

REPITCHING USING DRY YEAST

Re-pitching yeast is an effective method to reduce the cost of yeast per brew. Lallemand Premium Brewing yeast has the high viability and purity required for re-pitching. However, producing a consistent product from each successive fermentation is a significant challenge to the brewer.

YEAST HARVESTING BEST PRACTICES:

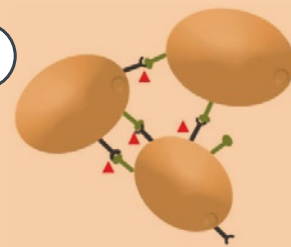
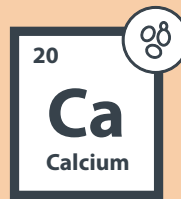
KEEP GOOD RECORDS

Record the original lot number, generation number, fermenter source for harvest, storage vessel number, viability, pitch rate, fermentation time, attenuation and microbiology results.



ENCOURAGE FLOCCULATION

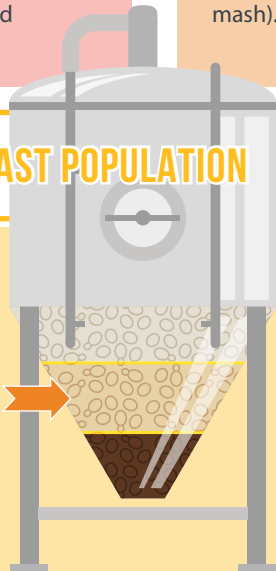
Choose a flocculent strain and promote flocculation by addition of calcium (50-150 ppm in the mash).



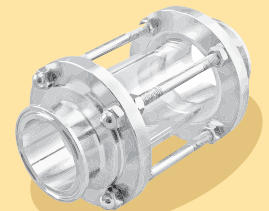
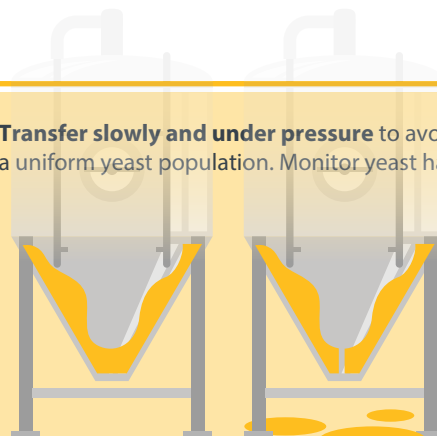
Y Zymolectin Protein (mannose specific)
 M Mannose
 Ca²⁺ Calcium

HARVEST HEALTHY YEAST POPULATION

Purge the bottom of the cone (dark brown slurry) every 24-48 hrs to remove early flocculating cells and trub. **Harvest yeast from the middle of the cone** (creamy, light brown yeast) within 24 hrs of reaching terminal gravity. **Avoid harvesting the top of the cone**, which contains slow fermenters and mutated cells.



Transfer slowly and under pressure to avoid cone slippage and ensure a uniform yeast population. Monitor yeast harvest using a **sight glass**.



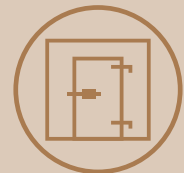
TEST YEAST VIABILITY, VITALITY AND PURITY

Assess yeast viability using a microscope and viability stain (i.e. methylene blue or trypan blue). Perform vitality test, e.g. acidification power. Test for contamination of bacteria and wild yeast according to standard QC protocols.



STORAGE

Cool yeast storage vessel rapidly to 4°C for storage up to one week. Avoid air ingress and excessive CO₂ pressure during storage.



YEAST PITCH



The amount of slurry required for yeast pitch **will depend on the viability and cell density**. Volume can be determined based on the volume of the yeast brink or storage vessel or by **using a flow-meter** designed for dense liquids.



If pitching by weight, the yeast density (% solids) may be assessed using **ASBC method Yeast-5**.

