

## ***Production of substrate for shiitake mushrooms (hobby grower's kit)***

The kit consists of:

Two perforated bags (short size) with specially heat-treated wood chips and gypsum

Two litres of shiitake grain spawn (supplied in one 2L bag or two 1L bags)

### **Preparing the substrate:**

Mix the wood chips and gypsum from one of the perforated bags in a large clean bowl or bucket. Take care - this can be a bit dusty. Important: the wood chips must have room temperature and not be too cold. Otherwise they will not absorb the water properly.

Squeeze the closed bag of grain spawn to break it up into small pieces, open the bag and pour one litre of grain spawn on to the wood chips. Now add 2.5 litres of cold water and mix it all up with a large spoon until the grain spawn is evenly mixed with the wood chips. Put the mixture back into the perforated bag in which the wood chips were supplied. Repeat this process with the second bag of wood chips and gypsum and the remaining one litre of grain spawn using another 2.5 litres of water.

### **Storage in the growing phase:**

Using rope or cord, hang up the bags in a room at a temperature of approx. 21° C. If you don't have anywhere where you can hang up the bags, place them on a support such as a wire basket (bicycle wire basket or similar) which allows air to circulate.

Important:

- During the growing phase the substrate should not be moved or touched.
- It is possible that water will drip out of the bags. To protect the floor, you can lay out plastic foil below to catch the water.
- The growing phase takes about 7 to 8 weeks.

### **Harvesting phase:**

The substrate blocks should turn white to patchy brown within approx. 7 to 8 weeks due to the growth of mycelium. The brown colour appears when the mycelium has formed a crust on the surface. The crust prevents loss of moisture due to evaporation and protects against other mushroom spores in the air. By this time the substrate blocks are fairly solid.

The growth of mushrooms (fruiting bodies) can now be accelerated by shaking or vibration of the substrate: Take off the rope or cord and drop the substrate bag three times onto a table or surface from a height of approx. 10 cm. This helps the mushrooms to start growing. Now cut away the perforated bag from the substrate and store the substrate at a temperature of 17 to 21°C or hang it up again. Make sure that the moisture level in the surrounding air is high enough. If the room is not damp enough you can spray the substrate with water. Alternatively, you can use large transparent plastic bags: Put a few holes in for air circulation and place them loosely over the substrate.

The mushrooms should start to grow after a few days and reach the correct maturity for harvesting after approx. 7 to 10 days. The correct harvesting time is reached when the skin on the underside of the cap has torn open and the gills of the mushroom are visible but the cap is still slightly rolled in. Harvest by turning the stalks while pulling away from the substrate block. Remove all remains of stalks from the substrate since they may start to go mouldy after a few days. You can use a knife for this.

After the first harvest, the substrate needs a recuperation phase, ideally at 21°C. One to two weeks after the first harvest, submerge the substrate blocks for 8 hours completely under water (you can use a brick etc. to stop them from floating).

The mushrooms of the second flush should be ready for harvesting after about 10 to 12 days. Use the same procedure (submerging in water) to bring on the third flush. The first flush is normally the largest since the mushrooms use up nutrients in the substrate. You may see some signs of green mould after the first flush - this can be ignored. After harvesting three times, the substrate blocks can be put on the compost heap.

The above method is also suitable for growing oyster mushrooms, although in this case the perforated bags are not removed completely but cut open by slashing holes with a knife (short size bags: 7 mm holes, two vertical rows of 6 holes each).

Please contact us for further information or if you need larger quantities. We also sell kits with long size bags for commercial growers.