



SafSpirit™ R-4

A RELIABLE YEAST, ESPECIALLY IN TOUGH CONDITIONS SUCH AS LOW-GRADE SUGAR CANE MOLASSES.

SafSpirit™ R-4 is a reliable yeast strain designed to perform consistently well across a wide range of cane molasses. The quality of molasses can vary across countries, depending on various factors such as composition (mineral content, ash, unfermentable sugars, solids). Some yeast strains will struggle to ferment lower-quality molasses. In comparison to other strains, **SafSpirit™ R-4** shows its true potential in challenging conditions, and is able to produce high levels of ethanol even in molasses with several stress factors (high gravity, low pH, high temperatures). **SafSpirit™ R-4** generally produces neutral flavor profiles.

Ingredients:

Yeast (*Saccharomyces cerevisiae*), emulsifier: sorbitan monostearate (E/INS 491)

Fermentation of sugars:

Monosaccharides (primarily glucose and fructose) and disaccharides (primarily sucrose).

Fermentation temperature:

Recommended range: 25°C–35°C (77°F–95°F).

Dosage:

30-50 g/hL* (0.04 – 0.06 oz/gal)

* We recommend broad dosing ranges, but the distiller must adjust the dose according to the fermentation temperature, attenuation, and desired organoleptic profile. Given the impact of yeast on the quality of the final alcohol, we strongly advise users to carry out fermentation trials before our products are used commercially.

Pitching:

Direct inoculation

Sprinkle the active dry yeast directly onto the surface of the fermentation medium (must, wort, mash, juice, etc.) at or above the fermentation temperature. The yeast must be added progressively, ensuring complete coverage of the fermentation medium to avoid the formation of clumps as much as possible. Ideally, the yeast should be added while filling the first part of the vessel. It is possible to inoculate at temperatures above those selected for fermentation, providing that the temperature is then adjusted when the rest of the fermentation medium is added.

With prior rehydration

Alternatively, sprinkle the yeast into 10 times the volume of fermentation media or water at 25°C–35°C (77°F–95°F). Leave to rest for 15 minutes, gently stir, then inoculate the resulting homogeneous cream into the fermenter.



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Trials

Fermentis research has shown that **SafSpirit™ R-4** is a strong and reliable solution for fermenting a large range of sugar cane molasses of variable qualities. **SafSpirit™ R-4** shows significantly better performance in stressful conditions compared to other yeast strains.

Interval Plot of Ethanol (%v/v)

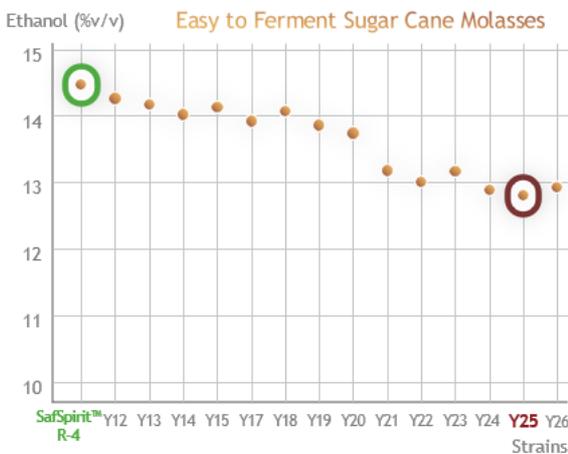


Figure 1: Comparison of alcohol production by different yeast strains on easy to ferment sugar cane molasses.

