

# **The Mushroom Farm Food Safety and Security Self-Assessment**

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Within the last several years, several highly publicized incidences of foodborne illness have been attributed to consumption of fresh produce. These events, combined with the recent recognition that our food supply may be vulnerable to criminal or terroristic acts, have fueled intense public interest in food safety and security. Wholesale buyers have responded to these concerns by requiring growers and packers of fresh produce, including mushrooms, to submit to food safety audits that verify compliance with established food safety and sanitation standards.

A new document, “Mushroom Farm Food Safety and Security Self-Assessment” is available to help mushroom growers become aware of potential food safety hazards in their operations. The self-assessment is presented as typical questions that a food safety auditor might ask about your facilities, your workers, your records, and your policies. Although food safety standards vary with each customer, the questions are designed to help you understand your customers’ expectations and to help you to prepare for a successful food safety audit.

Growers are encouraged to walk through their farm with the self-assessment in hand and answer the questions in each of the categories. By accurately answering each of the questions, growers can get an idea of those areas that are especially in need of attention. Meeting customer requirements for food safety may seem overwhelming at first glance. Therefore, to assist growers in setting priorities, “Risk Levels” are assigned to each question. “Risk Level 1” questions refer to critical practices or policies that, if not followed, present a high risk for a food safety hazard to occur or will likely cause you to fail an audit. Direct contamination of mushrooms or food contact surfaces can occur if

these standards are not followed, and immediate attention is required if a deficiency is found. “Risk Level 2” questions address conditions adjacent to, but not in direct contact with, areas where mushrooms are grown or situations where cross-contamination is a significant risk. Deficiencies in these areas usually can be addressed after Risk Level 1 areas are under control. “Risk Level 3” questions represent the lowest level of risk for contamination. However, deficiencies will require correction in order to convince your customers that your mushrooms are grown under the safest possible conditions.

Below are some of the questions contained in the booklet. Questions are categorized under several key food safety focus areas that are common to all segments of the fresh produce industry. Growers and mushroom buyers can obtain a copy of the complete list of questions by contacting Dr. Luke F. LaBorde at the Penn State Department of Food Science. You can also download a copy from the Internet by visiting the Penn State Mushroom Food Safety Web Site at <http://foodsafety.cas.psu.edu/mush/foodsafety.htm>. The site is a one-stop reference point for obtaining food safety information resources and announcements on upcoming food safety workshops.

#### FOOD SAFETY PROGRAM DEVELOPMENT

- Does your farm have a written food safety plan in place?
- Has your farm designated a food safety team and team leader with responsibility for development and implementation of the food safety plan?
- Are written records kept for all cleaning, sanitizing, maintenance, pest control, and other activities related to the food safety plan?

#### SAFETY OF WATER

- Is water used in growing areas regularly tested for microbial and chemical contaminants?
- Are wells regularly inspected and maintained to prevent contamination from occurring?
- Are all faucets, fixtures, and hoses in production areas fitted with backflow-prevention devices?

## WORKER HYGIENE AND PRACTICES TO PREVENT CONTAMINATION OF MUSHROOMS

- Are harvesters trained to wash their hands each time they use the toilet, after any absence from their workstation for breaks or lunch, or after handling soiled materials?
- Are harvesters with diarrheal illness, open wounds, or skin infections prohibited from handling mushrooms?
- Do harvesters wear appropriate hair restraints and clothing that prevents contamination of exposed mushrooms?

## PRODUCT SECURITY

- Are the grounds reasonably secure from unauthorized entry through fencing, lighting, or regular monitoring?
- Are signs that require visitors to report to the office before entering farm areas posted at entrances?
- Are supervisors alert to any suspicious activities, potential sabotage to equipment or products, or indications of tampering?

## HAND WASHING AND TOILET FACILITIES

- Are toilet facilities well ventilated, have self-closing doors, have clean, running warm water, and continuously stocked with toilet paper, hand soap, disposable paper towels, and trash receptacles?
- Are toilets cleaned and sanitized each day?
- Does each toilet facility have a sign that reminds employees to wash their hands before returning to work?

