# The Nuts and Bolts

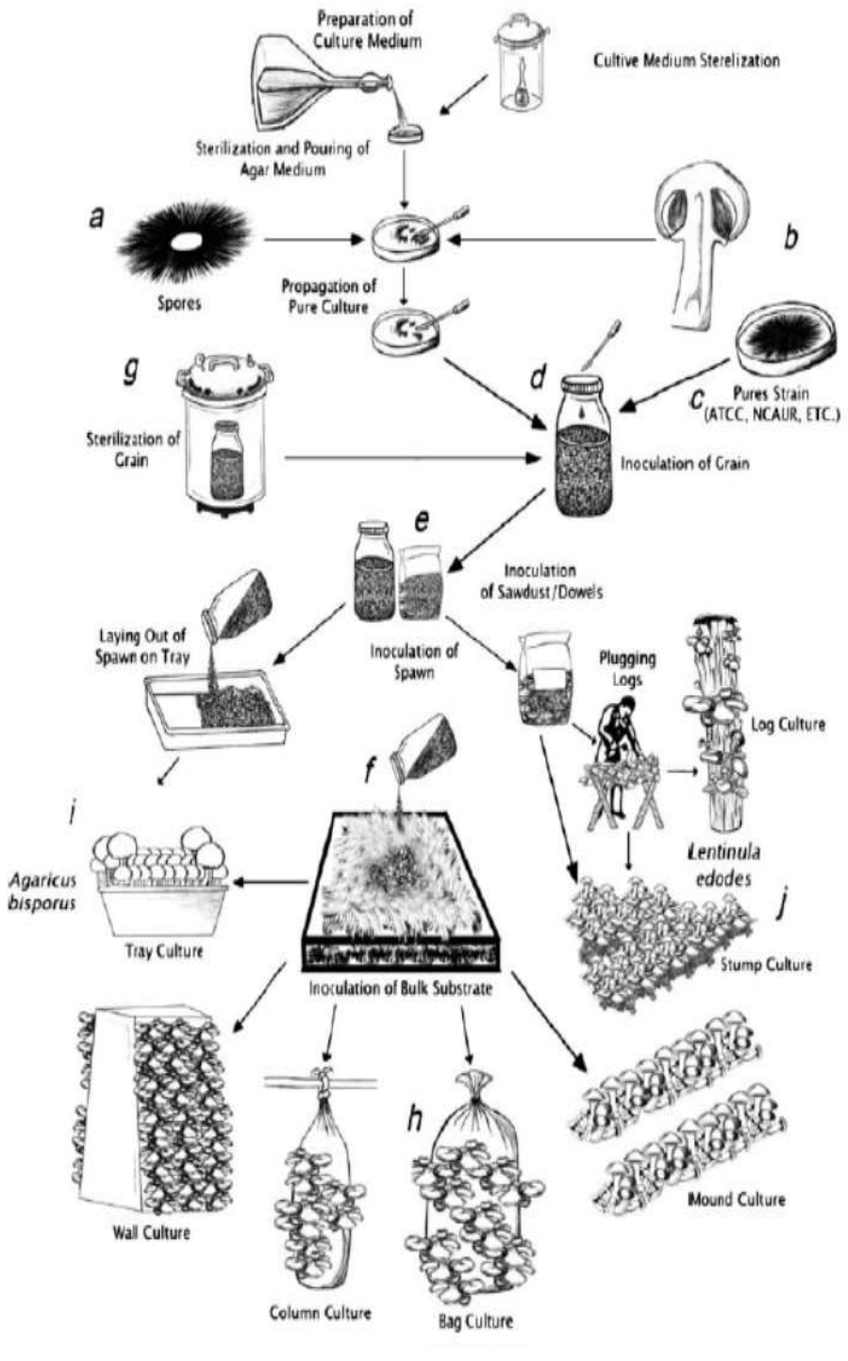
What are the different entry points for a beginning mushroom producer?

What are some of the necessary inputs?

What are some alternatives to the MycoCats process outlined earlier?

Practical info for getting started fruiting mushrooms.

