

Chapter 7: Harvest

Harvesting

Shiitake mushrooms should be picked when the cap is approximately 50 to 70 percent open. This occurs shortly after the veil between the cap and the stem breaks (Figure 17, page 17). At this stage, the gills are exposed but the cap edges are still rolled under the cap. Mushrooms can be harvested by pulling and slightly twisting them off the log. You can also cut them off the log flush to the bark. There should be no pieces of stem left on the growing surface and a minimal amount of wood on the base of the stem.

Generally, the base of the stem is trimmed off with a knife or scissors after the harvest, especially if the shiitake mushrooms were grown on a sawdust medium. Shiitake grown on sawdust tend to have longer stems, and sawdust clinging to the base of the stems will fall onto the gills of other mushrooms if not trimmed off. The stem length should not be greater than two-thirds of the diameter of the cap when trimmed. Log-grown shiitake may have shorter stems and might not need to be trimmed. The decision to trim or not is an individual choice to be made by each grower taking into consideration customer preference.

After picking, place the mushrooms in a container designed for maximum ventilation and, therefore, maximum cooling. Numerous plastic mushroom containers that hold 6 to 15 pounds are on the market. The designs of these baskets or boxes allow rapid cooling of the product.

Postharvest Handling

In nature, the role of the mushroom fruit body is to release its spores to complete the mushroom's life cycle. When this task is complete, the fruit body is no longer needed, and it deteriorates very

rapidly. The goal of proper postharvest handling is to slow down this deterioration as much as possible so the consumer gets the best possible quality shiitake.

The first step is accomplished by picking the mushrooms before the gills are totally exposed, all the spores dropped, and the life cycle completed. However, when the mushrooms are picked, they will continue to grow using their stored food reserves in an attempt to complete their life cycle. Picking the mushrooms too early is as bad as picking them too late. Harvesting too early will reduce your total mushroom yields, while harvesting too late will reduce quality, storage life, and value.

Refrigeration

To slow deterioration as much as possible, shiitake should be cooled immediately after picking. The respiration rate may be as much as 3.5 times higher at 50 degrees F than that at 33 degrees F. Therefore, the immediate objective after picking is to cool the product to 33 to 35 degrees F as rapidly as possible. Coolers should have sufficient cooling capacity, high airflow, and high humidity. At no time should any mushrooms be frozen because this will damage the product. After the initial cooling, maintain the cold, humid airflow. Under ideal conditions, shiitake mushrooms can be kept 1 week and look very good. After the first week, quality deteriorates quickly and as much as 1 percent moisture loss per day can occur.

Drying

Drying can preserve mushrooms for 6 months to a year. Shiitake are usually air dried to a moisture content of about 13 percent and have a 7 to 1

reduction in weight. This means that 7 pounds of shiitake mushrooms dried to 13 percent moisture will yield 1 pound of dried mushrooms.

Before drying, separate mushrooms by size and grade. Remove stems completely, as they harden when they dry. Place mushrooms on trays with gills down. Avoid allowing the mushrooms to touch each other. Mushrooms can be dried in the sun but the quality is usually lower than it is for those dried in a controlled-air dryer. Convection or forced-air dryers can be used for air-drying. Forced-air dryers use fans to move the air. The high temperatures reached during air-drying denature enzymes and kill bacteria. Home food dryers can be used to dry 2 to 3 pounds of fresh mushrooms at a time.