SAMPLE Standard Operating Procedures (SOPs):

Look at each standard
Change the verb tense from “shall” to “is” – that’s the WHAT
State HOW you are going to do WHAT it “is”
(Hint – read the guidelines)
Possible Options:
   State WHEN you’re going to do it
   State WHO is going to do it
   List RECORDS that will document that you did it

SOP #1 – Food Safety Program Development

Goal: A systematic and documented food safety plan that monitors and verifies compliance with safe mushroom growing practices.

Control Measures: ABC Mushroom Farm has a food safety plan that identifies and documents the potential hazards, hazard control measures and monitoring and verification procedures followed at our farm.

Records:
   • Information outlining and documenting our food safety plan is included in binders in our office.

SOP #2 – Safety of Water
(Well or municipal source)

Goal: Water that contacts mushrooms or food-contact surfaces is safe to use and potable drinking water is available for employees.

Control Measures (for wells): To insure that the water quality at ABC Mushroom Farm is adequate for irrigation purposes and chemical applications, it is tested once a year by a certified laboratory for microbial and chemical contaminants. If water for irrigation does not meet US EPA microbial standards for drinking water, it should be treated and retested. Backflow devices are installed on lines where chemical applications are made. Hoses should be properly stored. If contaminated water has contacted mushrooms, the level of risk to the consumer is determined and the product discarded or sent for processing. Potable drinking water is available for employees. Wells are monitored to make sure casing are secured and well maintained.

Records:
Certified Lab Certificate of Analysis
Water source and testing frequency form
Daily checklist
Verification checklist

**Control Measures (for municipal source):** All water at ABC Mushroom Farm is supplied by the Local County Water System which insures that it meets U.S. EPA microbial standards for drinking water. Backflow devices are installed on lines where chemical applications are made. If contaminated water has contacted mushrooms, the level of risk to the consumer is determined and the product discarded or sent for processing. If contaminated water has contacted mushrooms, the level of risk to the consumer is determined and the product is discarded or sent for processing. Potable drinking water is available for employees.

**Records:**
Local County Water Authority Certificate of Analysis
Water source and testing frequency form
Daily checklist
Verification checklist

**SOP #3 – Worker Hygiene & Practices to Prevent Contamination of Mushrooms**

**Goal:** Prevention of employees from becoming a source of contamination

**Control Measures:** All employees of ABC Mushroom Farm must follow good personal hygiene practices, which include having an overall clean appearance, clean clothes, and no open toed shoes, sandals and sleeveless shirts in harvesting areas. Employees in growing and handling areas must wash their hands before beginning work, each time after using the toilet, before returning to work after a break or lunch and after any time their hands may become soiled.

Employees in growing and handling areas must wear hair restraints. (IF YOU HAVE A PARTICULAR METHOD – YOU CAN STATE IT)

Harvesters with signs of illness or infection that can be transmitted through foods are not permitted to handle mushrooms.

Jewelry and other personal items that can fall into the product, food and beverages, chewing gum and tobacco are not permitted in growing and handling areas.

Workers must remain in their work area during their shift unless they have received permission from their supervisor.
ABC Mushroom Farm has a Bodily Fluids Policy outlining handling and disposition of mushrooms or food contact surfaces that have come in contact with blood and other bodily fluids.

All of the required employee practices listed above are taught in the food safety training that each employee receives.

Records:
- Worker training log
- Bodily fluid contamination policy
- Daily Checklist
- Verification Checklist

**SOP #4 – Hand Washing & Toilet Facilities**

**Goal:** Toilet and hand washing facilities that are adequate in number and are properly maintained

**Control Measures:** ABC Mushroom Farm has at least 1 toilet facility per 20 employees, within ¼ mile of their work site. The toilets are well-ventilated with self closing doors and stocked with toilet paper. Hand washing stations are clean with warm running water, stocked with disposable paper towels and hand soap and trash receptacles. Signs are posted at each hand washing station that instructs employees on the proper ways to wash their hands. Toilet and hand washing facilities are cleaned daily when in use.

