



Cleaning & Sanitation of Harvest Equipment

The Arizona LGMA metrics (Issue 8) addresses cleaning & sanitation of harvest equipment, tools, packaging materials, and fully or partially-enclosed buildings to store food-contact surfaces used for lettuce/leafy greens(LGs). Below are some highlights from the metrics when reviewing your sanitation procedures.

- Equipment cleaning and sanitizing operations should take place away from produce and other equipment to reduce the potential for cross-contamination.
- Clean and sanitize food-contact surfaces on harvest equipment at the end of each daily harvest or when moving between commodities and fields and when excessive soil has built up.
- Harvest sanitation crews must store all cleaning and sanitation chemicals in a secure location.
- All water utilized in cleaning & sanitizing of equipment must meet harvest water acceptance criteria (Table 2G)
- Document! Logs or records must be maintained for each harvest equipment cleaning & sanitation event.

Cleaning & sanitation of harvest equipment is one of the most valuable programs in your field food safety plan. Having effective cleaning procedures with verification activities can ensure that the product does not become cross-contaminated during harvest because of the lack of proper equipment sanitation.

6 key steps ensure effective equipment cleaning:

1. Remove debris from machine
2. Rinse residue left behind
3. Apply Soap and Scrub!
4. Rinse
5. Sanitize and Air Dry
6. Inspect and Verify!

Make sure to always follow the manufacturer's instructions for mixing and applying detergents & sanitizers. Also ensure you are using the right chemical for the job and verifying concentrations!

Commonly used verification activities after cleaning & sanitizing include:

- **Visual Inspection** - The verifier will document effective

cleaning by asking questions while inspecting the cleaned equipment: does the equipment look clean and sanitized? Has debris been effectively removed from all surfaces? Are any plant residues still present on the surfaces? This method is usually performed by a harvest supervisor who verifies that the sanitation crew cleaned all surfaces effectively after harvest.

- **ATP Testing** - Since all organic material contains Adenosine Triosphate(ATP) the instrument can detect if any residual ATP is still on the surface after cleaning. With a Luminometer instrument and ATP swabs the verifier can track trends and verify

If you would like more information on the Arizona LGMA and metrics topics, feel free to contact us.

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onsite very quickly if the surface is clean. The portability of the instrument and equipment makes this tool desirable while out in the field.

- **Microbiological testing of surfaces** - Verifiers can take larger swab samples of equipment surfaces to ensure effective cleaning as well. Common tests include Aerobic Plate Counts, Generic *E coli*, Coliforms, Yeast/Mold and sometimes pathogens. Environmental Monitoring programs are usually reserved for packing & processing facilities but can be an effective verification step for harvesting equipment as well.

The following Standard Operating Procedures that must be developed for harvest equipment & tools include:

- Clean and Sanitize Equipment when moving between commodities and fields.
- Prior to beginning harvest, conduct a daily inspection that addresses cleaning and sanitation or noticeable change in conditions since sanitation was conducted. If necessary, rinse and sanitize food-contact surfaces on harvest equipment (i.e. accumulation of dirt, debris, dust, droppings, etc)
- Proper cleaning, sanitizing and storage of hand-harvest equipment (knives, scythes, etc)
- Prior to harvest crews exiting for breaks, harvest tools should be placed in a receptacle.

SOPs for Sanitary operation of equipment must include:

- Spills & Leaks
- Inoperative water sprays
- Exclusion of foreign objects
- Procedures for the storage and control of water tanks and equipment used for hydration when not in use.
- Maintain logs documenting cleaning & sanitation activities

Sanitation Standard Operating Procedures (SSOPs) that must be in place to address frequency of cleaning and sanitizing of non-food-contact and food-contact surfaces. This includes:

- Developing and implementing a sanitation schedule for machine harvest operations (e.g. transportation tarps, conveyor belts, etc)
- Developing and implementing appropriate cleaning, sanitizing, storage, and handling procedures of all equipment and food-contact surfaces.
- If equipment, tools, and 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.

The cleaning & sanitation training program by Food Safety CTS, LLC is nearing completion, be on the lookout for upcoming scheduled training on the AZLGMA website.

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