REPITCHING USING DRY YEAST

	DRY YEAST ADVANTAGE	CHALLENGES	RE-PITCHING SOLUTIONS
DOSING	<ul style="list-style-type: none"> - Stable viability - Simple pitching by weight without cell count. 	Pitch rate depends on viability and cell density	Ensure consistent pitch rate by performing a cell count with a microscope and viability stain.
CONSISTENCY	<ul style="list-style-type: none"> - Highly stable - Fermentation is always consistent for first generation pitch. 	Vitality decreases after several generations.	<ul style="list-style-type: none"> - Follow yeast harvesting best practices. - Use Go-Ferm Protect Evolution to maintain vitality or to rescue yeast from sluggish fermentations (Figure 1)
		Vitality decreases over storage period	<ul style="list-style-type: none"> - Follow yeast storage best practices. - Perform vitality test before pitching, e.g. acidification power; slurry pH (increase indicates autolysis)
		Lower vitality for yeast harvested from high gravity, heavily hopped or sour beers.	<ul style="list-style-type: none"> - Avoid re-pitching from beer >8% ABV, >60 IBU or heavily dry-hopped beers - Avoid re-pitching from all sour beers
PURITY	High stability facilitates in-depth QC testing to ensure high purity	Bacteria and wild yeast may outcompete the brewing strain after several generations	<ul style="list-style-type: none"> - Acid wash yeast to inhibit bacteria - Perform normal bacteria and wild yeast QC on harvested yeast prior to re-pitch
AERATION	Dry yeast contains all nutrients required for cell division without aeration	Aeration is critical	Ensure proper aeration of wort to 8-10 ppm dissolved oxygen when using re-pitched yeast (>10ppm for higher gravity wort)
TIMING	Dry yeast is always ready to use	Fresh yeast supply depends on production schedule	<ul style="list-style-type: none"> - Only re-pitch strains used regularly to avoid long storage times - Keep dry yeast on hand for emergency; use if propagated yeast is compromised
VARIETY	Can easily use multiple strains to brew a variety of different beer styles	Difficult to manage yeast supply when re-pitching multiple strains	<ul style="list-style-type: none"> - Limit the number of strains maintained through re-pitching - Use dry yeast for less frequently used strains or seasonal one-offs

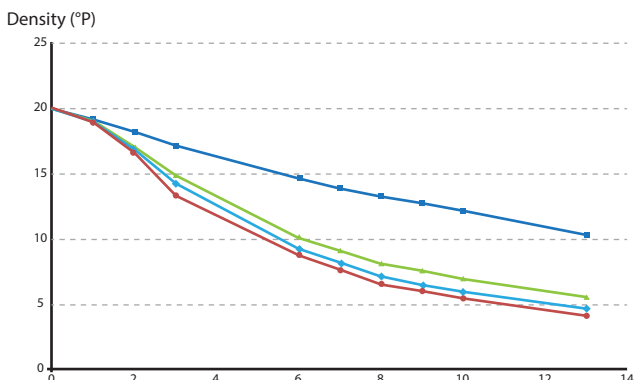


Figure 1
RECOVERY OF POOR FERMENTATION PERFORMANCE

Fermentation temp. 12°C
Pitching rate 5g cream yeast/L

- control
- ▲ high sterol yeast (inactivated)
- GoFerm Protect
- ◆ control + GoFerm (recovery)

Days

Re-pitching yeast without nutrients results in sluggish fermentations after four generations (control, dark blue) compared to similar fermentations re-pitched using inactivated high sterol yeast (green) or Go-Ferm Protect (red). Addition of Go-Ferm Protect is able to recover performance from a sluggish fermentation (light blue). Fermentations were performed using dry lager yeast at 12°C in high adjunct wort (to induce stress).

References:

- <https://scottlabsltd.com/en-us/go-ferm-protect-evolution-98--gofermpe?returnurl=%2fen-us%2fsearch%3fq%3dgoferm>
- <http://methods.asbcnet.org/methods/Yeast-5.pdf>

