



WINDSOR

NATURAL BREWING YEAST

Ale Yeast
KOSHER
GMO FREE

Saccharomyces cerevisiae

1. Origin

Windsor English Ale yeast originated in the United Kingdom and is used by a number of commercial breweries to produce different types of ale. The propagation and drying process have been specifically designed to deliver to the end user a high quality beer yeast that can be used simply and with reliability to help produce ales of the finest quality. No colours, preservatives or other unnatural substances have been used in its preparation. The yeast is produced in ISO 9002 approved plants.

2. Microbiological Properties

- Classified as *Saccharomyces cerevisiae*.
- A top fermenting yeast.
- The active dried strain has a typical analysis per gramme:

Percent solids	93 – 95 %
Living yeast cells	$\geq 7 \times 10^9$
Wild yeast	$< 10^3$ (Lysine method)
Bacteria	$< 10^5$ (0.01% of yeast)
- Finished product are only released to the market after passing a rigorous series of tests.

3. Brewing Properties

- Quick start and vigorous fermentation, which can be completed in 3 days above 17°C.
- Moderate attenuation, which will leave a relatively high gravity.
- Fermentation rate, fermentation time and degree of attenuation is dependent upon inoculation density, yeast handling, fermentation temperature and the nutritional quality of the wort.
- Windsor is a non flocculent strain but some settling can be promoted by cooling and use of fining agents and isinglass.
- The aroma is estery to both palate and nose and is usually described as full-bodied, fruity English ales. It does not display malodours when properly handled. Windsor yeast has found great acceptance in producing strong tasting bitter beers, stouts, weizen and hefe weizen.
- Windsor strain is best used at traditional ale temperatures after re-hydration in the recommended manner.

4. Usage

- When 100 g active dried yeast is used to inoculate 100 litres of wort a yeast density of 7 – 15 million cells per millilitre is achieved. A brewer may experiment with the pitching rate to achieve a desired beer style or to suit processing conditions.
- Sprinkle the yeast on the surface of ten (10) times its weight of clean, sterilised (boiled) water at 30 - 35°C. (NB: Do not use wort or distilled or reverse osmosis water as loss in viability will result). DO NOT STIR. Leave undisturbed for 15 minutes then suspend the yeast completely and leave it for 5 more minutes at 30 - 35°C. Then adjust temperature to that of the wort and inoculate without delay.
- Temperate in steps at five minute intervals of 10°C to the temperature of the wort by mixing aliquots of wort. Do not allow attemperation to be carried out by natural heat loss. This will take too long and could result in loss of viability or vitality.
- Temperature shock, greater than 10°C, will cause formation of petite mutants leading to long term or incomplete fermentation and possible formation of undesirable flavours.
- Windsor Ale yeast has been conditioned to survive rehydration. The yeast contains an adequate reservoir of carbohydrates and unsaturated fatty acids to achieve active growth. It is unnecessary to aerate wort.

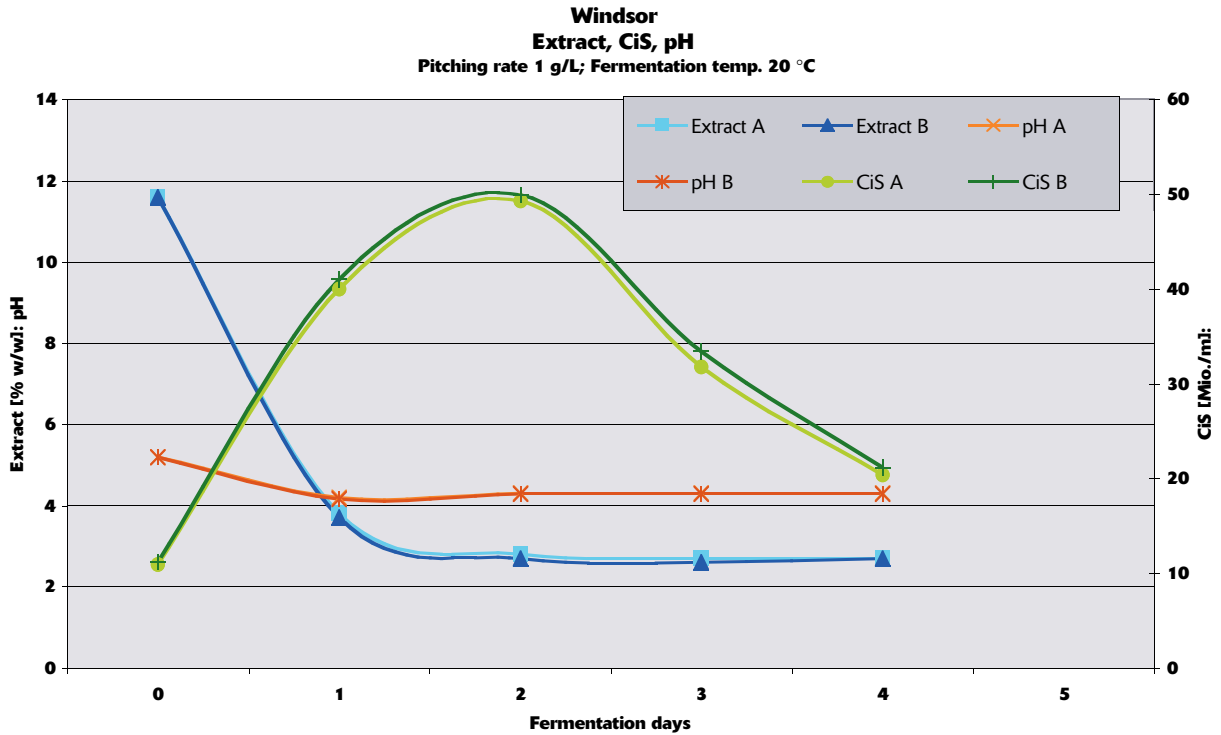
5. Storage

- All active dried yeast should be stored dry and below 8°C. The packaging should remain intact.
- Activity loss is about 25 % per year at 8°C and 50 % per year at 22°C in unopened sealed packs.
- Windsor will rapidly lose activity after exposure to air. Do not use 500g or 10kg packs which have lost vacuum. Opened packs must be re-closed, stored in dry conditions at less than 4°C and used within 3 days. 11g sachets are not vacuum packed but are flushed with nitrogen gas to protect the yeast.
- Do not use yeast after the expiry date which is printed on the pack.

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LALLEMAND DANSTAR NATURAL BREWING YEAST

- SO EASY TO STORE** – Active Dried Brewing Yeast has two years shelf life stored below 8° C
- SO EASY TO USE** – Follow simple re-hydration instructions and addition rates
- SO VERSATILE** – Suitable for many beer types....
"I use the same Danstar yeast strain in eight different ales".
Douglas Ross, Bridge of Allan Brewery, Scotland.
- SO SUCCESSFUL** – "I am delighted to endorse Danstar yeast".
Graham Trott, Triple FFF Brewery, Alton, England, Double Gold Medal Winner, 2002 CAMRA champion beer of Britain competition.
- SO INTERNATIONAL** – Used in hundreds of breweries in Britain, USA, Canada, Japan, South America and Worldwide.



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