

Yeast Banking

What?

Storing your own library of yeast and / or re-using yeast.

Why?

- Cost
- Selection / Variety
 - Store special releases
 - Not limited to local store selections
 - Weather / shipping not an issue

Methods:

Harvesting Yeast Cakes

What? Using yeast leftover from beer production

How? Transfer yeast cake to sanitized container and store ~35-40°F up to 6-8 weeks.

Pro's: Simplest method with largest yeast count.

Con's: Increased risk of contamination and mutation.

Agar Media

What? Storing yeast on slants or petri dishes

How? Yeast is streaked on media and allowed to grow, then stored ~35-40°F for up to 12-18months

Pro's: Visible cultures means contaminants are usually visible. Easy to maintain and re-slant cultures to extend lifespan. Easy to trade yeast.

Con's: Add'l equipment required, multi-step starters required. Prep work to make slants. Time commitments

Iso-Tonic Solution

What? Store yeast in 0.9% NaCl solution

How? Add yeast to sterile salt solution, then store at ~35-40°F for up to 18-24 months.

Pro's: Simple methods with long viability

Con's: Add'l equipment required, multi-step starters required. Contaminants invisible.

Freezing Yeast

What? Storage in liquid media + glycerin

How? Yeast is stored in a glycerin solution at 0-5°F for up to 5 years. Yeast stored at cryogenic temps (<-80°F) can be stored indefinitely.

Pro's: Longest, most stable yeast bank method.

Con's: Most labor intensive, Frost-Free freezers greatly reduce viability. Multi-step starters required (including thawing).

How-to:

Agar Slants:

Tube Prep:

400ml Water

35g Dried Malt Extract (DME)

1 tsp AGAR AGAR powder

Yeast Nutrient (optional)

- Dissolve above on stove (be sure it fully dissolves!)
- Add to screw top, autoclavable test tubes (1/3-1/2 full)
- Place test tubes in pressure cooker, bring to a boil for 10 minutes, then add weight and cook at 15psi for 10 minutes
- Once removed from pressure cooker, place at an angle, cover with sanitized foil and allow to cool completely
 - Tip: Allow to dry for 48 hrs before screwing cap on tightly, keeping covered through process.

Yeast Streaking:

- Use a flame to sterilize the inoculating loop
- Allow to cool, then dip loop in yeast culture
- Smear loop along surface of Agar media
- Re-flame and repeat for as many slants as desired
- Leave slants in a warm area with caps loosely attached for 2-5 days and observe for yeast colony growth. If no contaminants observed, screw cap tightly, tape and store in refrigerator

IsoTonic Solution:

- Dissolve 9g non-iodized table salt to 1L distilled / RO water
- Add to autoclavable test tubes
- Sterilize in pressure cooker as above.
- Add 1mL yeast slurry per 5mL isotonic solution
- Store in refrigerator.

Reanimation from storage:

- Initial starter step: 100mL 10°P wort, Sterilized in pressure canner preferably!
- Scrape yeast from slant with flamed inoculation loop or add 1mL from isotonic solution (shake first)
- Allow yeast to grow several (up to 7) days then step to 1L volume.

Yeast Banking

Tips

- Use healthy viable yeast! Fresh is best!
- Prep Starter wort ahead of time in pressure canner, Starter wort can be made ahead of time, but must be canned with a pressure canner to sterilize the wort and prevent spoilage. (15psi - 250F for 10 minutes)
- Use a variety of mason jar sizes to minimize waste.
- Appropriate strength wort can be made with about .75 cup DME per quart (100g DME per liter)
- Label individual test tubes with yeast type, date, and generation #.
- Limit yeast generations to 3-5 to minimize mutations.
- Mixed species cultures don't store well due to differing growth rates.
- 0.9% Saline Solutions are often used in the medical field and *may* be able to found readily.
- Once sterilized in pressure canner, unused slants, isotonic solutions and canned wort may be stored at room temp.

Resources:

<https://eurekabrewing.wordpress.com/yeast-cultivation/>

http://braukaiser.com/wiki/index.php?title=Making_Plates_and_Slants (currently down)

Yeast: The Practical Guide to Beer Fermentation

(*Brewing Elements*) by Chris White and Jamil Zainasheff

<http://www.homebrewtalk.com/f163/slanting-yeast-133103/>

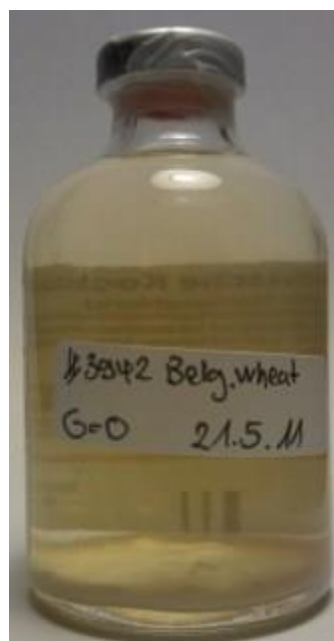
<http://brewiki.org/Yeast/Culturing>

<http://www.unm.edu/~draper/beer/slantuse.html>

<http://www.maltosefalcons.com/tech/yeast-propagation-and-maintenance-principles-and-practices>



Yeast Slant



Isotonic Solution