Shiitake mushroom cultivation outdoors on wood logs

1. **Tree**
   - Healthy live tree or branches
   - Recommend cutting around March during the dormant season but summer to fall works as well. Branches are fine.
   - Try to inoculate soon after felling the tree
   - For shiitake, either red oak or maple, sugar or red are good.

2. **Mushroom spawn**
   - Mushroom mycelium cultivated into specific substrate for transfer into wood logs. Many companies sell mushroom spawns either in sawdust or dowel plugs.

   ![Sawdust](image1.png) ![Plug](image2.png)

   Pictures from Field and Forest web site.

3. **Inoculation tools**
   - Drill
   - Tip bit and inoculation tool appropriate for the chosen method of inoculation
   
   For Plug spawn inoculations.
   - 8.5mm screw bit with stop
   - Hammer

   For Sawdust spawn
   - 12.5mm screw tip bit with stop
   - Brass inoculator

4. **Log inoculation methods**
   - Drill holes 6-8 inches apart in a row
     - Rows about 2 inches apart with interspaced holes
   - Inoculate each hole with spawn
   - Cover holes and side of the log with wax
     - Soft cheese wax can be used without melting. Household paraffin wax is cheaper and available in hardware stores.
5. **Stack inoculated logs outside in a shady area**
   - The mycelium will grow and fruit spontaneously when conditions are right
   - Allocate 6 month to 1 year before fruiting. Depending on the strain and conditions.
   - Logs will produce for 2-3 years

6. **Induce fruiting**
   - To control fruiting logs are soaked for 24-48 hours

7. **Shiitake strains**
   Choices are abundant and vary based on fruiting temperature, time of the year for fruiting, fruiting interval, mycelium growth rate.
   - The “Native” strain from Field and Forest grows particularly well in Lincoln.
   - The “Cold weather strain” can fruit during January thaw, when insects or slugs are absent. It also produces well early spring.
   - WR46 is a commercial strain that produces after heavy rains in the summer and fall. The mycelium grows fast and fruiting intervals are short.
   - Beltane produces early spring.

8. **Purchase of mushroom spawn and equipment**
   - https://www.fieldforest.net
   - https://fungially.com/grow-mushrooms
   - https://fungi.com/collections/plug-spawn-for-logs-stumps