



Protected Harvest Certification Standards:
Agaricus sp. Mushroom Production Standards

Line	Standard	Points NQ=non-qualifier practice	W=whole operation practice R=room practice
1.	General Operations		
1.1	Knowledge and educational activities (select all that apply)		
a.	Operation has membership in at least two organizations that provide information or support for IPM or water quality protection practices.	3	W
b.	At least two different training sessions related to IPM or BMPs offered by university, government, or non-profit organizations have been attended by one or more staff members within the last 12 months.	3	W
c.	Internet-based sustainable agriculture resources from local sources are used.	2	W
d.	Staff has completed the Penn State/American Mushroom Institute Mushroom Farm Food Safety and Security Self-assessment or a SYSCO self audit within the last 12 months, or operation has had a third party “good agricultural practices” audit in the last 12 months.	2	W
e.	None of the above.	0	
f.	Bonus: operation has experimented in the past 12 months with at least one new production or pest management technique(s).	Bonus: 3	W
1.2	Reuse/Recycling of materials (select one)		
a.	Operation has a solid waste-recycling program in place (other than compost production) for production-related materials.	3	W
b.	No solid waste recycling is done.	0	

1.3	Employee opportunities (select all that apply). If grower has fewer than 30 employees, remove this section from consideration.		
a.	Operation has written employee grievance procedure or dispute resolution policy.	2	W
b.	Operation provides education leave or financial support for education to year-round employees with greater than one year of service during the last 2 years.	2	W
c.	Operation has sent at least one management representative to a worker safety training or information session in the past 12 months.	2	W
d.	Operation has written award/incentives program for employees.	2	W
e.	Operation has bilingual supervisory/management staff (if English is not the primary language of work crews); or operation provides language training (in the primary language of work crews) for supervisory/management staff.	2	W
f.	None of the above.	0	

Possible Bonus Points for PH Section One =

3

Total Number of Grower Points Possible for PH Section One =

23

2.0	Soil and water management		
2.1	Pesticide spill containment planning (select one)		
a.	A spill containment plan has been developed and addresses all of the following issues: 1. Who to contact if there is a spill, with phone numbers 2. How to contain a spill 3. How to clean up a spill 4. How to prevent spills (specific to the operation) 5. Location of critical or sensitive areas on your property. 6. How often the plan will be updated	5	W
b.	A spill containment plan has been developed, but addresses only items 1-3, above.	2	W
c.	A spill containment plan has not been written.	0	
2.2	Leachate control [Growers who purchase compost instead of making it must provide verification of practices from the compost facility]		
2.2.1	Wharf design and maintenance (select all that apply)		
a.	All composting is done on a wharf with an impervious surface and leachate collection system.	3	W
b.	All nutrient source raw materials for compost are stored on an impervious surface with a leachate collection system.	3	W
c.	Wharf has been inspected and cracks repaired within the last 12 months.	3	W
d.	None of the above.	NQ	

2.2.2	Wastewater management (select all that apply)		
a.	Leachate from wharf is collected and reused in the composting process.	2	W
b.	Wastewater collection system has been designed by an environmental engineer to contain the estimated runoff from a 25-year, 24-hour storm event.	4	W
c.	Drainage from production rooms is collected and reused in Phase I.	4	W
d.	None of the above.	0	

2.2.3	Rick moisture management (select one)		
a.	Compost ricks are tested for moisture content using moisture testing equipment and test results are used to adjust the amount of water applied to the rick.	3	W
b.	Compost ricks are tested for moisture content by hand using grower experience ("squeeze and feel" method), and test results are used to adjust the amount of water applied to the rick.	2	W
c.	None of the above.	0	

2.3	Mushroom compost (MC) management		
2.3.1	MC fate (select one)		
a.	All MC is removed from operation without composting or curing.	4	W
b.	At least some MC is actively composted/cured on site with turning or aeration at least once every 15 days.	4	W
c.	At least some MC is actively composted/cured on site with turning or aeration at least once every 31 days.	3	W
d.	MC is passively composted/cured on site with no turning or aeration (or is turned less frequently than once every 31 days).	1	W
e.	None of the above.	0	

