

STEP-BY-STEP GUIDE TO MUSHROOM PRODUCTION

STRAW BUCKET PRODUCTION

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Summary

This document outlines basic steps for the production of oyster mushrooms on buckets of pasteurized straw.

Materials

55-gallon steel drum, food grade

Spigot

Turkey fryer base

Propane

Cereal Straw (highest quality available, not hay)

5-gallon buckets with lids, clean

Drill

3/8" drill bit

Oyster mushroom spawn

Water

Location to place buckets

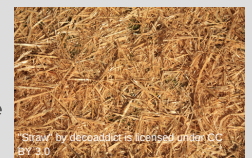


Steps

1. **BUILD A LOCATION FOR YOUR MUSHROOMS.** This is one of the most important aspects of mushroom production. Mushrooms need about 80% shade and high humidity in order to fruit. We built a small hoop house with closed ends to germinate and grow mushrooms during the warm months. However, they don't tolerate cold or dry weather, so we will need another structure with temperature and humidity controls in order to produce year-round.

2. **DRILL HOLES NICELY SPACED IN 5-GALLON BUCKETS.** The number of buckets should be enough to house the straw that will be inoculated with mushroom spawn. In each bucket, drill about 10 holes, spaced approximately 6 inches apart and staggered around the center section starting about 3-inches below the top of the bucket. This is where the mushroom fruit will emerge.

3. **CUT STRAW INTO 1 to 3-INCH SECTIONS.** Using a lawn mower or blender, cut straw into smaller 1- to 3-inch sections. Mushroom mycelium will colonize smaller sections of straw faster and straw will be easier to manage.



4. **ATTACH METAL SPIGOT TO STEEL DRUM AND SEAL.** In order to easily drain water and move drum during production, drill a hole toward the bottom of the steel drum. Attach and seal a metal spigot.



Steps (cont'd)

5. SET UP STEEL DRUM AND TURKEY FRYER FOR STRAW

PASTEURIZATION. The second most important step in mushroom production is that inoculation substrates need to be pasteurized before inoculation to reduce harmful competing organisms. This is accomplished through fermentation or heat treatment. We heat pasteurized straw by boiling it in water using a modified turkey fryer. First, place steel drum on the fryer base and fill drum with straw and then water (make sure to place the drum on the base before you add the straw and water or it will be too heavy to move). Attach the propane to the fryer base and light to begin heating the mixture. Once the temperature reaches 160 degrees, reduce the flame to hold the temperature at 160 degrees for an hour. After an hour turn off the flame and allow the straw to cool.

6. **DRAIN WATER FROM STEEL DRUM.** As water and steel drum begins to cool, carefully open spigot to drain the water from the drum.

7. **PLACE HOT STRAW ON A TARP TO COOL.** Remove the straw from the steel drum and place it on a clean table or plastic tarp to cool and further drain. The straw should be cooled to 100 degrees before inoculation and used immediately.

8. **FILL BUCKETS WITH STRAW AND MUSHROOM SPAWN.** To inoculate pasteurized straw with mushroom spawn, add a layer of straw to the base of each 5-gallon bucket followed by a layer of mushroom spawn (typically in sawdust or spent grain). Continue adding straw and spawn, alternating layers of each until the bucket is nearly filled. Place lid on each bucket.

9. **HANG OR PLACE BUCKETS IN DARK, HUMID AREA.** Make sure the inoculated straw stays moist, but not too wet. Mushrooms should begin fruiting in a few days to a week. Once they start fruiting, some diffuse light will be needed (80% shade is a good rule of thumb).

10. **HARVEST MUSHROOMS.** Harvest your mushrooms before the mushroom rim begins to turn under. To harvest, pull mushrooms from their base, near the drilled hole. Store mushrooms in a paper bag until market, best sold within a few days.



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