Alternative growing practices for oyster mushroom cultivation in the Northeast

SARE PROJECT FNE15-825

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Growing Oyster Mushrooms on straw

Objectives

1)Quantify the most effective treatment method for straw used in oyster mushroom cultivation for small-scale mushroom farms in the Northeast.

2)Record how different strains of oyster mushrooms respond to the different pasteurization techniques.

3)Publish and distribute a guide for oyster mushroom cultivation in the northeast.

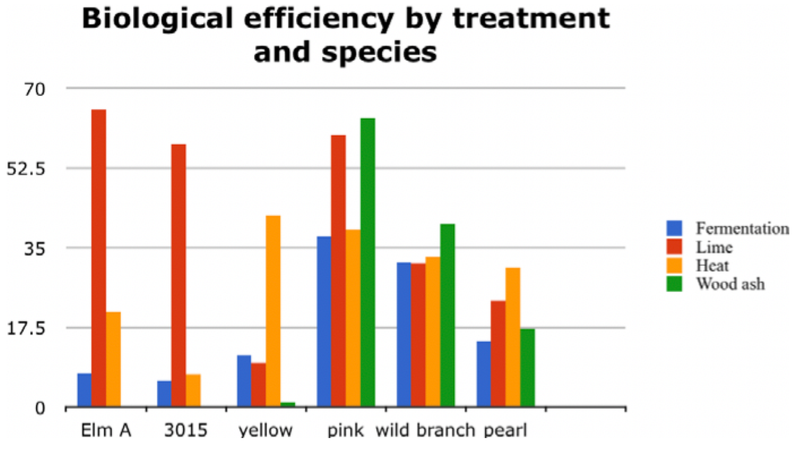
Research and Findings

Yields were recorded using four different straw treatment methods and six different strains of oyster mushrooms. The four treatment methods were pasteurization, lime, fermentation, and wood ash. All four treatments were capable of fruiting mushrooms. Of the four treatments lime was the least expensive, timely, and had the highest yield. Growing oyster mushrooms on straw treated with lime is accessible to many farmers in the Northeast.

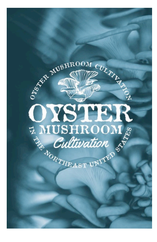
The average biological efficiency (BE) overall was fermentation 18%, wood ash 20%, pasteurization 29%, and lime 41%. Biological efficiency is the ratio of fresh mushrooms harvested to pounds of dry substrate.

Mushrooms are grown on straw using these 6 steps.

1) Shred the straw. This decreases particle size allowing for faster growth
2) Treat the straw. Treatment removes ambient fungi and bacteria in the straw
3) Inoculate. The introduction of oyster mycelium into the clean straw
4) Incubate. This is the time when the mycelium grows through the straw substrate providing food for the mushrooms to come.
5) Fruit. By providing proper temperature, lighting, co2, and humidity mushrooms begin to fruit out of holes punched in the bag.
6) Harvest. Once mushrooms are mature they are removed and weighed.



Outreach and Education



The cover of a 32 page booklet created for outreach.

A workshop held to discuss the results of the study and practice inoculating straw

After concluding the research phase of this project Willie presented at several conferences, published a guidebook and hosted a workshop. The booklet is a 32 page report on the findings of the study as well as a review of the process of oyster mushroom cultivation. The booklet is available on the fungially website and was shared through several email lists.

Presentations were given at the NOFA summer conference and the Radical Mycology convergence in 2016, sharing the process of growing oyster mushrooms on straw. Fungi Ally also hosted a fall tour of the farm demonstrating how to grow oyster mushrooms on straw.

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