



Indoor Mushroom Production and Marketing

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I do not like to take notes.

I would much rather be involved, and devote my attention to seeing what is going on. If you like to take notes, by all means, go ahead.

In that spirit, I will send an email copy of this presentation to anyone who wants one, free of charge. If interested, please contact me at . . .

allchinacresllc@yahoo.com

I will have my contact info up again on the last slide, and it will be up on screen until I leave.

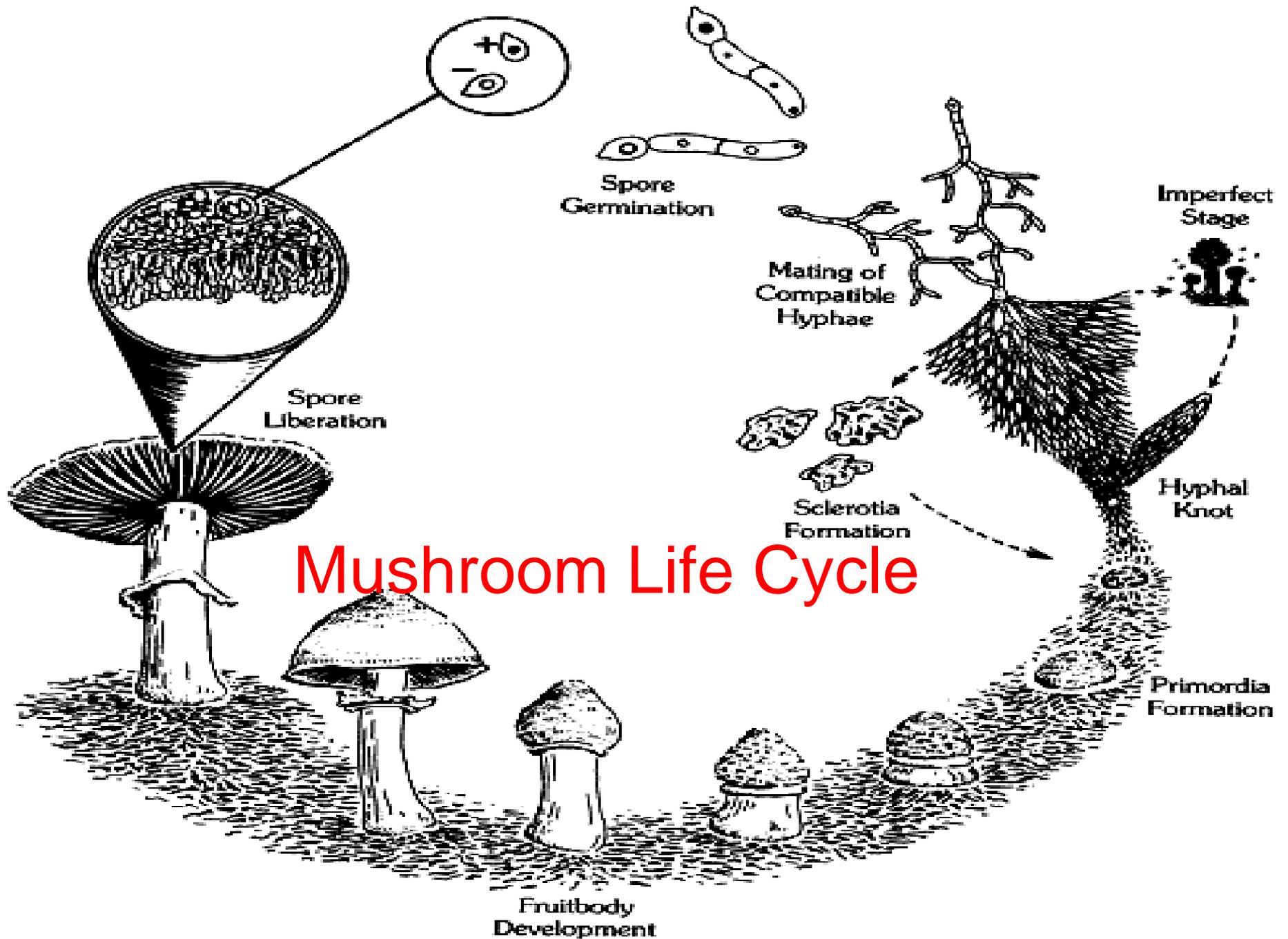
Overview

- Mushroom life cycle
- Definitions
- Making spawn
- Choosing & preparing substrate
- Pasteurization/Sterilization
- Inoculation
- Colonization

And, everyone's favorite . . .