Records:
- Toilet and hand washing inspection checklist
- Grower information sheet (for number of toilet facilities)
- Farm Map with locations of toilets and hand washing stations
- Sanitation service contract and service report
- Daily checklist
- Verification checklist

**SOP #5 – Product Security**

**Goal:** Prevention of intentional contamination of mushrooms

**Control Measures:** To control unauthorized individuals onto the premises of ABC Mushroom Farm, signs are posted at the main entrance requiring visitors to check in at the office, our employees carry ID cards, we have outside lighting around our doubles. Upon hiring, an I-9 is completed for each employee.
Records:
- I-9 forms
- Verification Checklist

**SOP #6 – Receiving & Storage of Materials**

**Goal:** Prevention of cross-contamination of non-substrate materials and mushrooms with unpasteurized substrate.

**Control Measures:** Raw materials and packaging materials are purchased from our approved suppliers, and we have documentation that packaging materials are approved by FDA. When Phase I compost is delivered to ABC Mushroom Farm, it is stored (fill in location). Casing ingredients are kept in their packaging until ready for use. (fill in location)

The Phase II substrate preparation at ABC Mushroom Farm is conducted according to the PSU validation process of time and temperature needed to reduce harmful pathogens to safe levels.

**Records:**
- Supplier invoices
- Substrate preparation records (cook out records)
- “Destruction of Select Human Pathogenic Bacteria in Mushroom Compost during Phase II Pasteurization” research summary
- Verification Checklist

**SOP #7 – Farm Sanitation**

**Goal:** Prevention of product contamination from buildings, grounds, equipment and food-contact containers

**Control Measures:** ABC Mushroom Farm keeps our grounds cleaned and maintained. Our buildings are maintained to prevent entry of pests and water. Our breezeways and growing rooms are kept clean and uncluttered. The interiors of our buildings are maintained to prevent physical hazards, condensate and floor splash from contaminating mushrooms. Our reusable harvest containers are kept in good repair and cleaned and sanitized before each use.

A Master Cleaning Schedule outlines these areas, and they are verified through the Verification Checklist.
We have a Glass and Brittle Plastic Policy that ensures that shatterproof materials or protective shielding are used to prevent glass contamination from windows, light fixtures, pest lights, and other items located in mushroom handling areas.

**Records:**
- Glass and Brittle Plastic Policy
- Master Cleaning Schedule
- Verification Checklist
- Daily Checklist

**SOP #8 – Field Packing and Protection of Harvested Mushrooms**

**Goal:** Harvest and post-harvest procedures that prevent contamination of mushrooms

**Control Measures:** The undersides of containers are prevented from contacting the floor by placing them on a dedicated and clearly marked or color coded inverted container. Filled containers are moved out of growing rooms by carrying them and/or placing them on pallets. Mushrooms that have contacted the floor are considered contaminated and are discarded. All workers are trained in this practice.

If condensate, physical hazards and/or floor splash are a threat to containers of mushrooms in staging areas, then exposed containers of mushrooms are covered with plastic or paper sheets if necessary to prevent contamination. Maintenance employees are instructed to remove all tools, loose nuts and bolts, and other physical hazards when a job is completed.

Mushrooms are loaded onto clean and secure trucks. Our trucks are not used to transport animals, animal products, or other potentially contaminated materials. The truck is inspected daily for cleanliness, odors, and dirt or debris before loading. Workers involved in the loading of mushrooms for shipping practice the same good hygiene and sanitation practices as harvesters. Product containers are secured during transit from farm to packing location.

**RECORDS:**
- Worker training log
- Truck inspection form
- Daily checklist
- Verification checklist
SOP #9 – Cleaning and Sanitizing Food Contact Surfaces and Critical Non-food Contact Surfaces

**Goal:** A documented and effective program for cleaning and sanitizing food contact surfaces and critical non-food contact surfaces

**Control Measures:** All cleaners, sanitizers and disinfectants are used according to label directions, including those for use on food contact surfaces, and are applied so that contamination of nearby mushrooms is prevented. Knives and other harvesting equipment that contacts mushrooms are cleaned and sanitized on a scheduled basis as outlined in the Master Cleaning Schedule.

