

## What Morel Enthusiasts Need to Know

Posted by Hog - 11 Apr 2007 12:18

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Morels are rapidly disappearing from most areas--not all, but most. You can reestablish them in your area and make them grow in many places where they are not found. Here's what you need to know:

Normally, morels only grow in clean, washed river sand. But they also grow in substitutes which are high in organic matter, if they can get started. The number one factor preventing them from getting started is that they do not spread spores easily. The second factor is that the spores need to land on bare ground to get started. You can do that for them.

Here's some background information: Morel spores are unlike other mushroom spores in that they germinate rapidly in water. Other mushroom spores do not germinate readily, because they need to survive through the winter. But morel spores do not survive through the winter, because they use sclerotia for that purpose. Sclerotia is the equivalent of underground spores. I show a photo of it on the sclerotia photo page.

A related fact is that mushroom spores usually measure their environment and only germinate in the correct location, which means in contact with the ground. They send out tiny feeling filaments for detecting the surrounding conditions. Morel spores do not, because they evolved from a yeast so recently that they have not had time for such complex evolution. What this means is that morel spores germinate immediately when they get wet from rain, regardless of whether they are in the right place. Therefore, they usually germinate in the wrong place, and they seldom survive the process. They can only survive if they happen to land on bare ground before rain makes them wet.

This means morels can only get established where there is enough bare ground for the spores to land on in a reliable manner. Normally, old growth vegetation is required to create such bare ground. There are unusual environments which create bare ground, and they can cause a lot of morels to grow. One example is sandy beaches, as found in northern Michigan. Sometimes large amounts of morels are said to grow under those conditions. Another example is where there are forest fires. The fires expose bare ground, which can cause a lot of morels to grow the next year. But after two or three years, the nutrients get used up, and the morels disappear. This is because morels depend upon bacteria under the ground for nutrients, and when they are devoured, they do not get reestablished rapidly under the ground.

Therefore, if you place morel spores in the ground, you can cause them to grow in places where they could not get established on their own. This includes wooded areas where there is high humus but not large enough trees to create bare ground due to shading. When the morels come up in these areas, they

might be covered with leaves, but they are large enough to be seen through a heavy cover of leaves.

The types of morels which are adapted for growing under leaves, such as *M. angusticeps*, do not need bare ground, because they can start under damp leaves. But they have difficulty getting spores out due to leaf cover.

Here's the most effective way to get morel spores in the ground. Start with morel tissue which has spores in it. These could be morels which you just found or dried morels. Only old morels have spores. If morels are dried too young, they will not have developed spores. You can tell how old they are by the degree of pigment. As they get older, the pigment gets darker. A large, old morel might have a billion spores in it, while a new morel won't have any.

Once you have morels with spores in the tissue, cut off a small piece of tissue and place it in distilled water. Let it soak for ten minutes. Then press out the spores in the water. If it is a dusty morel, a small amount will produce millions of spores. If you are not sure, use whatever amount you think will work.

Once you have the spores in water, dilute the water down with more distilled water to the amount that you want to use. Then put it in some sort of dispenser. I use a scientific "wash bottle," which you probably won't find. Something similar is a container for dish washing detergent. If you use that, be sure to wash out the detergent thoroughly. You might get by with a sprayer set on coarse stream. However, morel spores are very large and could get jammed in the mechanism. Another thing to realize is that morel spores sink to the bottom of a container in a couple of minutes. So you should swirl it before dispensing spores.

Morel spores show visible germination in about eight hours in distilled water. This gives you a lot of time to get them dispersed after preparation. Once in the field, find ground which is well drained. Mounds and slopes are good. The reason for this is that rain water which settles in low spots seals out oxygen and kills the mycelium. With the correct procedure, nearly any wooded area that produces heavy humus and gets a lot of rain should produce morels.

Once you decide where to put the spores, scrape away the surface with the heel of your shoe and put the spores on moist ground; then cover lightly. You might use a gardener's trowel to open the ground. Be sure the surface is loose enough afterwards to allow oxygen to get in. Spread the inoculation points out at least ten feet (three meters), because morel mycelium spreads out that far.

The cool temperatures of springtime are of course the best for this, but I assume it could be done in the fall when temperatures cool down but are not freezing. Morels should come up the next spring, but two years might sometimes be required for the mycelium to get developed.

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**Re: What Morel Enthusiasts Need to Know**

Posted by captainmaxmushroom - 08 Feb 2008 16:09

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You'll find more morels in the mountains where there was a forest fire rather than in clean river sand.

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