Interval Plot of Ethanol (%v/v)

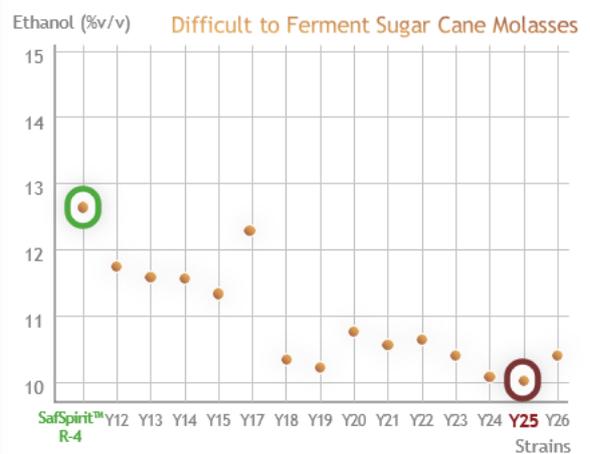


Figure 2: Comparison of alcohol production by different yeast strains on difficult to ferment sugar cane molasses.

Ethanol production depending on sugar concentration (g/kg)

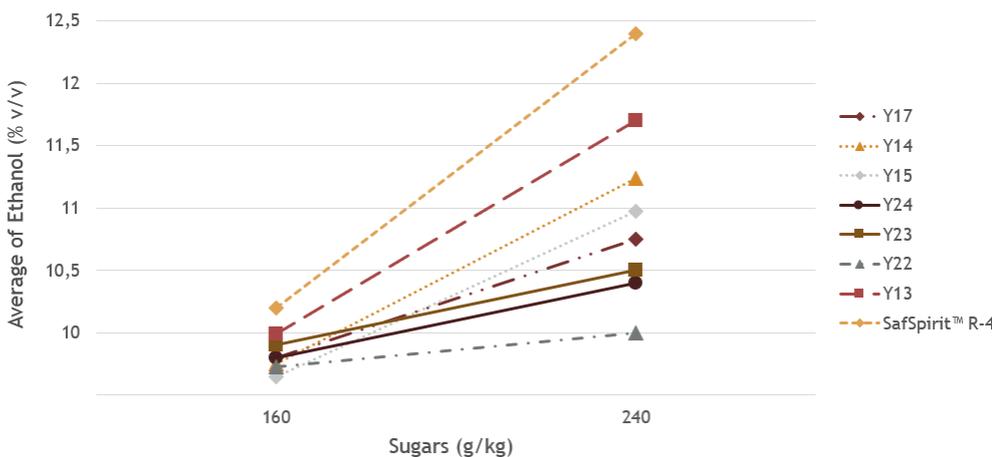


Figure 3: Comparison of alcohol production of different yeast strains depending on the sugar concentration.

Moreover, considering its good performance on stressful conditions with high sugar concentration, **SafSpirit™ R-4** is a suitable solution to ferment sugar cane molasses at intermediate and high gravity.

The performance has been measured at pH levels between 3.8 to 5.0.



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Typical Analysis:

% dry weight: 94.0-96.5%

Viable cells: > 15 x 10⁹ CFU/g

Total bacteria: < 1 CFU/10⁷ yeast cells

Acetic acid bacteria: <1 CFU/10⁸ yeast cells

Lactic acid bacteria: <1 CFU/10⁷ yeast cells

Pathogenic micro-organisms: in accordance with regulation

Packaging:

Cardboard box of 20 vacuum-packed sachets of 500g/1.1 lb each (Full box net weight: 10 kg/22.05 lb)

Cardboard box of 1 vacuum-packed 10kg/22.05 lb (Full box net weight: 10kg/22.05 lb)

Storage:

The product must be stored/transported in dry conditions and protected from direct heat sources (e.g., sunlight, etc.).

The product can be stored/transported at ambient temperatures below 25°C/77°F for up to 6 months without affecting its performance. Peaks up to 40°C/104°F are allowed for a limited period (less than 5 days). For prolonged storage times (beyond 6 months) after the product has arrived at its final destination, Fermentis recommends storage at a controlled temperature (below 15°C/59°F).

Shelf life:

4 years from the production date. Refer to the best-before end date printed on the sachet. Opened sachets must be sealed and stored at 4°C/39°F and used within 7 days of opening. Do not use soft or damaged sachets.

Each Fermentis yeast is developed under a specific production scheme and benefits from the know-how of the Lesaffre Group, world leader in yeast manufacturing. This guarantees the highest microbiological purity and maximum fermentation activity.

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