces or packaging materials. Reduce the potential for contamination by effective building design including the separations of operations in which contamination is likely to occur by location, time, partition, enclosed systems, or other effective means.	Clean up language and redundancy.	Reduce the potential for contamination of food contact surfaces by effective building design including the separations of operations in which contamination is likely to occur. Suggestions are location, time, partition, enclosed systems, or other effective means.	
Issue 10 HARVEST PERSONNEL - DIRECT CONTACT WITH SOIL AND CONTAMINANTS DURING HARVEST						
766-769	765-768	Add references in introductory paragraph	Takeuchi et al, 2001	Enhances research citation.	Add Rock/Suslow 2019	Add research citing Rock/Suslow. NOT published, yet.
New Bullet prior to line '771'	New Bullet prior to line '770'	Training regarding soil contact.	Reinforces line 173,174 regarding training on recognition of leafy greens that must not be harvested including product that may be contaminated with known or reasonably foreseeable hazards. FSMA	Sensitize employees to food safety issues with soil contact.	Ensure employees have been trained on the importance of minimizing the potential of cut product to contact the soil.	Training and education stand to provide greatest gains in food safety protections.
New Bullet after '771'	New Bullet after '770'	Change in weather conditions that might increase potential for soil contact with cut surfaces.	Reinforces line 202-205 on evaluating potential environmental sources of contaminants near production locations after a change in weather condition or weather events that could impact the original risk assessment of the field or block.	Increased surveillance i.e., focus visual inspection on amount of in field debris, excess mud on plants, other potential sources of contamination. See Appendix F. Daily Harvest	Evaluate the field for conditions that are likely to increase the risk of soil contact with cut product.	Minimizing hazards if soil is potentially contaminated. Reducing potential to spread. Soil not necessarily a high risk.

Modify bullet line 771-774 place after the two bullets noted above	Modify bullet line 770-773 place after the two bullets noted above	Soil contact with harvested product.	Evaluate appropriate measures that reduce and control the potential introduction of human pathogens through soil contact at the leafy green cut surface after harvest (e.g. frequency of knife sanitation, no placement of cut surfaces of harvested product on the soil, container sanitation, single-use container lining, etc.).	Focus on action word 'employ'.	Employ measures to minimize the potential introduction of human pathogens through soil contact of cut product at the leafy green cut surface after harvest (e.g. frequency of knife sanitation, no placement of cut surfaces of harvested product on the soil, container sanitation, single-use container lining, etc.).	Rock/Suslow studies illuminate the issue, but further studies needed, including the standard question of can the research be duplicated in repeat evaluations. Focus on cut product.
776	775	Eliminate PM contact with soil	Do not stack soiled bins on top of each other if the bottom of one bin has had direct contact with soil unless a protective barrier (i.e., liner, cover, etc.) is used to separate the containers.	Broaden description from bins to packaging.	Packaging material should not have direct contact with soil. Physical barriers (i.e. liners, covers, existing plant material or other clean barriers) should be used to separate from soil	
Issue 11 FIELD AND HARVEST PERSONNEL - TRANSFER OF HUMAN PATHOGENS BY WORKERS						
Glossary	Glossary	Cyclospora Definition	Not available		<i>Cyclospora cayetanensis</i> is a human parasitic pathogen that causes a gastrointestinal infection in humans called cyclosporiasis. Individuals can become infected through ingestion of contaminated food or water.	A known health issue and attributed to food borne illness outbreaks.
796	796	Add hand sanitizer is not a substitute for proper handwashing	Use of antiseptic/sanitizer or wipes, as a substitute for soap and water, is not permitted	Need to highlight earlier in section discussing handwashing	Bring statement from 828 "Use of antiseptic/sanitizer or wipes, as a substitute for soap and water, is not permitted" to bullet 796-799 for additional emphasis.	Reinforcement of handwashing and hand sanitizer as not a substitute. Covid -19 may have aftershocks. (3/25/20)
802	802	Glove use	If gloves are used in handling or harvesting lettuce/leafy greens, maintain gloves in an intact and sanitary condition and replace them when no longer able to do so.	Strengthen T & E component on when they should be cleaned or replaced	Training topic on glove use, when should gloves be replaced or cleaned? - not changing language but adding T&E component into LGMA program.	Not a metric, but really a training improvement suggestion. (3/25/20)
802	802	Glove use	None	Add a bullet regarding latex.	The use of latex in gloves or other PPE is prohibited due to allergy concerns for workers and consumers.	The committee feels that no-latex practices are in widespread use in the industry.
