



BEST PRACTICES

# PROPAGATION FROM DIAMOND DRY YEAST

## PROPAGATION PURPOSE

To produce biomass that is not stressed, that is highly viable (>95%), vital (active) and free of contamination. Oxygen is key since we are looking for cell division rather than alcohol production. Sanitation is primordial to make sure the culture remains pure.

**If you don't currently propagate:** the economics of propagating yeast needs to be counterbalanced with the increased risk of contamination associated with the propagation step(s).

**If you currently propagate:** using dry yeast will save you the first few steps of propagation in the laboratory and lower your risk of contamination.

## WHAT YOU NEED

- Packs of Diamond lager yeast 11g or 500g
- A sanitized vessel twice the size of the volume you want to propagate
- Go-Ferm rehydration nutrient
- Antifoam
- Sterile Aeration/oxygenation supply

## PROCEDURE

- This procedure is based on a pitching rate for lager beer of 1.5 million cells per mL per Plato degree.
- The propagation yield is ~200 million cells per mL of propagation broth. A propagation volume of 5-10% of the intended brew volume is recommended to provide enough cells to pitch the beer.
  - For example, a 10hL brew requires a propagation of 50-100L.
  - At 200 million cells per mL, a 100L propagation yields  $2 \times 10^{13}$  total cells, which gives 20 million cells per mL when pitched into a 10hL brew.

BREW VOLUME	10HL	100HL
OG	12°P	12°P
Ideal pitch rate (1.5 million cells / mL / °P)	18 million cells per mL	18 million cells per mL
Propagation volume (5-10% of brew volume)	50-100L	500-1000L
Propagation pitch rate (1g/L)	50-100g Diamond (5-10 11g sachets)	500-1000g Diamond (1-2 packs of 500g)
Total yield from propagation	$1-2 \times 10^{13}$ viable cells (100-200 million cells per mL)	$1-2 \times 10^{13}$ viable cells (100-200 million cells per mL)
Pitch rate from propagation	10-20 million cells per mL	10-20 million cells per mL

## HOW TO INOCULATE A 10HL BREW WITH 20 MILLION CELLS PER ML

- YEAST REHYDRATION**  
Rehydrate according to instructions on the package or technical data sheet. For better results, add Go-Ferm\* (30g/hL of propagation) to 20x its weight of sterile water at 43°C, stir well, let cool to 30-35°C and use this mixture to rehydrate the yeast.
- YEAST INOCULATION**  
Add rehydrated yeast to 50-100L of wort at 12°P
- YEAST PROPAGATION**  
24h at 18-20°C with aeration at 1-1.2LPM/L
- DECANT**  
Decant the propagation media and resuspend in sterile water
- QUALITY CONTROL**  
Perform a cell count to confirm the yield and viability. Normal results are 100-200 million cells per mL at >95% viability.
- FERMENTATION**  
Inoculate in 10hL of wort to obtain an average concentration of 20 million cells per mL

\* Yeast rehydrated with Go-Ferm produces yeast that is more vigorous and finishes fermentation 1-2 days earlier than beers inoculated with yeast non-rehydrated or rehydrated without nutrients.