- Fruiting
 - That's why you're all here, right?

4 lbs of oysters from a 3' straw log



Definitions

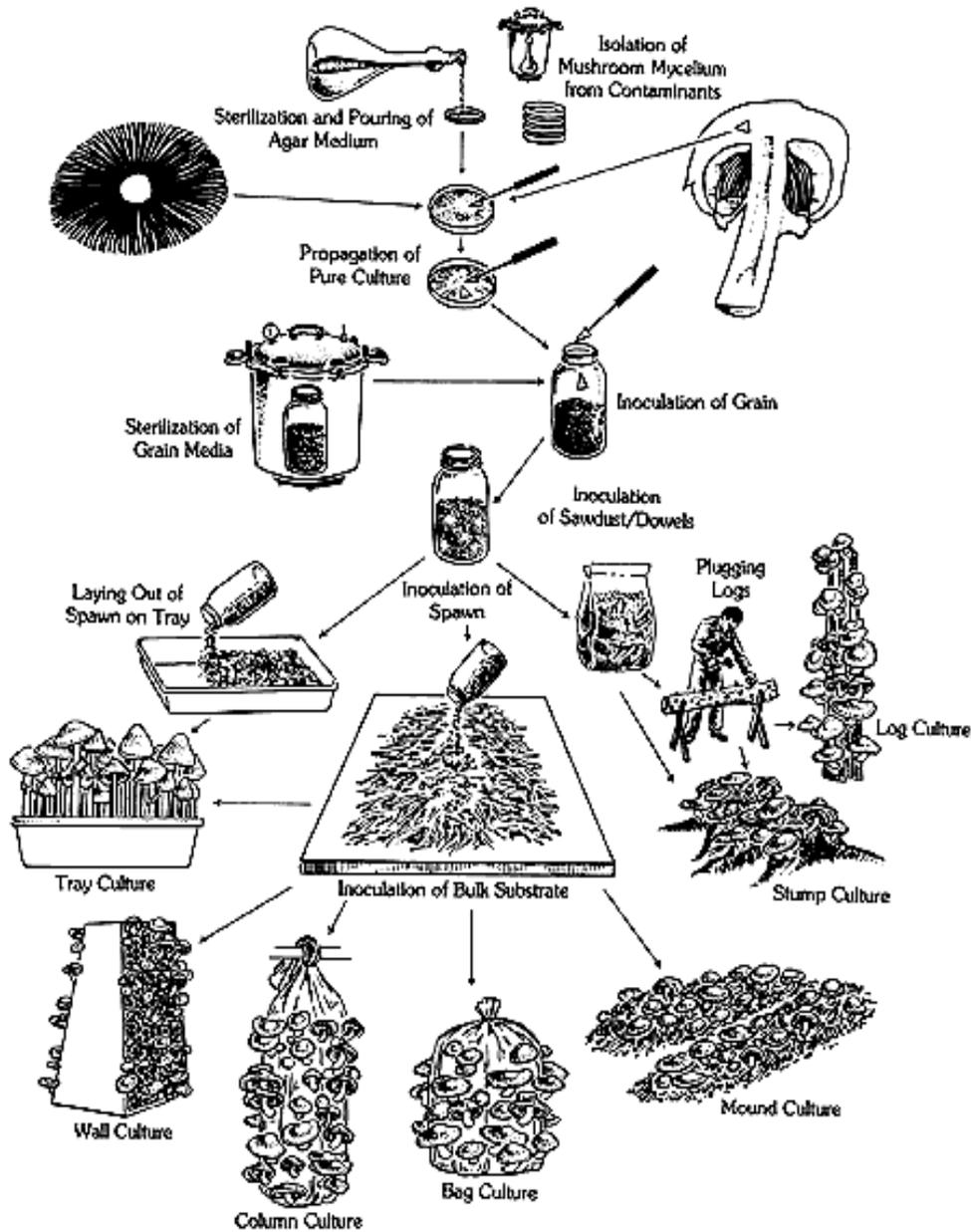
- Spore print: Mushroom spores, usually on wax paper, glass, or aluminum foil. Taken by allowing a mushroom to dry slightly in a draft-free environment (under an overturned glass).
- MSI (multi-spore inoculation): A mass of spores in liquid that is injected into its media. An MSI will yield unknown results due to competing strains within the same media.

