Spring 2014 Semester Report

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Permaculture Intern
Hugelkultur Research

- **Construction**
  - Dig a trench
  - Pile up a mound of logs
  - Branches as next layer
  - Twigs on top of this
  - Small organic matter like leaves, compost, kitchen waste and manure to fill the gaps
  - Upside down sod on top of this
  - Capped with soil on top

- **Advantages**
  - Uses up wood waste
  - Sequesters carbon
  - Provides copious nutrients
  - Provides air pockets for roots
  - Warms the soil
  - Increases growing area

http://betterfarm.blogspot.com/2012/04/hugelkultur-for-your-garden.html
Six beds to go on east side of property

Three Permaculture Guilds
- Service Tree
- Hazel Tree
- Autumn Olive Tree

Three Annual Crop Groupings
- Potato
- Cabbage family
- Tomato

Total surface area as hugel beds is 4618 square feet

Total surface area of six equivalent flat beds is 2600 square feet
Serving as liaison between OfS and BioClub/SSE

- Starting seed in the greenhouse
- Picking up manure
- Adding manure to the garden and cleaning up from last year
Shiitake Cultivation - Introduction

- The mushroom life cycle is not well understood by the general public
- Mushroom cultivation is a good way to become familiar with this process

http://www.berglorbeerfarma.com/About-Us.html

The Mushroom Life Cycle

How Mushrooms Grow

Fruiting a Pinhead (Baby mushroom)

Into Mycelium

...and growing

Continue growing

Bigger

Bigger

Bigger

Full grown!

Zoom in to see Basidia (spore pods)

Drop Spores

Female male

Grow into Hyphae

Meet and combine
Methods

Hydration of grain

Loading hydrated grain into jars

Thanks to Dean Simeonson for the pic!

Loading grain into jars

Sterilization of grain
Methods (2)

Incubation of grain spawn

Thanks to Lauren Giuliani for the pic!

Inoculation of bulk substrate

Thanks to Dean Simeonson for the pic!

Incubation and browning of spawn bags

Harvest time!
44.5 quarts of grain were inoculated
36.5 bags of bulk substrate were inoculated
Only 1 jar of grain contaminated
13 spawn blocks have been “birthed”
35 oz. of mushrooms have been harvested
Looking to the Future

- Inoculation of natural logs this spring
  - Drill holes into hardwood logs
  - Insert colonized wood dowel
  - Cover with wax
  - Incubate for 9-15 months