



MICROGREENS

FOOD SAFETY CONSIDERATIONS FOR PRODUCING AND PACKING MICROGREENS

As is the case for all food producers regardless of what commodity they produce or pack, growers need to be aware of potential biological, chemical, and physical hazards when growing, harvesting and packing fresh produce. An explanation of these hazards and possible sources are listed in the table below.

Biological Hazards
<ul style="list-style-type: none"> • Includes bacteria, viruses, parasites or fungi (yeast and molds) that can cause food-borne illness if they or their toxins are ingested • Found in the environment (soil, water, air, decaying matter, fecal matter, etc.) • Favorable conditions such as temperature, humidity, pH, water activity and oxygen availability facilitate their growth
Chemical Hazards
<ul style="list-style-type: none"> • Naturally occurring toxins and allergens • Chemicals intentionally added to food (e.g. preservatives and additives) • Chemicals unintentionally added to food (e.g. pesticides, chemicals from packaging material, sanitation, and maintenance chemicals) • Approved chemicals added to food and used in the area to control micro growth are not intended to be hazardous, however if used in higher than desired amounts can be harmful to consumers
Physical Hazards
<ul style="list-style-type: none"> • Any extraneous or foreign material or object that can cause injury or illness to a consumer such as (but not limited to) glass, plastic, metal, wood, animal droppings or insects

For microgreens there are risks in each of these hazard categories that must be considered and mitigated. For example, pathogenic organisms can be found in seeds, soil and transplants or even transferred through poor hygiene. Seeds from your seed supplier could arrive already carrying harmful bacteria. It is best practice to use a reputable supplier for your inputs, preferably one that completed sampling and testing of their products. Water used for washing, watering or even growing hydroponically needs to be potable or it can contribute to bacterial contamination.

Listeria, can be an issue when growing and harvesting microgreens due to condensation and even dust accumulations. Proper ventilation is key in the growing, harvesting and storage area such as a cooler that is clean and set to the proper temperature to store product. Pests such as rodents, birds, flies, wildlife and even household pets must be kept out of the growing, harvesting, packing and storage areas. Keeping the area clean and having a sanitation and pest prevention program in place is key when producing food, this includes areas inside and outside of the facility. Having a well communicated hygiene program can also help prevent harmful organisms from being transferred from non-food contact to food contact areas as well as to product handled by the employees.

Allergens may be found in the seeds you purchase or the crops you grow (mustard is one of the priority allergens in Canada). Making sure you harvest to prevent cross contamination through scheduling, sanitation and segregation of the allergen, or a combination of any of the three, during storage, planting, harvesting and packing is best practice. Allergens should be stored below not above non allergens to prevent possible cross contamination.



FACT SHEET

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For example if you do you harvest or handle allergens do you handle them on one day only or do you handle these products at the end of the day. Hygiene is also key in controlling the possible transfer of allergens. Allergens can transfer from employees' hands or clothes from eating lunch in a food handling zone or not washing their hands properly or checking their clothes or covering them prior to handling product or packaging.

Storing and handling chemicals, including nutrients properly is also important. Are they secure and kept away from product and packaging areas? Are you using sanitation chemicals properly (proper concentration)? Are employees washing their hands after handling nutrients and chemicals and not using planting or packing materials when handling chemicals? Glass from lighting or equipment, nails and wood from pallets, metal or paint flakes from racking are all examples of possible sources of foreign material. Protect lighting and have a preventative plan in place to ensure pallets are in good shape as well as racks and equipment.

These are just examples of some of the hazards that could be found in a microgreen handling operation. Each operation is different and must individually identify the risks that may apply to their situation. Implementing Good Agricultural Practices are preventative measures to control the risk with growing, harvesting and packaging microgreens. These measures set you up for success for when you progress to an On Farm Food Safety system (OFFS) or 3rd party audited certification. For more information please see the Quality and Food Safety Resources section on the Perennia website.

FOR MORE INFORMATION CONTACT

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