

# Enzyme Treatment

## Panzym<sup>®</sup> BE

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07/1997

### Special Enzyme for Processing of Berries

#### Description

Panzym<sup>®</sup> BE is a pectinase preparation for fruit juice production that was specially developed for processing soft fruit due to its color extraction and protection properties. The balanced range of pectolytic main activities and secondary cellulase and hemicellulase activities ensure efficient, highly economic processing of mash and almost complete degradation of colloids.

Panzym<sup>®</sup> BE is a clear, brown liquid with the typical odor of fermented products.

#### Application and Effect

Panzym<sup>®</sup> BE can easily be integrated into any processing technology due to its special activity spectrum. When used for berry mash, the berry structure is loosened without actual mashing, in line with requirements.

During this process, all valuable colors and other ingredients are released, and the yield of juice with low haze content is optimized. Flow of juice from the mash is facilitated, so that maximum press capacity can be achieved.

During enzyme treatment of berry juice, Panzym<sup>®</sup> BE ensures almost complete degradation of colloids far beyond normal depectinization.

In addition to fibrinous substances of plant colloids originating from microbial infection of the fruits are also broken down.

This increases the filtration capacity, leading to significant savings in filter material.

#### Dosage

In mash: 10 – 30 ml/100 kg (2 – 4 h at 50 °C)

In juice: 5 – 30 ml/100 l (1 – 2 h at 50 °C)

For mash enzyme treatment, the product should ideally be added to the tank after heating (not more than 50 °C) in portions via a metering pump or continuously in the mash line. For juice enzyme treatment, the product should be added to the first parts in the enzyme treatment tank.

The enzyme efficacy is temperature-dependent.

Optimum activity is achieved at 45 – 55 °C. The reaction speed decreases with decreasing temperature. While activity is maintained in principle, the effect is severely delayed. Panzym<sup>®</sup> BE is inactivated at temperatures > 60 °C and through contact with bentonite.

#### Safety and Purity

Panzym<sup>®</sup> BE complies with the FAO/WHO (JECFA and FCC) specifications for enzymes in the food industry. If used appropriately and processed correctly, application of the product involves no health risks.

#### Chemical Purity:

Heavy metals:	< 40 ppm (FCC)
Lead:	< 10 ppm (FCC)
Arsenic:	< 3 ppm (FCC)
Cadmium:	< 0.5 ppm (atomic absorption)
Mercury:	< 0.5 ppm (atomic absorption)
Aflatoxin:	undetectable (AOAC1970(26.018))

#### Microbiological Purity:

Total no. of cells/ml:	< 5 x 10 <sup>4</sup> (NFAG Bact. 1)
Mold/ml:	< 10 <sup>2</sup> (NFAG Bact. 2)
Enterobacteria/ml:	< 10 (NFAG Bact. 3)
E. coli/ml:	undetectable (NFAG Bact. 4)
Ps. aeruginosa/ml:	undetectable (NFAG Bact. 5)
Salmonellae/ml:	undetectable (NFAG Bact. 10/1)

Pectolytic activity is standardized to 3000 FDU 55 °C/ml. Descriptions of the analysis techniques and EC Material Safety Data Sheet are available on request.

Panzym<sup>®</sup> BE is filled aseptically following sterile filtration and is therefore virtually germ-free. It contains no preservatives.

#### Storage

Panzym<sup>®</sup> BE must be stored in a cool (< 5 °C) and dry place. Under these conditions, the declared activity is maintained for a minimum of 1 year. At storage temperatures of 20 °C the declared activity of Panzym<sup>®</sup> BE is maintained for a minimum of 3 months. After the respective period, activity is expected to decrease by 1 – 2 % per month. Once a package has been opened, it should be used up as soon as possible.

## Delivery Information

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1-liter PE bottle (BEGEROW article no. 9.5104010;  
12 1-liter PE bottles in carton)  
25-liter PE canister (BEGEROW article no. 9,5104250)  
HS customs tariff: 3507 90 90

## Certified Quality

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Panzym® BE is produced by NOVO NORDISK Ferment Ltd., Neumatt, 4243 Dittingen, Switzerland. During the production process, it is regularly monitored to ensure consistently high product quality. These inspections include technical functional criteria as well as safeness in accordance with relevant laws governing production of foods. Strict controls are additionally carried out immediately prior to and during final packaging.



Reg. No. 000480 QM

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