**LETTUCE/LEAFY GREENS COMMODITY SPECIFIC GUIDANCE**

**PRODUCTION & HARVEST OPERATIONS**

# General Requirements

In addition to the area-specific requirements discussed in latter sections, there are several general requirements that are part of an effective best practices program. These requirements are outlined below.

The Best Practices Are:

* A written Leafy Greens Compliance Plan shall be prepared that specifically addresses the Best Practices listed in this document. This plan shall address at least for the following areas: water, soil amendments, environmental factors, work practices, and field sanitation.
* Shippers shall have an up-to-date producers list with contact and location information on file.
* The shipper shall comply with the requirements of The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (farms are exempt from the Act) including those requirements for recordkeeping (traceability) and registration...
* Each producer and shipper shall designate an individual responsible for their operation’s food safety program. Twenty-four-hour contact information shall be available for this individual in case of food safety emergencies.

# Environmental Assessments

This section addresses assessments that shall be completed and documented prior to the first seasonal planting, within one week prior to harvesting and during harvest operations. These environmental assessments are intended to identify any issues related to the produce field, adjacent and nearby land uses, and/or animal hazards that may present a risk to the production block or crop (see Table 6 and Table 0).

The Best Practices Are:

* Pre‐harvest product testing is required when risk assessments deem it is necessary.
* Prior to the first seasonal planting and within one week prior to harvest, perform and document an environmental risk assessment of the production field and surrounding area. Focus these assessments on evaluating the production field for possible animal hazards or other sources of human pathogens of concern, assessing adjacent and nearby land uses for possible sources that might contaminate the production field, and evaluating nearby water sources for the potential of past or present flooding.
	+ **Assessment of Produce Field**

Evaluate all produce fields for evidence of animal hazards and/or feces. If any evidence is found, follow procedures identified in the “Production Locations - Encroachment by Animals and Urban Settings.”

Evaluate potential environmental sources of contaminants near production locations after a change in weather conditions or weather events that could impact the original risk assessment of the field or block and follow procedures identified in the “Production Locations - Climatic Conditions and Environment” section below.

* + **Assessment of Adjacent and Nearby** **Land Use**

Conduct and document a detailed risk assessment that evaluates risk level of all land and water sources adjacent and nearby to all production fields for possible sources of human pathogen of concern. These sources include, but are not limited to manure storage, compost storage and operation, biosolids, CAFO’s, AFO’s, grazing lands, domestic animals/hobby farms, water storage and conveyance, habitat/riparian area, sanitary facilities, septic systems, and non-leafy green crops (see Table 0 and Appendix H: Risk Assessment Tool-Reserved) for further detail). If any possible sources on adjacent or nearby lands that might result in produce contamination are present, consult with the metrics and refer to Appendix Z.

At any time prior to planting, during the growing of the crop, or during the period when harvest operations are occurring, if on farm or adjacent and nearby land activities result in a possible higher risk situation, conduct additional risk assessments and perform additional mitigations as necessary.

* **Assessment of CAFOs**

Conduct and document a rigorous pre-season environmental assessment of any Concentrated Animal Feeding Operation that may impact your operation. Include, to the degree possible, communication with the CAFO operator and/or third-party operator to document Best Management Practices (BMPs) within the facility, examination of the CAFO for locations and risk associated with composting, storage, sick pens, dead piles and other internal operations, examination of traffic routes associated with the CAFO and examine settling and manure ponds for any signs of leakage. Note if the CAFO drainage or discharge is a possible source of contamination. Record the approximate number of animals within the CAFO and the method used to determine.

Conduct and document a pre-harvest assessment that confirms no changes in pre-season conditions. Note if any discharge events that may impact your crop or operations; changes in weather condition or weather events occurred during the production period.

Water sources that are proximate to a CAFO may pose additional risk and should be closely evaluated. Refer to Appendix A: Agricultural Water System Assessment.

* + **Assessment of Historical Land Use**

To the degree practical, determine and document the historical land uses for production fields and any potential issues from these uses that might impact food safety (i.e., hazardous waste sites, landfills, etc.).

* + **Assessment of Flooding**

Evaluate all produce fields for evidence of flooding. If any evidence is found, follow procedures identified in the “Flooding” section below.