# The Full Process




- Prepare cultures (7-10 d)
- Spawn production (10-14 d)
- Substrate preparation (2-4 d)
- Spawn run (14-21 d)
- Production flush (7-42 d)
- Total time = 40-90 days to finish

# The Easiest Entry Point

Growing mushrooms at their fruiting stage requires the least amount of inputs.


A controlled-environment grow space is the only requirement.

# Inputs

Temperature Regulation (less than 80° F)

Humidity Regulation (RH greater than 85%)

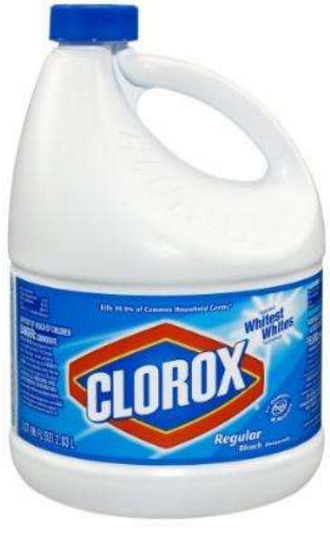
# Inputs

Regulation of $CO_2$ Levels (less than 600 ppm)

Amprobe $CO_2$ Meter


Air Circulation

Maintaining a clean environment to prevent contamination.



# Inputs

Colonized grow bags!

# The Second Easiest Entry Point

Spawn Run!


- Fungi Perfecti
- Aloha Medicinals
- Field and Forest

# The Second Easiest Entry Point

Growing mushrooms from spawn requires preparation of substrate and sterilization or pasteurization of substrate.


# Alternatives

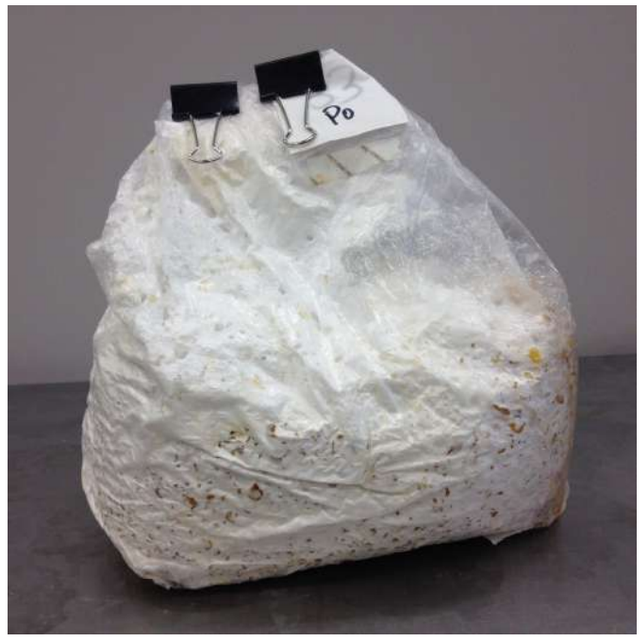
## Hot Water Pasteurization

After the substrate is mixed an weighed, it is placed in a water bath with a temperature of between 160°and 170° F.

This is oftentimes achieved using a steel drum and propane burner.

The straw is soaked in this bath for an hour. The hot water kills most but not all thermophobic organisms but is not hot enough for thermophilic organisms to develop.

The substrate is then cooled, spread out on a clean table and inoculated with spawn.

