

Food Safety Modernization Act (FSMA)

HEMP MICROGREENS PRODUCE SAFETY

Guidance:

The Produce Safety Rule offers comprehensive guidance and requirements, considering the evolving science on effective practices as we learn more from outbreaks. The Rule includes specific requirements for sprouts growers; these are not required for microgreens growers but are important to understand. Below is a compilation of key practices for safe microgreens production considering those policies and current research. Key practices safe microgreen production: Food safety challenges associated with microgreens production primarily have to do with seed handling, the temperature and humidity of the growing environment, harvest practices and the basic fact that this product is usually consumed raw. Key practices to manage these challenges include the following.

- Seeds for microgreens can be a source of pathogens – handle seeds as carefully as the greens that you will harvest. Examine seed for contamination and spoilage upon receipt. Use clean and sanitized containers for storing seed if not in original packaging and evaluate your storage area for cross contaminants (for example, don't store untested fertilizers of animal origin in proximity to microgreen seeds). Follow the general package directions for safe seed storage considering humidity, temperature, and light exposure. Source seeds from a partner that has a food safety plan and cleans the seed, or clean/treat the seed yourself. Microgreen seed decontamination is a subject of ongoing discussion among researchers.
- Use soils and soil amendments that are sterilized, properly composted, or otherwise determined to be free of pathogens – get a certificate or letter from your supplier. If preparing your own compost, maintain a minimum temperature of 131 degrees F for a minimum of 3 consecutive days for a static pile, or 15 days for a turned pile. Or consider a soilless growing media.
- Follow FSMA guidance on agricultural water – water must be tested and have no detectable E. coli per 100 ml to ensure it is safe for seed rinsing, soaking, treatment, and pre-germination, as well as production irrigation and any post-harvest washing. Note: municipal water is treated and tested; test results are usually available online from the utility.
- Incorporating UV lights into indoor microgreen production can help reduce pathogen loads, but they do not eliminate them.
- Establish procedures to clean and sanitize food contact surfaces (tools, harvest containers and equipment) to prevent contamination of seeds and microgreens. Choosing tools carefully reduces the risk of contamination. Harvest knives, scissors and pruning shears made of hard, non-porous surfaces can be easily cleaned and sanitized. Mechanized tools, such as a greens harvester, can increase efficiency but should be carefully evaluated to ensure that all elements can be cleaned and sanitized between harvests, particularly if GAP certification is of interest.
- Post-harvest washing of microgreens appears to be ineffective and could increase the risk of contamination (due to tissue damage that invites pathogen growth). To date, indications are that it is best not to wash microgreens on the farm.
- Ensure that worker health and hygiene practices are in place to prevent contamination of seeds and microgreens. Key practices include ongoing training, monitoring for illness (do not handle microgreens when ill!), and proper hand washing and glove use.

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HEMP MICROGREENS PRODUCT SAFETY continued:

- Monitor for pests and manage them to prevent contamination of seeds and microgreens. Do a pre-harvest risk assessment (evaluate the crop before harvest) for any signs of contaminants or physical hazards. Remove hazards and any affected microgreens.
- Choose and store packaging safely – covered, off the floor, and at least 18 inches from walls. Safe handling and final packaging of microgreens at the farm limits any potential contamination of your product down the delivery line (such as at a wholesaler or retailer) and can protect your reputation.
- Make sure any pesticides or other chemicals are approved for microgreens and follow the EPA label instructions. Also check to make sure that sanitizers do not leave a residue that could compromise germination, the quality of the crop or public health.
- Include your farm name, address, and harvest date on final packaging. Also consider including a wash before serving disclaimer. Keep ‘traceability’ records (seed to harvest to delivery) so that you are prepared to handle an illness associated with your product, identify potential causes and limit exposure.
- Contact ADAI with any questions at 334-240-7186, <https://agi.alabama.gov/foodsafety/>

RESOURCES AND REFERENCES:

- Colorado State University (CSU) Food Science and Nutrition. 2019. [Sprouts vs. Microgreens – How Do The Risks Compare?](#) (accessed June 17, 2020).
- Produce Safety Alliance. 2020. [Resources and training for growers](#) (accessed June 2020).
- Riggio GM, Wang Q, Kniel KE, Gibson KE. [Microgreens-A review of food safety considerations along the farm to fork continuum](#). Int J Food Microbiol. 2019;290:76-85. doi:10.1016/j.ijfoodmicro.2018.09.027 (accessed June 2020).
- [FDA Proposes Changes to Agricultural Water Requirements in the Produce Safety Rule | FDA Grower Training Course | CALS \(cornell.edu\)](#)
- (Riggio et al, 2019) [Microgreen nutrition, food safety, and shelf life: A review - Turner - 2020 - Journal of Food Science - Wiley Online Library](#)
- [Food Safety Modernization Act – Alabama Agriculture & Industries – Food Safety](#)
- [GAP/GHP – Alabama Agriculture & Industries – Farmers Market Authority](#)