



JUICE

novozymes[®]
Food & Beverages

GET MORE FROM YOUR OLIVES WITH NOVOZYMES PECTINEX[®] ULTRA OLIO

Introduction

Olive oil has made a valuable contribution to human nutrition for more than 2000 years. As today's consumers are increasingly health conscious, the consumption of olive oil has steadily increased in recent times.

Get more out of your valuable olives with Novozymes' solutions. When your olives and harvest vary, Pectinex[®] Ultra Olio or Pectinex[®] Ultra SPL help squeeze out the most valuable oil while ensuring optimum quality, enhancing processing and reducing losses.

Benefits

- Improved production process
- Faster, more effective oil and water separation, leading to the smoother operation of machineries and equipment
- Increased oil yield - typically 5-10% or 10-20 kg more oil per ton of olives
- Less residual oil in the pomace
- Quicker, better oil clarification
- Works with all extraction systems
- No change in the oil quality

Product characteristics

Pectinex[®] Ultra Olio and Pectinex Ultra SPL are natural enzyme preparations produced by the fungus *Aspergillus*. The production

strains are not genetically modified, meaning that they are also suitable for organic olive oil processing.

Aside from the primary pectolytic activities, both solutions contain various side activities, including hemicellulases and cellulases. These enzyme activities are naturally present in small amounts in the olive cells and are responsible for the softening of the fruit during maturation.

How Pectinex[®] Ultra Olio and Pectinex Ultra SLP work

Inside the olive cell the oil is found in bigger droplets in vacuoles and in the form of small droplets in the cytoplasm.

When either solution is added to the milled paste or pomace, the enzymes break down the cell walls, liberating additional amounts of oil which would not be accessible during mechanical treatment alone. The solutions additionally destabilize the oil and water emulsion, facilitating easier oil separation.

Pectinex[®] Ultra Olio and Pectinex Ultra SPL also make olive processing more sustainable. The wastewater associated with the process is easy to biodegrade. As enzymes are processing aids and water soluble, they are not present in the final product.

Rethink Tomorrow

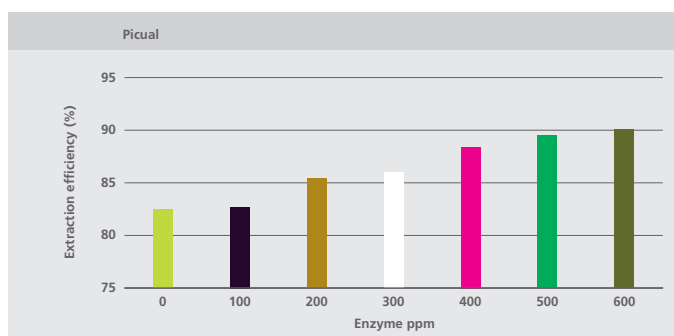
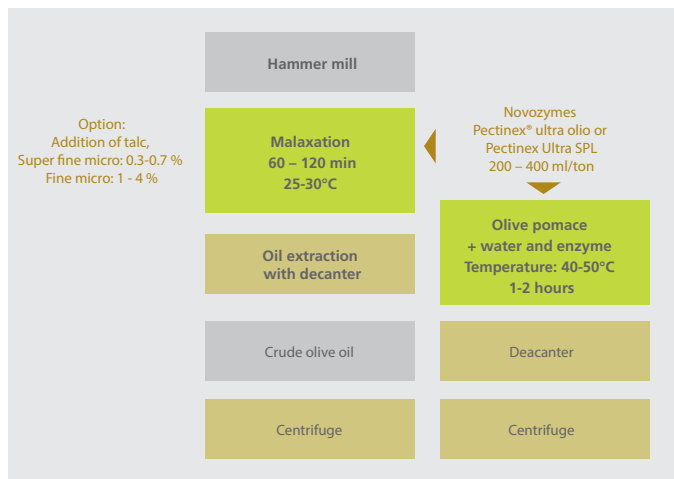


Fig.1: Impact on oil extraction efficiency with different enzyme dosages on Picual olives

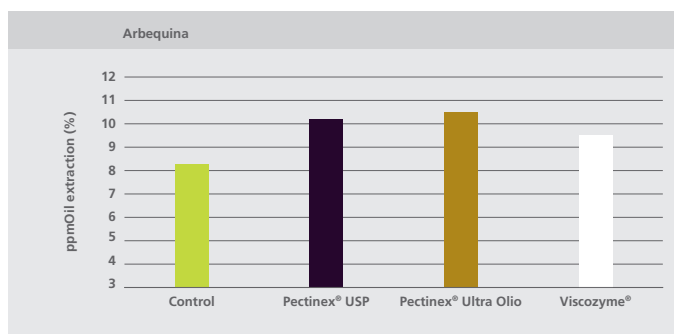


Fig.2: Results obtained with different Novozymes enzymes used at 300 ppm on Arbequina olives at maturity stage 1.5

Usage

In discontinuous lines, a diluted enzyme solution, if possible 10% in cold, clean tap water, is added directly into the mill, divided into 3-4 portions.

In continuous lines, the solution can be added either directly into the mill or into the first compartment of the malaxing unit. In this situation, the use of a simple dosing pump is recommended

Performance

The performance of the enzyme depends on factors including the local conditions, olive variety and moisture content. Dosages higher than 200 ml per ton of olives have been demonstrated additional benefits and improved performance. Trial results obtained with Picual olives and different enzyme dosages are shown below. Even at the highest enzyme dosage, the application and use remains economical and profitable.

Recommended storage: 0-10 °C

Packaging must be kept intact, dry, and away from sunlight. Please follow all recommendations and use the product before the best before date to avoid the need for a higher dosage.

More information and best before date

Please see more information on the Product Data Sheet (PDS). The best before data can be seen on the certificate of analysis (CoA) or on the product label

EU regulation

The European Regulation EC No 1234/2007 regulates in article 118 the olive oils and Annex XVI specifies and defines the olives oils and its production.



Novozymes is the world leader in bioinnovation. Together with customers across a broad array of industries we create tomorrow's industrial biosolutions, improving our customers' business and the use of our planet's resources.

For more information, please visit our Customer Center at www.novozymes.com. The site is exclusively for registered Novozymes customers and contains product and safety information, technical support, and a direct ordering system.

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