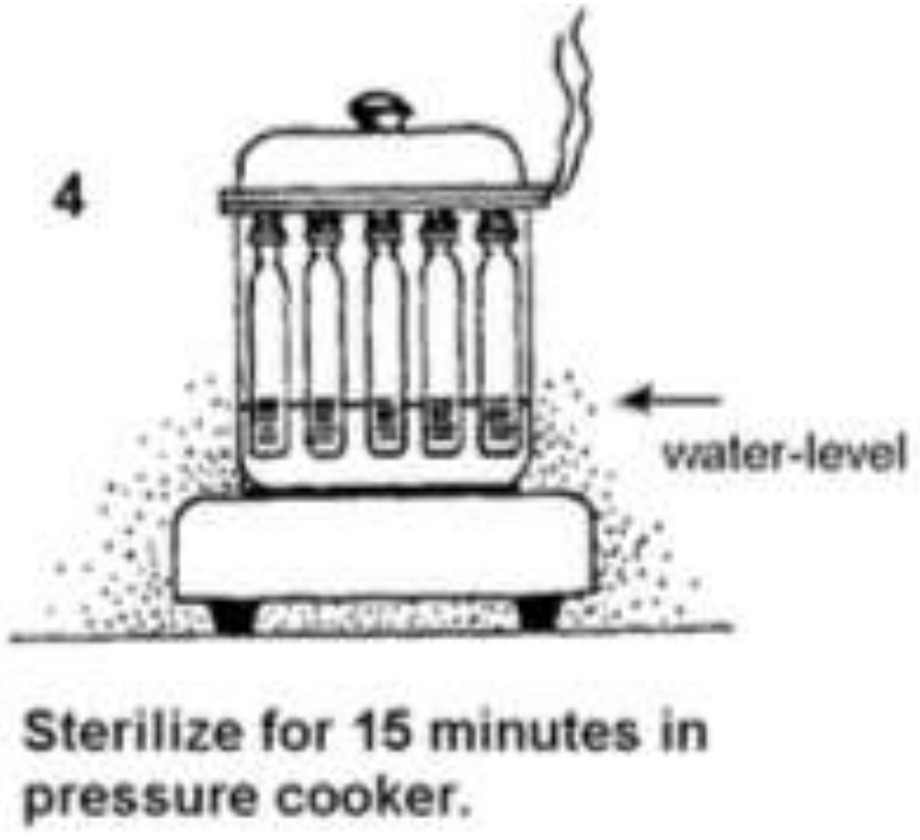



# The inoculated substrate is then transferred to grow bags.

**Cost: $0.39 each in bulk (1000 bags)**

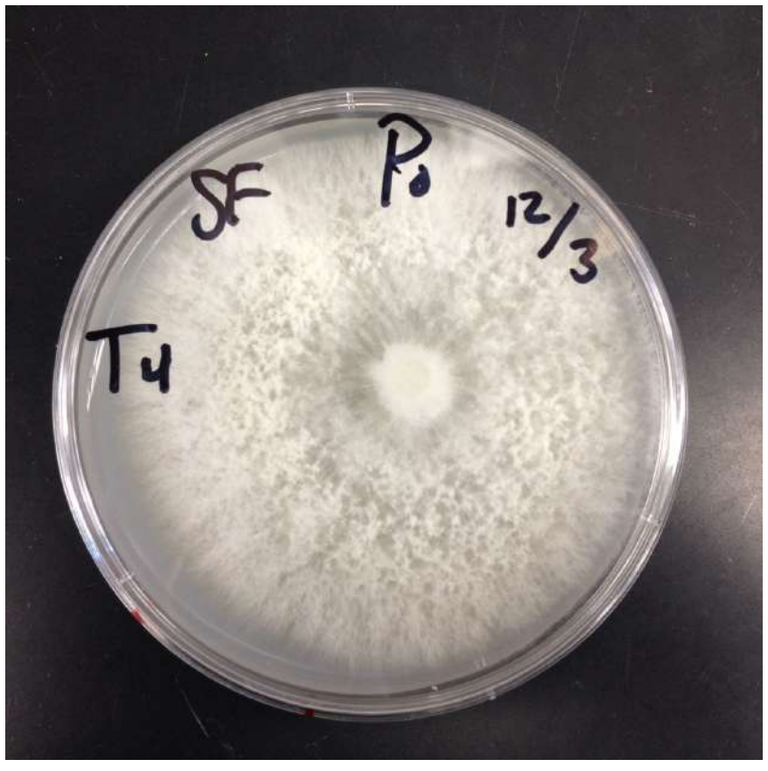
# Further Down The Rabbit Hole: Microbiology

Tracing the line of culture further back requires an even greater deal of environmental control.




Media and containers can be sterilized at home in a pressure cooker.

Transfers from slants and cultures can then be performed using some of the methods we practiced earlier in the workshop.




