

**Good Agricultural Practices**

**I Commodity Specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens**

All standards defined in the Leafy Greens Marketing Agreement metrics apply, unless modified in this GAP program, and are fully endorsed by Top Flavor Farms Inc.

**II Soils and Ranch – History, Use and Location**

1. Pre-planting ranch and pre-harvest assessments shall be conducted on all crop locations. Records of the cropping history of each ranch must be kept, and made available upon request. Records are to be kept for a minimum of five (5) years.
2. Records of all ranch input (i.e., fertilizers, pesticides, etc.) for each ranch shall be kept and made available upon request. Records shall include chemical/fertilizer, date of application, applicator’s name and quantity used.
3. Domestic animals shall not be permitted on any field location. Any evidence of animal intrusion will require a food safety assessment (see Pest and Wildlife Control). Remedial actions include a minimum 5-foot buffer around the affected areas or, in extreme cases, destruction of the entire crop. Equipment used in the destruction of contaminated crops must be cleaned and sanitized upon exiting the field. Appropriate risk-mitigation factors must be implemented prior to planting.
4. Fields shall be located a minimum of 30 feet from ranch structures (houses, building, barns, sheds, etc.) with perimeter fencing. Buffering distances may be adjusted depending on risk-mitigation factors, topography, harborage, evidence of domestic animal activity and overall structure/yard conditions. Associated septic tanks and waste systems must be properly contained and meet all state and local regulations. Septic leach fields must be at least 30 feet from crop fields.
5. Fields shall be located a minimum of 800 feet from cattle feedlots, dairy operations and other “contained animal feeding operations” (CAFO) with 26 or more animals per acre. This includes fields that are not currently active but may be active during the planting, growing and harvesting of a crop. Buffering distances are dependent on wind direction, topography, drainage and other conditions.
6. Fields shall be located a minimum of 100 feet from active open-range animal feeding operations and “hobby farm” operations with 25 or more animals per acre. This includes fields that are not currently active but may be active during the planting, growing and harvesting of a crop. Buffering distances are dependent on wind direction, topography, drainage and other conditions.
7. Fields shall be buffered from public roadways a minimum of 20 feet. Foreign material (trash, vegetation, etc.) shall be monitored and removed during the growing season.
8. Erosion-control vegetation such as ice plant must be properly maintained, free of uncontrolled animal activity and located at least 30 feet away from any wild animal harborage areas.
9. Fields previously used for grazing may be subject to soil-testing and field assessments, depending on the number and type of animal present, as well as grazing duration. Fields must meet the following minimum requirements prior to planting:
	1. Intensive grazing (six months or more) – 18 months minimum after the end of the grazing period.
	2. Light grazing (less than six months) – 12 months minimum after the end of the grazing period.
	3. Adjacent crop fields must be located a minimum of 100 feet from grazing fields.
	4. The buffer must be maintained after the grazing period for durations indicated in points “a” and “b.”
10. Fields previously used as landfills or toxic waste sites shall not be used to grow vegetables for Top Flavor Farms.
11. Fields previously used as feedlots shall not be used to grow vegetables by Top Flavor Farms for a minimum of five (5) years. After five years, the fields will be subject to validation and must meet soil-testing and ranch-assessment standards prior to planting.
12. Municipal waste shall not be stored on, or adjacent to, the fields.
13. Genetically modified organisms or crops shall not be used in any phase of crop production.
14. Buffers and/or other strategies shall be implemented to minimize foreign material contamination from trees, roadways and pedestrian traffic.
15. Irrigation reservoirs must be contained within perimeter fencing to prevent animal and human intrusion.
16. Flooding, flood waters and pooled water:
	1. Pooled water – Water accumulated in a field after a rain event that has not been in contact with external environmental water sources such as runoff from surrounding areas is not believed to be a source of microorganisms or other contaminants of health concern to crops.
	2. Flood waters – Water that has its source, in whole or part, from rain runoff, overflowing water bodies can produce microorganisms and/or other contaminants to a field.
	3. Adulteration – Per U.S. Food and Drug Administration regulations, crops that have come into contact with floodwaters are considered adulterated. Adulterated food may not be used for human consumption.
	4. Crops that have been exposed to flooding shall not be harvested and a buffer zone of at least 30 feet shall be placed between the high watermark and remaining crop. The buffer zone shall not be harvested. Buffer zones may be greater than 30 feet if a field assessment determines a greater distance is warranted.
	5. Documentation of the flooding, buffering and un-harvested crop shall be by photograph.
	6. Land that has been subject to flooding shall have a time interval of not less than 120 days between the end of the flood event and harvest.
	7. Soils from the flooded land shall be tested for microorganisms of health concern prior to planting.

