Tony Hoch

Jeff Hubbell and Lindsay Olson are engaged in a grand experiment on the far edge of West Laramie, where gravel streets meet cow pastures.

They are turning a former 1-acre residential lot into a small farm. From making their own compost to amending their soil, to using a new season-extending hoop house for vegetables, Jeff and Lindsay have their eyes on the prize of sustaining the business by growing high-dollar mushrooms year-round.

**Compost and Substrate Operation**

Soil is at the heart of any growing operation. Unfortunately, soil in parts of southeast Wyoming is not one of its best natural resources. These two backyard farmers aim to “keep it local.” Jeff and Lindsay collect unused vegetable matter from a downtown restaurant and the food co-op, sawdust from carpentry shops, wood chips from a forest management company, and grass clippings from a landscaper to make their own compost for soil amending.

Native soil is mixed with these and aged for at least a year. Vegetables are grown on the surface of the piles while the mix is aging. To further improve their soil mix, biochar is made by burning wood scraps. The mix, when finished, goes into their hoop house and an ever-growing set of outdoor vegetable beds.

They reuse free wood waste collected around town as substrate for mushrooms. Lindsay and Jeff exclusively grow wood-consuming or “saprophytic” mushrooms and make custom sawdust blocks for substrate from sterilized wood chip mixtures. Lindsay and Jeff use cottonwood chips because the wood quickly composts and releases nutrients, making it ideal for their needs.
More mushroom material

Jeff and Lindsay recommend more information on growing mushrooms in general is at www.fungi.com and just about anything written by internationally acclaimed fungi expert Paul Stamets. You can also pick up a package of Jeff and Lindsay’s mushrooms at the Big Hollow Food Coop in Laramie and/or follow news of their operation on Facebook under “Planet Laramie Farms and Mushrooms.”

The “Fungilow” and other Microenvironments

Growing mushrooms is still not an exact science despite all the advances in horticulture in the past century. Jeff and Lindsay are always looking for and trying new microenvironments to inoculate with mushroom spores or place inoculated blocks the size of salt blocks. These need to be continuously moist locations like under the leaves of squash plants or in holes in cottonwood logs (see photo page 7). The north side of the hoop house looks especially promising because it provides shade and sheds water into the growing area.
Substrate drying out is one of the biggest problems in this climate. All of the experimentation out-of-doors is wonderful as the farm is being developed, but the real heart of the mushroom operation is the fungilow, an indoor, temperature- and humidity-controlled room with a floor drain that can be sterilized every two to six months.

How is inoculant made? Lindsay and Jeff buy sterile spores on an agar (sterile sugar substrate) so they are certain of the purity. After incubating in the sterile fungilow for a few weeks, the agar can be split onto grains of barley for a few weeks, then onto sawdust for a few weeks – each step produces more inoculant to work with. According to Lindsay, “You can basically step in at any level of the process.”

Ideally, the final product is grown out on sawdust blocks in the fungilow for the first of two or three fruitings (sprouting of what we know as mushrooms). The first fruiting is usually the best in quality and quantity.

Due to space limitations, inoculated blocks are typically moved into a greenhouse, the hoop house, or other locations after the first fruiting or “flush.”

The key for the varieties they grow right now is to have nighttime temperatures below 60 degrees Fahrenheit with daytime temperatures in the mid-60s. Mushroom varieties can be chosen to match a climate. They want to ultimately focus on cold weather varieties like shiitakis in the winter and warm weather varieties like pink oysters in the summer.

A few words on distributing inoculated blocks around the property: for practical purposes, Lindsay likes placing inoculated sawdust blocks in different locations in the hoop house and around the property (like on the north side of the hoop house) since most people don’t have a sterile room.

She is always looking for ways to incorporate mushrooms into the garden and landscaping so she can share that information with fellow gardeners. For making a viable business, the real production happens in the fungilow because of the sterile, controlled environment.

What’s Next?

With only one season using the hoop house, outside beds still being developed and with only a few years growing mushrooms, the operation is still growing at a rapid pace. They will be planting fruit trees soon and fine-tuning where to establish windbreaks.

But with everything else going on around the farm, Jeff still wants to focus on mushrooms.

“Why focus on mushrooms? They are the most unique and profitable product we can grow here. Unfortunately, they are the most complicated and hardest to grow,” he says.