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| TABLE 0. Crop Land and Water Source Adjacent and Nearby Land Use |
| **Adjacent and Nearby Land Uses** | **Current Metric** | **Considerations for Risk Analysis** |
| **Risk Factors** | **Mitigation Factors** |
| **Animal operations** | **AFOs** | 30 feet (no composting) 400 feet (with composting) | Distance, topography, water runoff, number of animal units, wind direction, history | Pre-harvest pathogen testing, water treatment, vegetative buffers, barriers, increased buffers, animal and insect monitoring |
| **CAFO** | 1200 feet  | Distance, topography, water runoff, number of animal units, wind direction, history | Pre-harvest pathogen testing, water treatment, vegetative buffers, barriers, increased buffers, animal and insect monitoring |
| **Grazing Lands** | 30 feet | Distance, topography, water runoff, number of animal units, wind direction, history | Pre-harvest pathogen testing, water treatment, vegetative buffers, barriers, increased buffers, animal and insect monitoring |
| **Domestic Animals/Hobby Farms**  | 30 feet | Distance, topography, water runoff, number of animal units, wind direction, history | Pre-harvest pathogen testing, water treatment, vegetative buffers, barriers, increased buffers, animal and insect monitoring |
| **Compost/Soil Amendment Operations** | **Compost Operations** (Manure or Animal Products) | 400 feet | Distance, Timing of production, Production Process, Volume of production, Topography, Water runoff, Wind direction, History | Preventive barriers, Pre-harvest pathogen testing, Knowledge of process, Water Treatment |
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| **Non-synthetic Soil Amendment Pile** (containing manure or animal products)  | 400 feet | Distance, Timing of production, Production Process, Volume of production, Topography, Water runoff, Wind direction, History | Preventive barriers, Pre-harvest pathogen testing, Knowledge of process, Water Treatment |
|
| **Non-synthetic Soil Amendment Pile** (not containing manure or animal products)  | 400 feet | Distance, Timing of production, Production Process, Volume of production, Topography, Water runoff, Wind direction, History | Preventive barriers, Pre-harvest pathogen testing, Knowledge of process |
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| **Biosolids** | 400 Feet | Distance, Timing of production, Production Process, Volume of production, Topography, Water runoff, Wind direction, History | Preventive barriers, Pre-harvest pathogen testing, Knowledge of process |
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| TABLE 0. Crop Land and Water Source Adjacent and Nearby Land Use |
| **Non-leafy green crops**  | **Cannabis/hemp, cover crops, dates, flowers, grapes, other** | The approximate safe distance depends on risk and mitigation factors  | History of risk identification, Distance from adjacent operation, Topography, Crop production timeline, Foreign object, Animal/Bird attractant, Grazing animals, Harvest practices. | Physical barriers, Pre-harvest pathogen testing, Increased monitoring, Knowledge of process |
| **Water Source and Systems** | **Well Head distance from Untreated Manure** | 200 feet | History of risk identification, Distance from adjacent operation, Topography, Opportunity for water run off through or from untreated manure, or composting operations, Soil leaching | Adjacent operation management practices, Increased monitoring, Preventive barriers, Type of system (Closed vs Open), Water treatment  |
| **Surface Water Distance from Untreated Manure**  | 100-300 feet | History of risk identification, Distance from adjacent operation, Topography, Opportunity for water run off through or from untreated manure or composting operations, Flooding, Soil Leaching  | Adjacent operation management practices, Increased monitoring, Preventive Barriers, Water Treatment |
| **Water Storage and Conveyance systems** | 30-300 feet | History of risk identification, Distance from adjacent operation of concern, Topography, Flooding, Animal Intrusion, Trash and debris, Excessive vegetation, Integrity of water storage, Conveyance and distribution History of risk identification, Distance from adjacent operation of concern, Topography, Flooding, Animal Intrusion, Trash and debris, Excessive vegetation, Integrity of water storage, Conveyance and distribution system  | Adjacent operation management practices, Increased monitoring, Type of System (Closed vs Open), Water Treatment |
| **Urban Settings** | **Homes or other building with a septic leach field** | 30 feet | History of risk identification, Distance, Topography, Leach field status (active vs inactive), Runoff | Preventive barriers, Knowledge of septic field |
| **Other Environmental Considerations** | **Habitat/Riparian Area** | The approximate safe distance depends on risk and mitigation factors.  | History of risk identification, Distance from potential risk, Topography, Potential for animal intrusion, Physical hazards | Preventive barriers, Increased Monitoring |

Producers should check for local, state and federal laws and regulations that protect riparian habitat, restrict removal of vegetation or habitat, or restrict construction of wildlife deterrent fences in riparian areas or wildlife corridors. Producers may want to contact the relevant agencies (e.g., the Regional Water Quality Control Board and state and federal fish and wildlife agencies) to confirm the details of these requirements.