**III Pest and Wildlife Control**

1. **Pests** are defined as animals, including frogs, rodents, squirrels and other small animals natural to the environment.
2. **Wildlife** include birds (migratory and local), deer, wild pigs, coyotes and other larger animals native to the environment.
3. **Wildlife harborage** areas, whether natural or intended, include trees, shrubs, ponds, rivers, sloughs, drainage ditches, reservoirs, structures, fences, gardens, equipment yards, etc., that allow for the natural existence of wildlife and other pests.
4. **Animal intrusion** can cause damage to crops or growing medium when exposed to wild or domestic animals, animal carcasses, wildlife nests, large-animal fecal contamination, extreme bird fecal contamination and other activities.
5. **Buffer zones** shall be kept free of material, growth and debris that would permit harborage and “safe” passage of pests and wildlife into ranch fields.
6. Any evidence of animal intrusion requires a Top Flavor Farms **food-safety assessment**. Remedial actions include a minimum five-foot buffer around the affected area or, in extreme cases, destruction of the entire crop. Field showing excessive intrusion and activity shall not be harvested. Equipment used in the destruction of contaminated crops must be cleaned and sanitized upon exiting the field. Appropriate risk-mitigation factors must be implemented prior to planting.
7. Where needed, and in compliance with local and state law, **fences and appropriate restraining barriers** shall be used to prevent access onto ranch fields by wildlife and other pests.
8. **Rodent-trapping** stations shall be used along all wildlife harborage areas. Poison rodent bait-stations may be used during the off-season, but must be replaced with non-poisonous traps after planting. Buffering distances and rodent-monitoring stations are dependent on risk-mitigation factors such as silt fencing or removal of harborage vegetation and debris.
	1. Rodent-monitoring stations shall be placed nearest to harborage areas. Traps are not required along roads dividing adjacent fields, and are not allowed within a crop or field.
	2. Fields shall be buffered at least 30 feet from rodent-monitoring stations.
	3. Traps shall be monitored weekly for rodent activity.
	4. TopFlavor Farms’ food-safety personnel must be notified if excessive rodent activity is present.
9. **Bird control** requires appropriate exclusionary measures to minimize the presence of birds. Measures include removal of attractants, such as other pests (a food source) and harborage areas. The use of bird “noise guns” may be implemented to scare away birds from growing areas.

**IV Fertilizers and Soil Amendments**

1. Municipal sewage sludge shall not be applied to fields used for growing vegetables.
2. Raw manure or partially composted manure shall not be applied to field used for growing vegetables.
3. Compost and/or fully composted manure shall be used only as a pre-planting soil amendment for selected fields and shall be applied and turned at least 120 days before the expected harvest date.
4. Compost soil amendments containing animal manure or animal products must reach a minimum internal temperature of 131° F (55° C) and maintain 131° F to 149° F for a minimum of three days during the aging process, with a curing period of at least 45 days before application.
5. Each lot of compost shall include a certificate of analysis prior to any receipt and use. Compost shall be sampled and tested per the following microbial standards:
	1. Ten 50-gram representative samplings are to be taken from throughout the lot. Samples may be composited prior to testing. Non-composited samples shall be individually tested.
	2. Fecal coliforms must be less than 1000 MPN/g
	3. Salmonella must not be present (negative/30 grams of composite sampling).
	4. E. coli 0157:H7 must not be present (negative/30 grams of composite sampling).
6. Fields shall be located a minimum of 800 feet from compost operations. Buffering distances are dependent on wind direction, topography, drainage and other conditions.
7. On-site storage of compost materials is not recommended. However, if there is a short-term need (no more than two weeks), compost shall be stored no less than 200 feet from any field in a manner that keeps the material dry and not subject to possible contamination. Under no circumstances shall compost be stored near active growing leafy green-growing/harvesting operations.
8. Compost and composted manure applications must be performed in a manner that prevents material from drifting onto adjoining food-crop fields.

