

S&W Report

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Growing Mushrooms on Logs – Woodlot Style By Ken Fosty

For the past 15 years, I've grown mushrooms on logs in my woodlot. Two of my favourite mushrooms are the oyster mushroom (*Pleurotus ostreatus*) and the shiitake mushroom (*Lentinula edodes*).

The trick to growing mushrooms is to successfully inoculate the fungus into the wood using spawn. After a log is inoculated, the fungus will travel through the wood cells, digesting and breaking down the wood. When the fungus is well fed and environmental conditions are right, mushrooms will be born.

Woodlot owners who have access to freshly cut firewood can try growing their own mushrooms. I'll explain the basics to get you started. You can enjoy a wonderful biological process (yummy tasting mushrooms) and have a lot of fun too.

First, I'll focus on growing oyster mushrooms. These delicious, edible mushrooms are often found on dead standing trees or on fallen logs throughout Ontario. The name "oyster" mushroom is derived from the oyster shell-like shape of the mushroom. These fragile, shell-shaped mushrooms have a flavour subtly reminiscent of autumn rain and fallen leaves. Often harvested from the wild, most would agree fresh-

picked oyster mushrooms far surpass supermarket offerings in flavour, texture and shelf life.

During the spring or early summer, firewood-size pieces of freshly cut aspen (poplar) or birch logs can be inoculated by applying a thin layer of oyster mushroom spawn to the log ends. Aluminum foil is then secured over top of the logs to prevent drying.

The logs are then placed in black plastic garbage bags and stored in a garage or shed for approximately two months. The logs will have sufficient time to become colonized with the mushroom spawn during this incubation period. After incubation, the logs are removed from the plastic bags and unwrapped.

The logs are then placed outside in a shallow trench about six inches deep.

Continued next page ...



Figure 1. Logs inoculated with oyster mushroom spawn.

... Growing Mushrooms continued



Figure 2. "Planted" mushroom logs.

The location should be well shaded (preferably under a canopy of trees) and protected from the wind. Soil is gently packed around the logs. A shallow layer of wood chip mulch or leaves will help keep the soil damp.

Oyster mushrooms will appear in the fall when cold temperatures arrive. Depending on the size of the log and its location, mushrooms could continue to grow for about five years. Large clusters will usually form at the base of the log where moisture conditions are high. Quite often, mushrooms will also appear at the top of the log. Oyster



Figure 3. Logs producing oyster mushrooms.

mushrooms can be harvested by hand. They should be stored in paper bags in the fridge. Prior

to cooking, they should be thoroughly washed. Oyster mushrooms can be enjoyed with meats, pastas or soups.

Shiitake mushrooms are grown on sugar maple logs or oak logs. Shiitake mushrooms are also known as Japanese forest mushrooms or Chinese black mushrooms. They are the most widely cultivated wood grown mushrooms in the world. Coveted by Asian royalty for centuries as a savory source of good health, shiitake mushrooms are also highly nutritious.

Shiitake mushrooms have a long shelf life (several weeks when refrigerated). They will dehydrate readily, and rehydration returns their original

form and flavour. In many countries, these mushrooms are used as a meat substitute.

Shiitake mushrooms can be grown on sugar maple or oak logs. A small tree can be harvested (in spring prior to bud break) or branches can be pruned from large trees. Care must be taken not to damage the bark during the harvesting process.

Logs or branches approximately 3 to 5 inches in diameter and 4 feet long should be used. The logs must then be inoculated with the shiitake spawn plugs. This is done by drilling a series of holes 1 1/2 inches deep (spaced about 6 inches apart) in a series of rows along the length of the log. The rows are spaced approximately 2 inches apart.

Spawn plugs or dowels, impregnated with the mushroom spawn, are then inserted into the holes and driven in with a few taps of a hammer until they are level



Figure 4. Drilling inoculation holes in the logs.

with the bark surface. A very thin layer of melted hot wax is applied over the plug with a brush. The wax seals the surface, preventing the spawn from drying and providing protection from pests.

When the inoculation process is complete, the logs are permanently placed in a well-shaded area of your woodlot. The area should be sheltered and wind protected. The logs will remain dormant until the following summer when they will be fully colonized and able to produce mushrooms. A

Continued page 4 ...



Figure 5. Inoculating logs with shiitake spawn dowels.

... Growing Mushrooms continued



Figure 6. Shiitake mushrooms growing on oak logs.

good rainfall will usually induce the logs to fruit. The water is the stimulus needed by the mushroom fungus to start the reproductive cycle.

Mushrooms will appear sporadically during the summer and subsequent summers for up to six

years. The number of mushrooms will depend on rainfall, humidity and temperature. Mushrooms should be allowed to grow to a large size (with their edges still rounded). They can be harvested by grasping firmly at the base of the stem, then twisting them off the log. Mushrooms will grow in many sizes and shapes and at different points along the

log. Harvesting them will be an activity you will love.

If you would like to try growing oyster or shiitake mushrooms in your woodlot, cottage lot or urban backyard, start by purchasing a mushroom growing kit. Each kit has everything you need (except the logs). To purchase a growing kit, contact the author at (204) 586-1365 or write to 590 Rupertsland Avenue, Winnipeg, MB, R2V 0H4, or visit <www.gourmetmushrooms.ca>.

About the author. *Ken Fosty is a Forestry Technician with the Manitoba Forestry Association-Woodlot Program. He manages his own woodlot in southeast Manitoba. At his woodlot, he grows Christmas trees, cuts firewood, plants trees and shrubs, produces Manitoba maple syrup and grows specialty mushrooms on logs. Ken teaches numerous woodlot series seminars, including one on non-timber forest products.*

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