# Scaling Up: From Low to High Tech

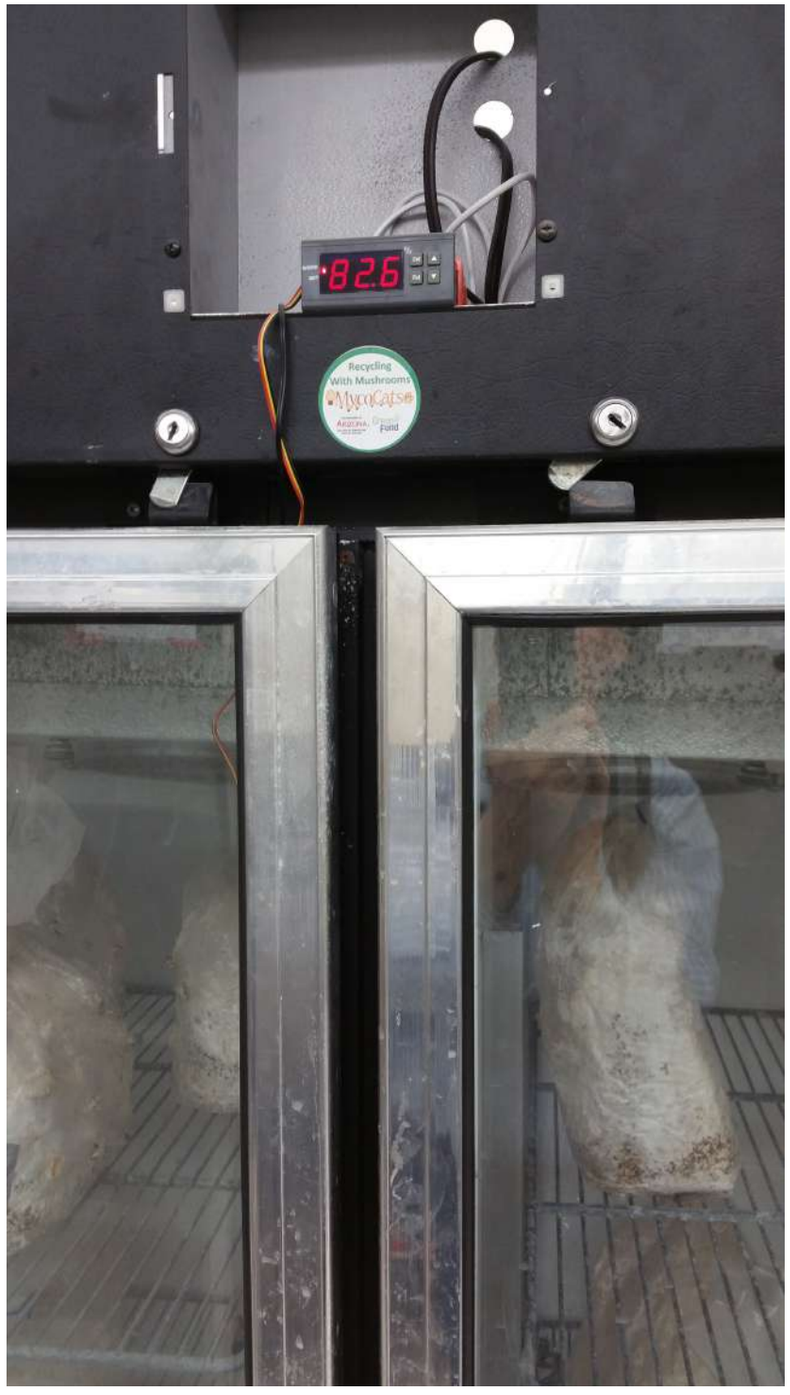
Regardless of the scale at which you are fruiting mushrooms, the same core principles hold true.

On the smallest possible scale:

# A little more complicated: on-campus grow chamber.


# A Wider View

Regulating temperature and humidity.




Monitoring temperature and humidity.