**V. Water Quality and Testing**

A. Water used for irrigation, spraying and mixing pesticides must meet the microbiological-quality standards for generic E.coli in recreational water. Specifically,

a. All water sources shall be tested on a monthly basis.

b. Sample locations shall be as close to the point of use as possible with the first sample taken prior to planting or seed germination.

c. A geometric mean must be established with five consecutive samples. Samples must be at least 18 hours, but no more than one month, apart from the previous sample. The geometric mean cannot be calculated until all five results are available.

d. Monthly samples shall be taken thereafter and the rolling average calculated from the most current five sampling results.

e. The average must be <126 MPN/100 ml with no single sample greater than 235 MPN/100 ml for foliar irrigation, or greater than 576 MPN/100 ml for non-foliar irrigation. If limits are exceeded, the water source cannot be used again until its rolling average falls below 126 MPN/100 ml.

f. Test records must be maintained and available upon request.

B. Corrective measures must be documented and records of those measures must be available for review.

**VI Pesticide-Use Records and Residue-Testing**

1. A professional pest-control advisor shall be used for pesticide-applications recommendations.
2. Pesticide applications shall be conducted by certified applicators or trained personnel.
3. Applicators shall comply with food safety requirements, application restrictions and employee-safety guidelines.
4. Only approved pesticides shall be used according to its label and in compliance with federal, state and local regulations.
5. Application services are subject to federal, state, county or private audits.
6. Measures must be taken to avoid pesticide application drift from adjacent fields. Where wind is a daily factor, applications must be performed only during non-windy times.
7. Pesticide-application records shall be kept for a minimum of two years and available for review upon request.
8. Re-entry guidelines, harvest intervals or other application guidelines must be observed.

**VII Worker Hygiene and Good Manufacturing Practices**

1. All employees shall be trained in personal hygiene and food-safety requirements. Training documents shall be available upon request.
2. Jewelry is not permitted, with the exception of a plain wedding band without stones. However, for personal-safety reasons, it is recommended that employees remove plain wedding bands during operations.
3. Fingernail polish and artificial fingernails are not permitted.
4. Employees shall begin work with clean outerwear.
5. Employees entering the field shall have head facial hair properly covered. Beards and mustaches that extend below the lip line require hair restraints. There is one exception – a simple mustache in which hair does not extend below the upper lip line or curve below the lip line.
6. Personal items, such as pencils, pens and smoking materials, are not allowed in shirt pockets.
7. Eating, drinking, chewing gum and/or smoking are not permitted in the production fields. These activities -- except smoking -- are allowed, but only in designated areas outside the production field with proper disposal containers for use prior to returning to work.
8. Toilet facilities shall be easily accessible (a quarter-mile or closer), properly stocked and maintained. Facilities must have hand-washing stations and employees must wash hands before starting work and when returning to work.
9. Appropriate barriers or physical containment shall be implemented when cleaning or servicing field bathrooms to prevent crop or field contamination in the event of an accidental leakage or spill.
10. Urinating and/or defecating in or around the fields is not allowed.
11. Drinking stations shall be accessible and stocked with individual cups and potable water.
12. Drinking and hand-washing water shall meet all microbiological standards for potable water quality (<2 MPN/100 ml for coliform bacteria).
13. Trash receptacles must be provided, maintained and used.
14. Sickness, cuts and other ailments such as diarrhea and other communicable diseases shall be reported to the foreman so that appropriate measures can be taken to prevent contamination of crops or fellow employees.
15. Any worker/employee exhibiting illness or other potential threats to crops before or during operations shall be dismissed from the field operations and not allowed to return to work until the condition is no longer present.
16. Rubber gloves, blue metallic Band-Aids or other corrective measures shall be used for minor cuts and/or open sores.
17. All product exposed to unsanitary conditions shall be properly disposed of immediately.
18. Spitting is not allowed in the fields.