YEAST REHYDRATION

Best Practices Series #2

Targets

To achieve high ethanol content, good kinetics and/or a good congener profile, healthy and strong yeast is needed. Yeast rehydration plays a key role to achieve these goals.

Features of Yeast Rehydration

In the production of a stable dry yeast, water is removed, leaving less than 8% in the final packaged product. This level of water is not sufficient for active metabolism so the yeast must be rehydrated before use. If rehydration is not done properly, the fermentation can be significantly impacted with risks of a longer lag phase, sluggish or stuck fermentation.

The rehydration phase can be divided into two stages:

- Rehydration of the cytoplasmic membrane. This membrane regulates the flux between the mash/wort and the interior of the cell where the biochemical reactions, so it is important to get a membrane healthy to work properly.
- Rehydration of intracellular constituents to get efficient biochemical synthesis.

Key Points to Consider for a Successful Rehydration

Make your yeast happy!

Yeast Dosage

Water

Temperature of Water

Duration

Stirring

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Lallemand Distilling Recommendations

Yeast Dosage

Adapt the dosage of the selected yeasts to the wort/mash to be inoculated. Increase the dosage in the following cases: contamination by wild yeast and/or bacteria and if you want to achieve high ethanol content. Lallemand Distilling recommends using the doses indicated on the Technical Data Sheets, or please contact your technical sales representative if you have any questions.

Water

Use potable water and not demineralized water. Do not use mash or wort at the beginning of rehydration or add sugar to the water: at this stage, the dry yeast is not ready to confront the aggressive conditions of the must (indigenous yeast, bacteria, pH, temperature, sugars etc.). They must be given to 'awaken' in water. Lallemand Distilling recommends to use a ratio 'Yeast to water' of 1:10.

Temperature of Water

The temperature during rehydration is very important. Below 30°C, the cell membrane is damaged resulting in the loss of certain internal components and a decrease in the fermentative activity of the yeast. Temperature above 43°C has a negative impact on cell viability. Lallemand Distilling recommends rehydrating the yeast between 32°C-36°C. You will find specific recommendations on the Technical Data Sheets or please contact your technical sales representative if you have any questions.

Duration

Lallemand Distilling recommends to rehydrate the yeast for 15-20 minutes maximum. A minimum of 10 minutes is necessary. Add yeast to fermenter as soon as the rehydration step is complete.

Stirring

Lallemand Distilling recommends stirring the yeast gently during the rehydration step to remove lumps and keep suspended.
The visual appearance of the rehydration suspension is not necessarily a good indicator of cell activity.

Summary

Rehydration is a crucial step for the survival and the efficiency of yeast:

- Use the correct dosage of the selected yeast.
- Rehydrate the yeast with potable water only.
- Monitor the temperature between 32°C-36°C.
- Do not exceed 20 minutes.
- Gentle stirring should be done during the rehydration process.
- Use the preparation as soon as the rehydration is finished.

Regarding the usage and dosage of products, Lallemand Distilling recommends consulting local regulations to ensure you comply with your product category approved processing aids. Lallemand Biofuels & Distilled Spirits (LBDS) is proud to supply craft distillers with a "one stop shop" format.
Visit our website www.lallemanddistilling.com to find out more about our products or contact your local LBDS representative.