## RECEIVING AND STORAGE OF RAW MATERIALS AND COMPOST

### *Compost, casing, and other raw materials*

- Do suppliers of composting materials provide documentation of the type of material purchased, its origin, and date of purchase?
- Are phase II, casing preparation, and storage areas adequately separated from phase I receiving, preparation, and storage areas so that cross-contamination cannot occur?
- Are harvest containers, packaging materials, spawn, and other supplies adequately separated from phase I receiving, preparation, and storage areas so that cross-contamination cannot occur?

### *Equipment and supplies*

- Are equipment and supplies that are used to grow mushrooms purchased from reliable suppliers with a record of producing high-quality products?
- Are forklifts, cleaning equipment, tools, and other mechanical equipment used in composting areas stored in designated areas away from growing areas?
- Are toxic compounds stored in a clean, dry, organized, and secure area physically separate from production areas?

### *Harvesting containers and packaging materials*

- Are food contact containers stored indoors on pallets and protected from condensate, floor splash, loose wall or ceiling materials, machinery and equipment parts, and other materials that may contaminate the product?

## FIELD SANITATION

### *Layout and maintenance of grounds and building exteriors*

- Are the grounds regularly cleaned and maintained so they are free of tall grass and weeds, litter, debris, and trash?
- Are the grounds well drained so that standing water cannot accumulate?
- Are building foundations, walls, and roofs in good repair with no sign of entry points for pests or water?

### *Condition and cleanliness of breezeways and growing rooms*

- Are building interiors clean and uncluttered with adequate space for movement of employees and equipment?
- Are waste materials stored in labeled, covered containers and removed daily?
- Are light fixtures and pest lights shielded to prevent glass contamination?

### *Equipment, tools, containers, and packaging materials*

- Are harvest containers kept in good repair so that they are free of splinters or shards and discarded if they cannot be repaired?
- Are harvest containers cleaned and sanitized before each use?
- Are control measures in place that prevent tools and equipment used in composting areas from being used in mushroom growing and storage areas?

## FIELD PACKING AND PROTECTION OF HARVESTED MUSHROOMS

- Are harvest containers (baskets, lugs, trays, and boxes) prevented from contacting the floor during field packing?
- Are containers of mushrooms protected from condensate, floor splash, loose wall or ceiling materials, machinery and equipment parts, and other materials that may fall into the product?
- Are trucks inspected for cleanliness, odors, and obvious dirt or debris before loading?

## CLEANING AND SANITIZING OF FOOD CONTACT AND INDIRECT CONTACT SURFACES

- Are cleaning and sanitizing activities documented including the date, time, chemical used, and name of applicator?
- Are the exterior grounds regularly cleaned including trash, storage, and receiving and shipping areas?
- Are building interiors regularly cleaned and/or sanitized as necessary including floors, walls, trash areas, fixtures, and equipment?

## PROPER LABELING, USE, AND STORAGE OF TOXIC CHEMICALS

- Are original containers of toxic chemicals clearly labeled with the name of the compound, the manufacturer's name and address, and instructions for use?

- Are toxic compounds stored in clean, well-organized, secure, and dry areas away from production areas?
- Are MSDS sheets kept for all chemicals, and are they in a language that is readily understood by all employees who wish to read them?

#### PEST CONTROL

- Is there a documented pest-control program in place that controls insects, rodents, birds, and other pests?
- Are tamper-resistant and labeled bait stations placed along outside walls of growing and storage buildings?
- Are traps inside buildings placed sufficiently far away from exposed mushrooms so that they cannot become a source of contamination?

#### TRACE-BACK AND PRODUCT RECALL

- Is there a program in place for tracking and responding to customer complaints or product recalls?
- Is each lot of mushrooms leaving the farm tagged with the name of the farm, product, individual or department handling the product, and a lot number traceable to location and date of harvest?

#### EQUIPMENT MAINTENANCE AND CALIBRATION

- Is an equipment-maintenance program in place that ensures that all equipment is in proper working order?
- Are filters in air conditioning, ventilation, and air filtration units regularly cleaned and replaced when necessary?
- Are temperature probes, supporting hardware, and software used to monitor phase I and II temperatures maintained and calibrated on a regular basis?

#### EMPLOYEE TRAINING

- Has a training program been developed that provides food safety training to all new employees and regular refresher sessions for all employees?
- Do supervisors regularly remind workers of the importance of good personal hygiene including the proper way to wash hands?