2.3.2	Curing (select all that apply)		
a.	Berms or other diversion structures divert surface water runoff away from MC piles/ricks.	3	W
b.	Runoff that has contacted MC is collected, stored, and reused in the composting process.	3	W
c.	Operation does not cure MC.	6	W
d.	None of the above.	NQ	

2.4	Stormwater management (select all that apply)		
a.	Operation has a storm management plan that details operational procedures to prepare for major storm events including: <ol style="list-style-type: none"> 1. Designation of staff member or team responsible for each task in plan 2. Seasonal preparations 3. Assignment of duties prior to predicted storm event 4. Assignment of duties during storm event 5. Annual review/revision procedure for plan 	4	W
b.	Buildings located near or uphill from composting sites have roofs that slope away from composting sites and organic materials, or have downspouts or other structures that divert storm water away from composting sites and organic materials.	3	W
c.	Neither of the above.	0	

Possible Bonus points for PH Section Two =

0

Total Number of Grower Points Possible for PH Section Two =

44

3.0	Air Quality Management		
3.1	Odor management plan (select one)		
a.	Operation has a written plan for odor management that addresses the following subject areas: <ol style="list-style-type: none"> 1. Proper moisture content and management in composting. 2. Management of compost ingredients for odor reduction. 3. Compost turning frequency. 4. Compost temperature management. 5. Training procedures for new employees responsible for activities related to the plan. 	5	W
b.	Operation does not have an odor management plan addressing the above areas.	NQ	W
c.	Bonus: Odor management plan also addresses weather conditions that impact odor production and how to mitigate them.	Bonus: 2	W

3.2	Other odor management activities (select all that apply)		
a.	Wastewater storage tanks/lagoons are aerated to reduce odors.	5	W
b.	Phase I composting takes place in an aerated bunker or wharf.	5	W
c.	Wastewater collection system(s) has sediment screens or traps to remove sediments from the system prior to tank or impoundment.	3	W
d.	Phase I composting takes place under a roof.	3	W
e.	Wharf is sloped and maintained to prevent standing water.	2	W
f.	None of the above.	NQ	W
g.	Bonus points: exhaust air from Phases I or II composting is passed through a biofilter or scrubber prior to venting to the atmosphere.	Bonus: 5	W

3.3	Dust management (select one)		
a.	All roads and driveways have 10 or fewer vehicle trips per day.	4	W
b.	All roads and driveways with greater than 50 vehicle trips per day are paved, and all roads and driveways with between 11 and 49 vehicle trips per day are paved, graveled, or covered in another dust-suppressing aggregate material.	4	W
c.	All roads and driveways with greater than 10 vehicle trips per day are covered in gravel or another dust-suppressing aggregate material.	3	W
d.	All roads and driveways with greater than 10 vehicle trips per day are oiled or sprayed with a dust-suppression salt or compound.	2	W
e.	All roads and driveways with greater than 10 vehicle trips per day are watered during periods of heavy traffic in dry weather.	1	W
f.	Operation has roads or driveways with greater than 10 vehicle trips per day that are not treated as above.	0	W

Possible Bonus points for PH Section Three = 7
Total Number of Grower Points Possible for PH Section Three = 27

4.0	Integrated Pest Management (IPM)		
4.1	Scouting		
4.1.1	Scouting staff (select one)		
a.	Scouting is done by a designated scout(s) with formal training in IPM.	3	W
b.	Scouting is done by a full-time, designated scout(s), but without formal IPM training.	2	W
c.	Scouting is not done by staff as stated above.	0	W

4.1.2	Scouting frequency (select all that apply)		
a.	All growing rooms are inspected for diseases at least weekly after casing.	3	R
b.	Growing rooms are inspected for diseases less than weekly after casing.	NQ	R

4.1.3	Integrated pest management training for production staff (select all that apply)		
a.	Production and harvesting staff are specifically trained to identify and mark areas of infestation or infection for treatment.	3	W
b.	Not as above.	0	

4.1.4	Fly monitoring (select one)		
a.	Fly populations are monitored daily using a monitoring device after spawning.	3	W
b.	Fly populations are monitored at least twice weekly using a monitoring device after spawning.	1	W
c.	Fly populations are not monitored at least twice weekly after spawning.	0	W