Definitions, *cont.*

- **Strain/culture:** A specific combination of spores that yields desired results. These can be purchased in solid or liquid form.
- **Media:** What you will finally grow the mushroom culture out on (aka: substrate).
- **Spawn:** The intermediary point between the culture and the final substrate. Used to increase the contact points of the mushroom mycelium throughout the substrate.

Cultivation Overview

These are the steps to mushroom cultivation as provided by Paul Stamets...



And...here's how I do it!





The equipment

I have invested in a lot in equipment to keep things sterile in my workspace. This is the only hard part of growing mushrooms. As you will see, once spawn is colonized, you don't need to be very careful. There are less expensive ways, but this is something I wanted to try and make a home business out of.

The Equipment, *cont*



The Equipment, *cont*





Cultures in storage

I keep all of my master cultures below 44°F (6-7°C) to keep the growth slow. This insures that I can keep them going for a long time. Each time I need to make plates, I just take a small bit from a master tube.

Making Spawn



First, load up 8 cups of dry grain and fill the pot with water. Allow this to soak for 24 hours, then bring to a boil for about 10 min.

Making Spawn, *cont.*



Making Spawn, Con't.

Once the grain has been sterilized and cooled, it is ready for inoculation. I cut up bits of a clean, colonized, Petri dish and put it into the grain.

I impulse seal the bag closed, and put it in a warm dark place for colonization.