822	823	Return to work policy for illness	Actions for employee to take in the event of injury or illness i.e., notifying a supervisor or other responsible party	Strengthen requirement	Instruct personnel to notify their supervisors if they may have a health condition that may result in contamination of covered produce or food contact surfaces. Companies shall develop & communicate return to work policies for returning employees to food contact positions after an illness or cuts & grazes.	Should to shall. New language around COVID-19 and may incorporate. Use some Federal references. (3/25/20) Changed "Should to "shall" .
824	824	Asymptomatic illnesses	None	Increased awareness needed based on recent outbreaks	Additional training and education on illnesses that can be asymptomatic (e.g. Cyclospora, hepatitis, COVID -19) should be considered.	Hepatitis, others. Added hepatitis, COVID -19. Should this be SARS-CoV-2 given the newer nomenclature?
826	827	Differences between field or ranch units & harvest units	A field sanitary facility program(i.e., an SOP) shall be implemented, and it should address the following issues: the number, condition, and placement of field sanitation units according to federal, state or local regulation, the accessibility of the units to the work area, facility maintenance, facility supplies [i.e., hand soap, water(use of antiseptic/sanitizer or wipes, as a substitute for soap and water, is not permitted), single-use paper towels, toilet paper, etc.], facility signage, facility cleaning and servicing, and a response plan for major leaks or spills.	Frequency & type of cleaning to take place and distinction between field/ranch units and harvest units.	A field sanitary facility program(i.e., an SOP) shall be implemented, and it should address the following areas: the number, condition, frequency, type & location of cleaning [i.e., field permanent vs harvest placement] according to federal, state or local regulation, the accessibility of the units to the work area, facility maintenance, facility supplies [i.e., hand soap, water(use of antiseptic/sanitizer or wipes, as a substitute for soap and water, is not permitted), single-use paper towels, toilet paper, etc.], facility signage, facility cleaning and servicing, and a response plan for major leaks or spills.	Permanent vs harvest
826-844	826-844		None	Add a bullet	Establish an inspection plan for the use of foot dips, boot track-out and similar protections if utilized in the operation.	Discussed but no recommendation suggested.
		Segregation of cleaning equipment	None	Add a bullet line 834.	Whenever appropriate, segregate and properly label, (i.e. color code, tool description) cleaning and sanitizing equipment and tools to prevent misuse or cross-contamination. (Tools used for bathroom cleaning).	
		Segregation of cleaning equipment	None	Add a bullet in same area Line 834.	Ensure that workers are trained on concepts of tool separation and color coding.	On proper use of cleaning tools ALL workers.
Suggested842	Suggested841	Storage of utensils used for cleaning	None	Prevent contamination from cleaning tools.	Cleaning utensils used for sanitary units shall be stored in a manner to prevent contamination when not in use and only used for this purpose.	Expanded on "when not in use, and only used for this purpose"

842	843	Storage of units used during harvest or field operations	Establish and implement equipment and supply storage and control procedures when not in use.	Broaden language to include distinction between harvest and field units.	Establish and implement equipment and supply storage and control procedures when not in use. Indicate storage of harvest units when not in use and cleaning procedures prior to placing back into service before transporting to harvest or field location.	Added in field since some of these types of units can be used during field operations like weeding, thinning, transplanting not just during harvest. Cleaned prior to being back into service. Added 'placed back into service'
843	844	Cleaning, servicing or stocking records	Maintain documentation of maintenance and sanitation schedules and any remedial practices for a period of two years.	Connect to SOP and add language for proper waste disposal.	Maintain documentation of maintenance and sanitation schedules and any remedial practices for a period of two years. Servicing records (either contracted or in-house) should be available for review to verify this is occurring according to SOP. Waste disposal shall be in accordance with all state and federal regulations and in an authorized location.	Being disposed of in an authorized location. Added "waste disposal shall be in accordance with all state and federal regulations in an authorized location."
Issue 12	EQUIPMENT FACILITATED CROSS-CONTAMINATION					
750 Move to 850	749-750 Move to 854	Prevention of cross contamination by turning of equipment.	Allow adequate distance for the turning and manipulation of harvest equipment to prevent cross contamination from areas or adjacent land that may pose a risk.	Also include in issue 12.	Allow adequate distance for the turning and manipulation of farm equipment to prevent cross contamination from areas or adjacent land that may pose a risk.	
846	845	Introductory paragraph regarding uncovered produce - PSR.	None	Add similar language from 740-742 regarding farm equipment and place in issue 12. Introductory paragraph at line 847-849.	When farm equipment has had direct contact with raw untreated manure, untreated compost, waters of unknown quality, animals, uncovered produce as defined in the PSR, excessive soil or other potential human pathogen reservoirs it may be a source of cross contamination. Should a cross contamination take place refer to SSOP and adequately clean and sanitize before using the equipment to harvest lettuce/leafy greens.	