4.2	Scouting Records		
a.	Hand written or electronic scouting records are maintained for at least six months.	3	R
b.	Scouting records are not written or recorded electronically and kept as above.	NQ	R
c.	Bonus: scouting records include maps of pests or disease outbreaks within production rooms.	Bonus: 3	R

4.3	Phase I Composting (select one)		
a.	Phase I composting increases core temperature of compost to between 150F-170F (70C-80C).	1	W
b.	Phase I composting does not raise core temperature of compost to between 150F-170F (70C-80C).	NQ	W

4.4	Phase II Composting (select one)		
a.	Phase II pasteurization takes place in houses containing beds; the average compost and air temperatures are held at a minimum of 140F (60C) for at least 1.5 hours.	2	W
b.	Phase II pasteurization takes place in an aerated tunnel and compost temperature is held at a minimum of 136F (58C) for at least 8 hours.	2	W
c.	Phase II pasteurization is not done as above.	NQ	W

4.5	Steam-off/post-crop sanitation (select all that apply)		
a.	The crop is terminated by pasteurizing the production room, at an air temperature of at least 140F (60C) for at least 12 hours.	3	R
b.	After removal of the compost, the empty beds/trays are pasteurized. Pasteurization is done at an air temperature of at least 140F (60C) for at least 3 hours.	2	R
c.	Sanitizers are used to wash floors and walls of production rooms between crops.	1	R
d.	Not as above.	0	

4.6	Exclusion and other cultural controls (select all that apply)		
a.	Stump and cull material is collected and disposed of away from mushroom houses.	1	W
b.	Fresh supply air used for Phase II and cropping (from spawn run on) is filtered with an ASRAE (American Society of Heating, Refrigerating, and Air-conditioning Engineers) filter with an efficiency rating of at least 85%. (3 microns).	2	W
c.	Production room floors are cleaned wet.	2	W
d.	Breezeways and hallways outside growing rooms are not used for overnight storage of materials or equipment.	2	W
e.	Equipment is designated by use or department. Equipment is sanitized before moving from less clean rooms to clean ones.	2	W
f.	Grass or weed vegetation within 30 feet of production houses is kept mowed, or there is no grass or weeds within 30 feet of production houses.	3	W
g.	Employee work duties are structured to minimize movement from dirty areas to clean areas.	2	W
h.	Harvesting baskets and hangers are washed with a sanitizer between harvests.	3	W
i.	Production rooms are inspected for cracks to the exterior, seal damage, or other pest entry points at least once every six months and after any crop failure due to pest problems.	3	R
j.	Doors are inspected to ensure good seals at least every month.	2	R
k.	None of the above.	NQ	W/R

4.7	Bonus pest management points (select one)		
a.	Bonus: Irrigation water is treated with an antimicrobial to reduce bacterial blotch.	Bonus: 2	R
b.	Bonus: A biological control agent is used as a pest or disease management/prevention tool.	Bonus: 2	R
c.	Bonus: A non-chemical method is used for reducing bacteria loads on harvesting or production equipment (eg. heat or UV-light).	Bonus: 2	W
d.	Bonus: Ozone generator(s) are used in composting or production areas.	Bonus: 2	W

4.8	Pesticide Resistance Management (select all that apply)		
a.	Pesticides are not applied prophylactically (with the exception of biological controls), but applied only in response to a pest outbreak.	4	R
b.	Insecticides are applied prophylactically, but chemistries are rotated between IRAC resistance classes, with biological controls, or with insecticide-free periods seasonally (i.e. winter) or more frequently.	3	R
c.	Applications of salt, gypsum, alcohol, or lime (non-pesticidal materials) are used to spot treat disease in beds.	2	R
d.	Bonus: At least once in the last 12 months, pest flies from the operation have been tested for efficacy or resistance to the insecticides used.	Bonus: 5	W
e.	None of the above.	0	W/R

Possible Bonus points for PH Section Four = 16
Total Number of Grower Points Possible for PH Section Four = 55

Total PH Program Bonus Points = 26
Total PH Program Number of Points = 149