WoodSource Connection for Mushrooms: A New Marketing Tool for Small Diameter Hardwood Logs

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www.fieldforest.net
Shiitake Growers Association of WI
www.shiigaw.org
Cultivation of Shiitake on Natural Logs, a Quick Overview.
Acquisition of suitable logs
Delivery to inoculation site
Inoculation
Incubation

9-15 month incubation time
Fruiting

Mushroom production after 12 months of incubation
Coppice Management for Shiitake Log Production

Log term leases established with landowner
Quercus serrata
20 year rotation
Thinned at five years
Raw Shiitake Log Production

Second harvest from this lease.
Purchased Logs

2015 pricing
~$1.50/log to $5.00/log
Retail

2015 pricing at retail level
~$5.00/log to $7.50/log
160,000 logs inoculated per year
Log Demand Drivers

Mechanization of inoculation
Consumer awareness of Quality differences
High Speed Cultivation Techniques
High Speed Cultivation

Dramatically shortens crop cycle
Year round indoor production
A scenic view from the train

Sendai, Japan
March 2010
Fukashmia Daiichī
March 10, 2011
Radioactive Fallout Zone

Fallout heaviest in the main raw log production area for the shiitake industry

Two harvest cycles lost due to cesium contamination
Potential Resources

Precommercial thinnings
   TSI cuts
Limb wood from harvest operations
What is desired in a shiitake log?

Dormant cut from living trees
3 to 6 inches in diameter
36 to 40 inches in length

At right: Pin Oak ~25 years old
White Oak (s)

- Preferred by most shiitake growers
- Good sapwood:heartwood ratio
- Fewer disease problems
Sugar Maple

Used by many growers
Readily available in some areas.
Shorter productive life than oaks
Q1 Are you doing a timber harvest that will have Red or White Oak, Red or Sugar Maple, or Beech tops left over?

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>24.44%</td>
</tr>
<tr>
<td>No</td>
<td>75.56%</td>
</tr>
<tr>
<td>Total</td>
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</table>
Q2 Are you thinning in a stand of Red or White Oak, Red or Sugar Maple, Beech or Ironwood pole timber?

Answered: 90  Skipped: 1

<table>
<thead>
<tr>
<th>Answer Choices</th>
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<tbody>
<tr>
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<td>40.00%</td>
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<tr>
<td>No</td>
<td>60.00%</td>
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<tr>
<td>Total</td>
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</tr>
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Wood For Shiitake Cultivation Survey

Q3 Are you interested in supplying suitable mushroom logs having the specification of 3 to 7 inches in diameter by 40 inches of length of the above species?

Answered: 86  Skipped: 5

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<thead>
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<tr>
<td>No</td>
<td>43.02% 37</td>
</tr>
<tr>
<td>Yes. Please specify (typ...)</td>
<td>58.14% 50</td>
</tr>
</tbody>
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Total Respondents: 86
Q3 Are you interested in supplying suitable mushroom logs having the specification of 3 to 7 inches in diameter by 40 inches of length of the above species?

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</tr>
<tr>
<td>Yes. Please specify (typ...)</td>
<td>58.14% 50</td>
</tr>
</tbody>
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Total Respondents: 86
Q4 In what quantity would you be able to supply Red or White Oak, Red or Sugar Maple, Beech, or Ironwood?

Answered: 85  Skipped: 3

<table>
<thead>
<tr>
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<th>Responses</th>
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<tbody>
<tr>
<td>15-50 logs</td>
<td>14.77%</td>
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<tr>
<td>50-100 logs</td>
<td>13.04%</td>
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<tr>
<td>Over 100 logs</td>
<td>25.00%</td>
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<tr>
<td>N/A</td>
<td>46.89%</td>
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<tr>
<td>Total</td>
<td>85</td>
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</table>
WoodSource Connection

www.shiigaw.org

Information available on website
- Selecting and cutting wood
- Pricing, Selling and Buying Wood
SELECTING AND CUTTING WOOD FOR SHIITAKE CULTIVATION

With the continued growth of the natural log based shiitake industry demand for suitable logs for cultivation will also increase. Land owners, who are not cultivators, may find that their wooded acreage could possibly be managed or harvested for suitable logs and provide another income stream from their property. Before a single tree is cut though, an understanding of the log requirements is needed as is the long term consequences of tree harvest on overall forest health. Proper forest management is a must for long term stand health and future timber crops and is beyond the scope of this fact sheet.

If you have any doubts about which trees to cut remember this: “when in doubt, consult it out.”

Green is Good

Selecting healthy, living green trees of a suitable species is perhaps the most important requirement. Diseased trees often have dead areas and suppressed, low vigor trees often have either dead areas or little available nutrients for productive mushroom cultivation. The success of the mushroom cultivator is tied to proper tree selection, inoculation and incubation. Get this right and the rest is easy!

Timing of Cut

Dormant Season Cut

Timing of the cut will influence the long term productivity of a shiitake bed log. With oaks, the shiitake fungus will grow best in logs that have a large sapwood to heartwood ratio and high stored carbohydrate levels. This means that the best time to harvest oaks for shiitake cultivation is during the dormant season. This time frame is the period from one third leaf color change in the autumn until two to three weeks before visible bud swell in the spring. Within this time frame there is an even further optimal time to cut, and that is at one third leaf color change in the fall. As the tree is entering dormancy, all radial growth has stopped and the cells have not hardened off so the fungus can enter them easily.
Pricing, Selling and Buying Wood for Shiitake Cultivation

Cutting logs or bolts for shiitake cultivation from wooded land can provide a new income stream for the landowner. Shiitake growers are always looking for a suitable wood source and if they can find it for a fair price, a satisfactory relationship between logger and grower can last for many years.

Shiitake logs usually bring two to three times the price per cord compared to unprocessed firewood at the landing. The difference in price reflects the timing, careful selection and gentle handing to get it there. Careful consideration prior to cutting, such as species selection and timing of cut is important because the needs of the shiitake fungus are rather specific. These are discussed in detail in the pamphlet, “Selecting and Cutting Wood for Shiitake Cultivation” which can help you decide if you’d be better off selling your wood for firewood or as shiitake bed logs.

Shiitake Log Specifications

You will find that many experienced mushroom growers will pay a good price for suitable logs for shiitake cultivation. There are several key factors that can be pricing drivers for logs. Ultimately, the final price will depend on the following:

- **Wood Species**: Divided into 3 categories for commercial shiitake cultivation, wood is classified as prime, good or acceptable. Many growers will pay more for oak. Any members of the oak group are considered prime, while Sugar Maple, Beech and Ironwood are considered good. Softer hardwoods such as Red Maple and Basswood are considered acceptable. Many other species fit into each of these categories. For a more comprehensive list, see [www.shiitake.org](http://www.shiitake.org).
### Listings

#### Buyer/Seller Listing

<table>
<thead>
<tr>
<th>Wood Type</th>
<th>Buyer/Seller</th>
<th>Quantity</th>
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<th>Email</th>
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*Note: This table lists fictional data for demonstration purposes.*