

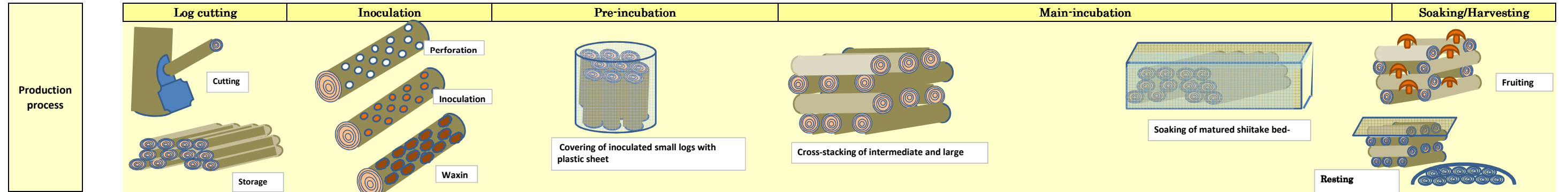
Shiitake bed-log cultivation flowchart

Highland

Gasa 2,760 m

Haa 2,720 m

| | Nov. | | | Dec. | | | Jan. | | | Feb. | | | Mar. | | | Apr. | | | May | | | Jun. | | | Jul. | | | Aug. | | | Sep. | | | Oct. | | |
|-----------------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--------|------|-------|--|--|
| | early | middle | late | early | middle | late | early | middle | late | early | middle | late | early | middle | late | early | middle | late | early | middle | late | early | middle | late | early | middle | late | early | middle | late | early | middle | late | | | |
| Rain fall | 27.7 | | | 12.8 | | | 18.4 | | | 25.8 | | | 49.4 | | | 81.2 | | | 125.6 | | | 210.6 | | | 304.5 | | | 260.6 | | | 171.1 | | | 100.1 | | |
| Max. temp. °C | 14.6 | | | 12.4 | | | 9.9 | | | 10.4 | | | 13.5 | | | 15.4 | | | 17.8 | | | 19.8 | | | 20.7 | | | 20.6 | | | 19.5 | | | 17.5 | | |
| Min. temp. °C | 1.7 | | | -2.1 | | | -2.6 | | | -1.1 | | | 2.5 | | | 5.8 | | | 8.8 | | | 11.8 | | | 13.3 | | | 13.1 | | | 11.7 | | | 7.1 | | |
| Relative hum. % | 70.3 | | | 72.3 | | | 71.7 | | | 71.4 | | | 71.0 | | | 71.0 | | | 73.5 | | | 80.6 | | | 84.0 | | | 83.1 | | | 80.5 | | | 77.8 | | |



| Working contents | Log cutting | | Inoculation | | Pre-incubation | | Main-incubation | | Soaking/Harvesting | |
|------------------|---|---|---|---|---|--|-----------------|--|--------------------|--|
| | <ul style="list-style-type: none"> •Cutting •Cutting to size, transporting •Sorting by log diameter, storage | <ul style="list-style-type: none"> •Drilling of holes •Inoculation •Waxing (sealing) | <ul style="list-style-type: none"> Small-diameter logs: Pre-incubation (cover with plastic sheet) Intermediate-diameter logs: Pre-incubation (cover with plastic sheet) Large-diameter logs: Pre-incubation (cover with plastic sheet) | <ul style="list-style-type: none"> Remove cover --> incubation (cross-stack or stand on ends with spacing in between) Remove cover --> incubation (cross-stack or stand on ends with spacing in between) Remove cover --> incubation (cross-stack or stand on ends with spacing in between) | <ul style="list-style-type: none"> Soaking, fruiting: harvest Resting | <ul style="list-style-type: none"> Soaking, fruiting: harvest Soaking, fruiting: harvest | | | | |

| Shiitake mycellia | Culture and storage of seed fungus | Logs colonized by shiitake mycellia | Spread and maturation of mycellia | Stimuli to induce fruiting (watering, temperature, light) •growth of primordia | Fruiting body formation, phototropism, nutrient uptake |
|-------------------|------------------------------------|-------------------------------------|-----------------------------------|---|--|
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| Important points & diseases | <ul style="list-style-type: none"> •When cutting logs, do not use logs infected with <i>Hypoxylon</i> spp. •After cutting, if the log surface becomes too hot (through exposure to direct sunlight, etc.), spores of harmful fungi will germinate, keep logs in the shade and avoid high temperatures. •Be careful not to damage the bark. | <p>Be extremely careful when inoculating with spawn.</p> <ul style="list-style-type: none"> •Check that spawn is not contaminated. •Scrape the spawn surface using a sterilized implement and discard the scrapings. •Perform inoculation and waxing under sterile conditions. •A log moisture content of 38 to 42% (wet base) is suitable for inoculation. | <p>The purpose of pre-incubation is to allow the spawn to colonize the logs.</p> <ul style="list-style-type: none"> •Allow shiitake mycellia to spread to the inner bark near the inoculation hole by maintaining temperature and humidity. •Watch carefully for contamination by the harmful fungi listed to the right. | <p>Characteristics of harmful fungi</p> <ul style="list-style-type: none"> •<i>Hypoxylon</i> spp. on log ends: Ascospores germinate at high temperatures due to plastic sheet, etc. Reduce temperatures by removing plastic sheet, etc. Avoid drying under bark layer. •<i>Tricoderma</i> spp. on log ends: Young colonies will die if dried. Early treatment is important. •<i>Diatrype</i> and <i>Graphostroma</i> spp. on bark surface: Occur in high temperature environments (due to direct sunlight, etc.) in the spring. Avoid high temperatures by providing shade. •<i>Schizopora</i> and <i>Merulius</i> spp. on bark surface and log ends: Fungi of both genres germinate and grow under excessive moisture and can be spread through bark to bark contact. | <ul style="list-style-type: none"> •Soak in water that is 20°C or lower for 8 to 10 hours. •Perform steam treatment within 3 days of soaking. After steam treatment, cross-stack the logs or stand the logs on their ends and cover the upper surface. •Harvest before the caps open too much. If they are left open for too long, they can be infected by harmful fungi or damaged by insects. | <ul style="list-style-type: none"> •For resting, leave the logs cross-stacked for approximately 40 days. •During the resting period, occasionally water so that the logs do not become too dry. |
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