The Master Cleaning Schedule lists items and areas to be cleaned and/or sanitized. Sanitation Standard Operating Procedures are developed that outline and document the cleaning procedures, equipment and chemicals used for items and areas listed in the Master Cleaning Schedule.

**Records:**
Master Cleaning Schedule
Sanitation Standard Operating Procedure
Worker Training Log
Daily checklist
Verification checklist

SOP #10 – Proper Labeling, Use, and Storage of Potentially Hazardous Chemicals

**Goal:** Prevention of contamination from potentially hazardous chemicals

**Control Measures:** Original chemical containers are labeled with the name of chemical, the manufacturer’s name and address and instructions for use. Secondary or working containers are marked with the name of the chemical and instructions for use. Food products are not put in an empty chemical container and chemicals are not put in an empty food container.

An up to date inventory of hazardous chemicals is maintained. A notebook containing all Material Safety Data Sheet (MSDS) and chemical labels is available to all employees at all times.

Employees who apply chemicals receive safety training. Employees working with chemicals are required to watch the Penn State video on potential hazards before using any chemical or pesticide. Chemical compounds are used according to label directions.
All chemicals are stored in a designated secure room which is dry, clean, and well organized.

Records:
- List of potentially hazardous chemicals
- Material safety data sheets (MSDS)
- Worker protection standard (WPS) Penn State video training log
- Chemical labels
- Verification checklist

**SOP #11 – Pest Control**

**Goal:** Exclusion of pests using safe and effective procedures

**Control Measures:** ABC Mushroom Farm follows a pest control program that minimizes pest entry points and harborage sites by these methods:
- Use of EPA-approved pesticides according to state and federal standards,
- Poison bait stations are used only outside of buildings, are tamper-resistant, labeled and inspected regularly,
- Live traps, glue boards or mechanical traps are spaced no more than 30 feet apart along the inside walls of buildings and both sides of an entrance, excluding breezeways and growing rooms,
- A pest control log is maintained.

Records:
- Pest Control contract (if outside firm is used)
- Pest control report (in house or outside firm)
- Facilities map showing location of pest control devices
- Daily checklist
- Verification checklist

**SOP #12 – Trace-back and Produce Recall**

**Goal:** The ability to track mushrooms from production to product shipping

**Control Measures:** All mushrooms harvested at ABC Mushroom Farm are tracked using a system to identify the product from (insert double/house/etc depending on how you designate the method in which it was harvested) to the purchaser. A ticket is filled out by an ABC employee and placed on each pallet of product that indicates (insert what information you provide and what method you and your buyer use to track shipments).

A mock recall is performed once per year:
• A mushroom box or a mushroom ticket from a customer will be retrieved.
• Identify the date of which the product was delivered to the packing facility, the harvesting date and the house where it has been picked.
• Document the result of the mock recall in the annual mock recall report.

It is our policy that the food safety team will handle all recall/traceback requests and communications.

Records:
Copies of shipping records
Sample pallet ticket
Mock recall report

SOP #13 – Equipment Maintenance and Calibration

Goal: Prevention of microbial, chemical, and physical hazards from occurring as a result of improperly maintained equipment

Control Measures: Equipment, temperature probes, supporting hardware and software used to monitor Phase I and II time and temperatures are maintained and calibrated on a regular basis according to the equipment maintenance schedule to assure that all equipment is in proper working order and does not contribute to product contamination. Cleaning and maintenance checks are scheduled regularly on air handling, cooling, and other equipment used in mushroom production areas so that they function properly and do not contribute to contamination of mushrooms. Only food grade lubricants are used on food contact surfaces and machinery. Equipment, tools and used parts are removed after servicing an area.

Records:
• Equipment maintenance schedule
• Master calibration schedule
• Calibration records
• Verification checklist

SOP #14 – Employee Training

Goal: Employees who understand the principles of food safety and sanitation at a level appropriate to their job function

Control Measures: Each new worker is trained upon hiring on food safety using the content of the Mushroom Industry Food Safety Training Kit (FSTK). An annual refresher
food safety training session is held. All employees are required to sign a training log which is kept in the food safety binder.

Records:
- Food Safety Training Log
- Mushroom Industry Food Safety Training Kit