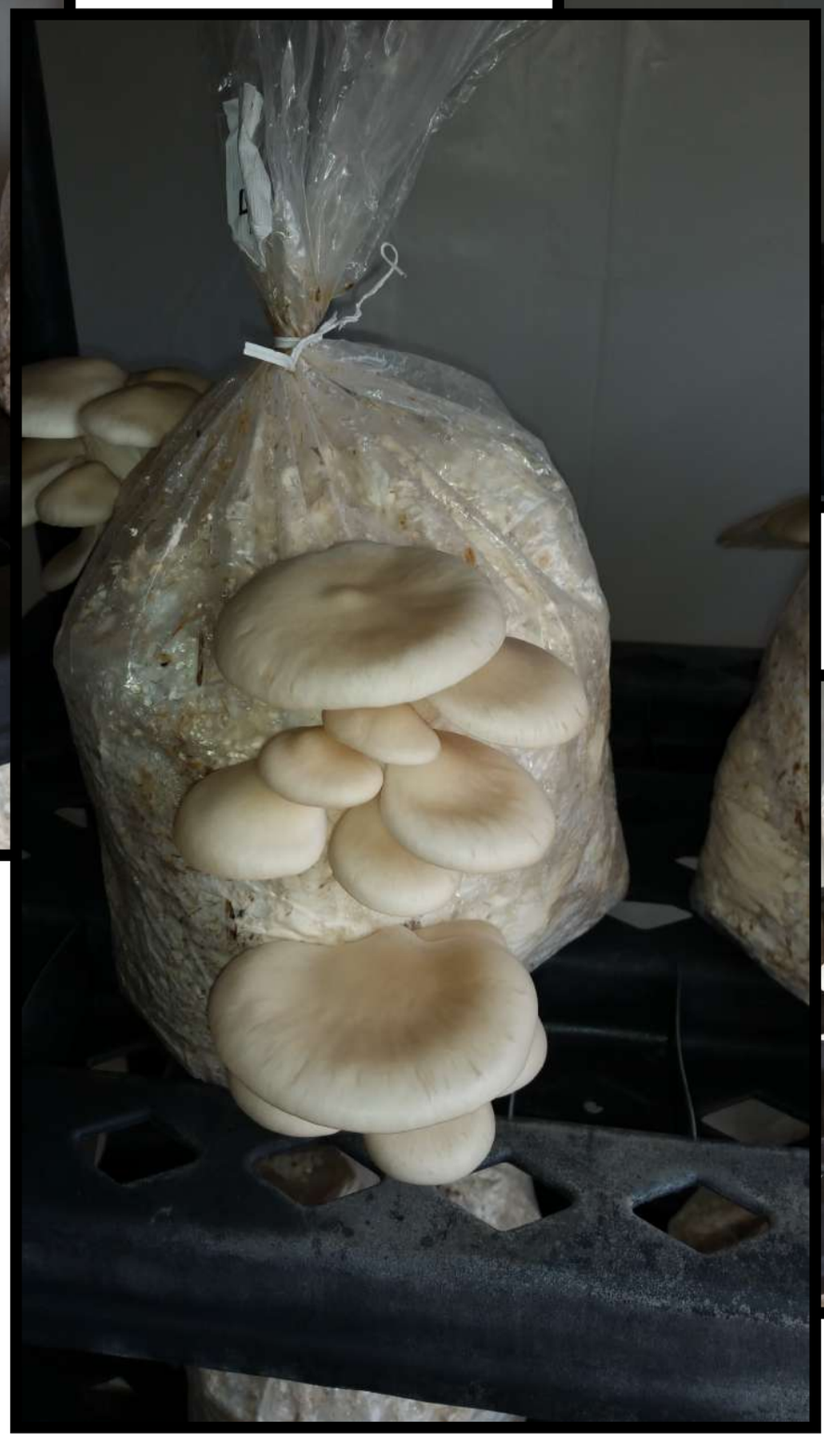
# Another step up in complexity: The Tucson Village Farm fruiting shed:


$1200

# A Tour:

# Solar-Powered temperature control and water pressure-powered humidity control.

# Simple but successful!



# Further Along: The MycoCats Hoop House.

# The Wet Wall

# Humidity Control

The inside view:

