

**Paul C. And Edna H. Warner Endowment Fund for Sustainable Agriculture
Report Form**

(Final Report 2014)

Sustainable Mushroom Production for Small Scale Specialty Crop Growers

Summary: (describe your project, it's objectives and results in one or two sentences)

The overall objectives of this research project is to determine if recycled street tree logs, coffee grounds, wood shavings, and compost are appropriate growing medium for shiitake, miiitake and oyster mushrooms and expected yields in an urban farm setting order to maximize profits for micro-scale farms. Mushroom production could be incorporated into urban farm system if the appropriate environmental controls are in place before initiating production.

What was done? (one paragraph describing the goals, experiments and how they were performed).

Two workshops, "Beginning Mushroom Cultivation", were held on July 26th (14 participants) and Sept 28, 2014 (10 participants). Materials and supplies were obtained. Throughout July 2014 30+ logs where inoculated as described in the protocol (10 of each type of mushroom). On Oct. 19th, bags with experimental medium (compost, wood shavings, coffee grounds) -10 shiitake, 10 miiitake, and 10 oyster for each media type were created (90 total). They were set up under a plastic tent in the farm stand, bags were hung on old clothes line and racks under the tent. Bags & logs moved indoors on Dec. 10th. They were moved to a shed in the spring and then out in the open environment in the summer (under shade cloth).

What were the results? (one paragraph on the outcome of the experiments, what was learned from them).

Mushroom bags began to spawn in the spring of 2015. The miiitake and shiitake mushrooms never produced harvestable crops. A grower consultant suggested making the holes in the bags larger which then seemed to lead to the media drying out quickly. Oyster mushrooms growing in compost medium produced the most mushrooms by number and weight. This was unexpected as literature indicated that production would be best in wood shavings and coffee grounds. The mushroom logs began to show very initial growth in Oct. 2014 and resumed growth in the spring of 2015. However, the mushrooms never grew to the expected size and the quantity produced was minimal. Some important lessons learned were (1) it took much longer to initiate growth than expected. Although the logs and the bags were kept at the appropriate moisture, the length of time it took, along with the amount of effort to move the materials in and out of shelter in order to achieve a harvestable

crop was outweighed the cost savings in using locally sourced materials and (2) climate control was somewhat challenging, even with a shade cloth. Rain fall in the months of June, July and August of 2015 was very high and affected production.

How have the results contributed or will they contribute sustainable agriculture? (One paragraph on how will farmers use this research information and what difference will it make on their farms.)

Mushroom production does have the potential to be a viable and profitable option for urban farmers. However, there are some challenges that producers need to address before undertaking this enterprise. Climate control, space requirements, and rodent control need to be addressed. The use of locally sourced materials may not be the most cost effective media due to unknown variabilities and timing of available materials.



Inoculated logs



Youth volunteers building platforms for the logs



Mushroom bags before hanging up



Basic Mushroom production workshop



Oyster mushrooms growing in compost media



Miitake mushrooms beginning to grow