Summer 2016 Campus Sustainability Fund Proposal

'Shroomin the "Milt-Kit-Hemp Way:"

Mushroom Grow Kits for the Culinary Arts Program @ PSC

Project Leaders: Tom Huber & Kevin McCarthy

Co-Participants: Summer Culinary Practicum Students and Adirondack Mycology Club members

Funds Requested: $341.20

Project Summary

Goals:

1. *Develop the lowest-cost and easiest method of growing mushrooms on campus for use in culinary program*
2. *Like symbiotic fungi, develop a collaborative relationship between mycophiles in the Culinary Arts Department and the Adirondack Mycology Club*
3. *Demonstrate an efficient method of mushroom cultivation for home growers and for Farmers' Markets*
4. *Experiment growing choice edible mushrooms such as Hericium erinaceous and Hericium americanum (*Lion's Mane)

Project Justification and Relevance:

Mycology is the scientific study of fungi. Fungi are critical for the healthy functioning of ecosystems, which includes human beings. Mushrooms, the fruiting bodies of fungi are important for their nutritional and medicinal content for a host of organisms. Human beings, in particular, benefit from choice edible mushrooms as a food source plentiful in antioxidants, amino acids (protein), vitamins and minerals. Many chefs are mycophile enthusiasts because of the complex tastes, smells, and textures that gourmet mushrooms provide to a range of culinary dishes spanning food cultures around the globe. The medicinal value of many edible mushrooms is significant in lowering cholesterol, enhancing immune system functioning and serving as anti-cancer medicines (increase in polysaccharides and triterpenes).

The culinary department at PSC regularly purchases mushrooms from external vendors for culinary courses and the practicum program. More recently Chef Kevin McCarthy has been purchasing table top mushroom kits from Fungi Perfecti for demonstration and culinary purposes. Parallel to this activity, the Adirondack Mycology Club at PSC has been successfully growing mushrooms using a customized indoor grow kit that it has refined over the past two years, which reuses spawn.

This proposal represents a coming together of both enterprises to join forces in using mostly local and sustainable resources (recycled paper, hemp and previously used spawn) in making mushroom grow kits for use on campus. Chef McCarthy has also expressed an interest in selling the kits at the Farmers' Market in Saranac Lake.

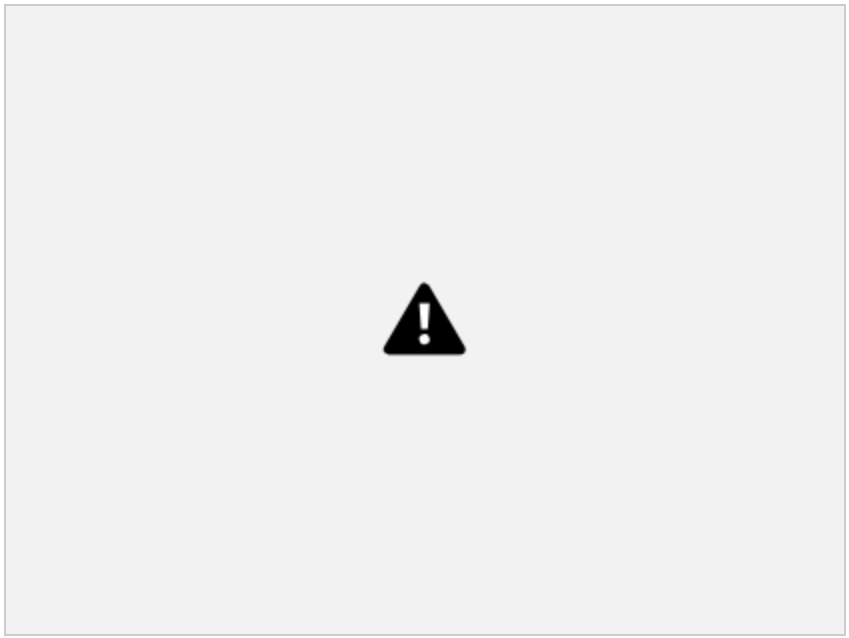
Methods:

Since 2014, the AMC has cultivated mushrooms using an outdoor log method and an indoor grow kit method. The substrate recipe for the indoor kits is based on the non-sterile experimental method of Milton Tam from the Puget Sound Mycological Society. In short, after

many different trials, the AMC determined that the use of hemp would both lower the cost and improve the yield of the kits by reducing contamination.

In the summer of 2016 at the end of the culinary practicum, Chef Kevin McCarthy invited members of the AMC to conduct an oyster mushroom kit workshop involving the reuse of the purchased kits that he was fruiting out in the Mushroom Indoor Cultivation Center (MICC) – also known as canoe storage located under the Stirling Tompkins Pine Room of the Student Center.

So, on August 16th using the "Milt-Kit-Hemp Way", the workshop participants made up 33 oyster mushroom grow kits; 30 of which involved reusing the kits purchased previously from Fungi Perfecti (see CS Fund Proposal submitted last spring). Three of the kits were made using newly purchased spawn from Field and Forest to use as a control, and to make up additional kits in the future. Kitty litter made from pelletized, recycled paper, hemp hurds, and an 8 block set of Lion's Mane kits (also purchased from Field and Forest Products in Wisconsin) were all purchased for making grow kits using the AMC's custom recipe. A paper related to this process and recipe is provided with this proposal (as supporting documentation), and has been submitted to FUNGI Magazine for future publication.



Project Budget and Timeline

A delineation of the materials and cost for the mushroom kits is below. The AMC provided the filter bags and nitrogen source materials for the kits. AMC Advisor, Tom Huber purchased these materials previously and is requesting reimbursement in support of this proposal.

Materials	Cost

Hemp Hurds (American Hemp)	**$100.84**
Yesterday's News Kitty Litter	**$60.81**
Lion's Mane Kits (8 block set)	**$100.00**
Oyster Grain Spawn (4 lbs.)	**$24.00**
Shipping & Handling (Field & Forest Products)	**$55.55**
Total	**$341.20**

We now have the substrate materials and spawn to continuously grow kits throughout the fall semester, in addition to what was made during the summer. We have enough hemp on hand to make up kits through the spring semester.

Supporting Documentation

Attached to this proposal, submitted on 8.30.16 to Kate Glenn, Campus Sustainability Fund Advisor is the original article by Milton Tam and the article by Tom Huber submitted for publication to FUNGI Magazine. Receipts of purchased materials is also included as a separate attachment.

Follow Through

As cited above, the summer workshop resulted in making 33 grow kits. As these kits fruit in the early part of the semester and eventually need to be recycled into new kits, future workshops will be scheduled. The success of these "fruiting trials" will be documented with the results shared with the campus community on a periodical basis.

Questions or requests for more information about this proposal can be directed to Tom Huber at thuber@paulsmiths.edu or (518) 327-6330. Thanks for your support!