# How much can I make?

528 $ft^2$ footprint

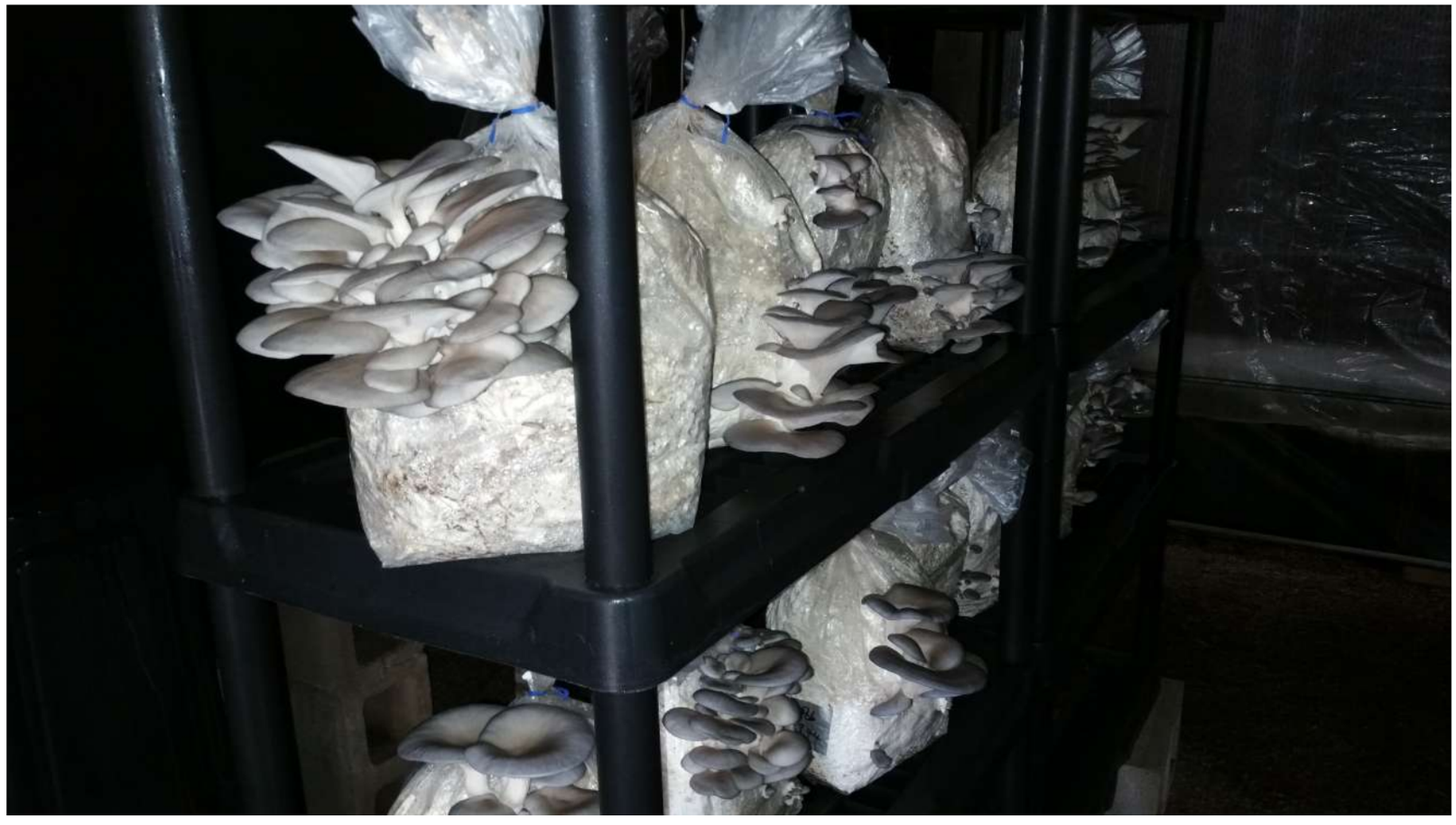
At 100% Bioefficiency, we can produce **3,840** lbs. per year.

Wholesale: ($6 lb.) = $23,040 gross

Direct: ($12 lb.) = $46,080 gross

Structure Costs: per square foot average cost of quonset-syle greenhouse: $13.09 (source: University of Nebraska Extension)
$13.09 x 528 $ft^2$ = **$6,911.52**

# More happy Oysters…



# Assessment Link

https://bit.ly/2GRszhC

Use your smartphone to access our assessment survey online and save a piece of paper!

www.azmushroomgrowers.org