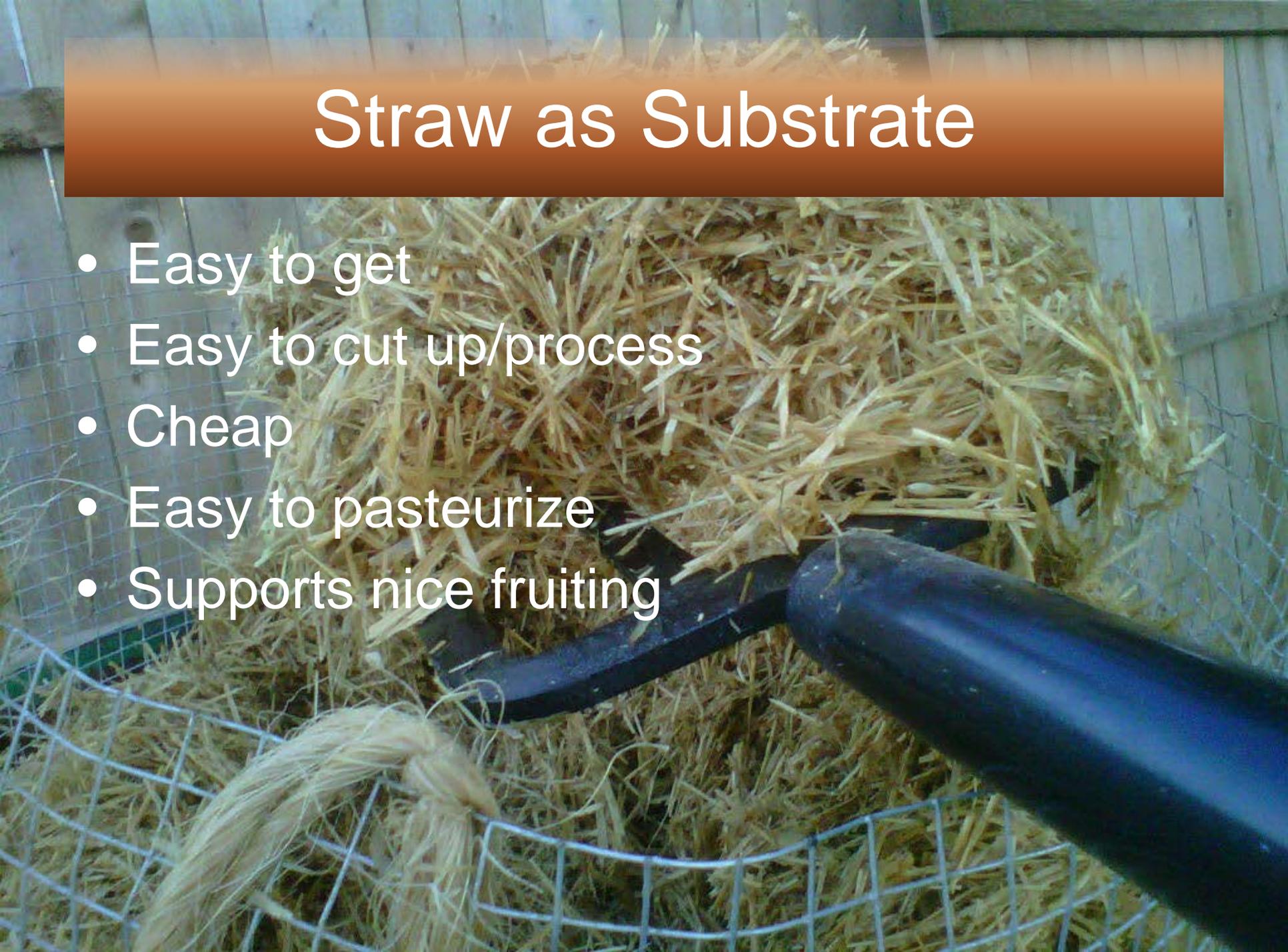
Choosing a Substrate

It is easy to choose a substrate if you think about a few things:

1. What will the mushrooms I want to grow fruit on?
2. What materials do I have access to?
3. How hard is it to process the substrate I want to use?
4. Is this cost-effective?

Straw as Substrate

- Easy to get
- Easy to cut up/process
- Cheap
- Easy to pasteurize
- Supports nice fruiting



Sawdust as Substrate

- Supports a wider range of mushrooms
- Fairly easy to mix in small batches
- Can be supplemented in the mixing process
- People are finding easier ways to use sawdust all the time.
- More nutrient content/more flushes

Preparing Substrate (Straw)

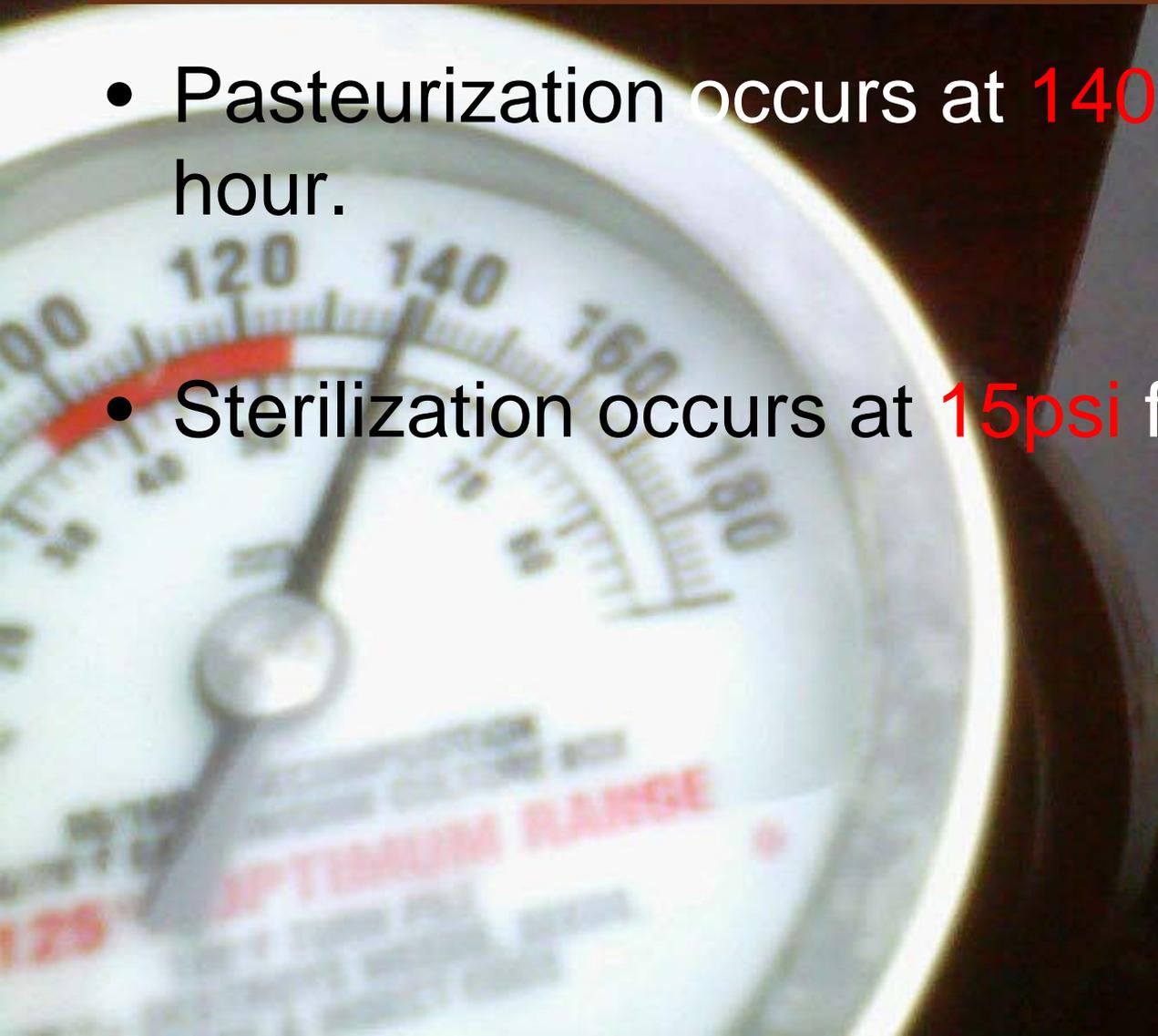


Preparing Substrate (Sawdust)



Pasteurization/Sterilization

- Pasteurization occurs at **140-160F** for an hour.
- Sterilization occurs at **15psi** for an hour.



Inoculation (Straw)



Inoculation, *cont.*



Inoculation, *cont.*



Inoculation, *cont.*



Inoculation, *cont.*

Once inoculated, the straw is bagged up. When the bags are full we just rubber band them off, or tie them shut, and poke holes in the bag to allow for gas exchange. These holes are also what the mushrooms will grow out of.



Inoculation (Sawdust)



Inoculation, *cont*



Colonization

Oyster mushroom growth parameters:

- 75-80°F (24-27°C)
- No CO₂ exchange needed within the room

Fruiting

Once colonized, you can do a few things to get your bags to fruit:

- Cool them
- Decrease CO₂
- Increase humidity
- Increase light



Fruiting, *cont.*



Misting system, 70% shade cloth, $\frac{3}{4}$ plastic lined "walls."

Fruiting, *cont*



Fruiting, *cont*



Fruiting, *cont*



Fruiting, *cont*



Marketing

- Talk to Chefs AHEAD of time.
- Start small, grow with demand. This goes for the size of your operation as well as the varieties you offer.
- Know your local market.
- Toughen up your skin/get ready for stupidity to ensue.
- Prepare to educate.

Marketing, *cont*

- People/Chefs LOVE visuals; take in a nice basket, 2-3lbs, one or two varieties, and a business card (any other pertinent information).

Warnings

- Spores do irreparable damage.
- Mushrooms mature QUICKLY. Big time commitment.
- Many Chefs in our region have limited experience with/availability to mushrooms; there may be a break-in period associated with buying.

Please Check Out

<http://www.mushroomvideos.com/>

Very cheap DVD that covers a LOT of basic steps on which to build.

Web site shows build out of his shipping container grow room.



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