

**Enzyming****Panzym® YieldMASH XXL****Highly Effective Polygalacturonase/Pectinmethylesterase Combination for Mash Enzyming of Pomaceous Fruit**

Panzym YieldMASH XXL enzyme is a pectolytic enzyme preparation standardized on pectinmethylesterase. The product is a combination of surface and submers fermentation from *aspergillus* species.

The special combination of polygalacturonase and pectinmethylesterase in Panzym YieldMASH XXL enzyme results in:

- Fast and efficient pectin degradation
- Significant increase in press capacity; higher capacity for horizontal presses, belt presses, or decanters
- Wide activity range at low pH-level even as low as  $\text{pH} \leq 3.0$
- Broad temperature activity between  $< 59^\circ\text{F}$  ( $15^\circ\text{C}$ ) up to  $122 - 131^\circ\text{F}$  ( $50 - 55^\circ\text{C}$ )
- Broad activity range even at high polyphenol concentration
- Better filterability
- No over-maceration
- Pomace is suitable for pectin extraction

**Effect on the juice:**

- Low galacturonic acid concentration
- Low formation of methanol
- Product cannot produce cellobiose
- Lower release of colloids into the juice, therefore easier downstream processing (better filterability)
- The juice meets all relevant quality standards

**Application and Effect**

Panzym YieldMASH XXL enzyme was specially developed for enzyming of fruit mash.

Panzym YieldMASH XXL enzyme, applied to fruit mash results in a significant increase in capacity or solid/liquid separation (e.g. decanter, press) and higher juice yield.

The diluted enzyme solution (ideally 10% in cold tap water) is added directly to the mill or the mash tank, preferably by a dosing pump.

Panzym YieldMASH XXL enzyme is inactivated either in the flavoring system or during pasteurization.

**Dosage**

| Application            | Dosage<br>fl oz/long ton<br>(g/to) | Temperature<br>in °F (°C)/time        |
|------------------------|------------------------------------|---------------------------------------|
| Mash from fresh fruit  | 1.2 – 2.3<br>(50 – 70)             | 59 – 86 (15 – 30)/<br>30 – 60 minutes |
| Mash from stored fruit | 2.0 – 4.0<br>(60 – 120)            | 59 – 86 (15 – 30)/<br>30 – 60 minutes |

**Special Notes**

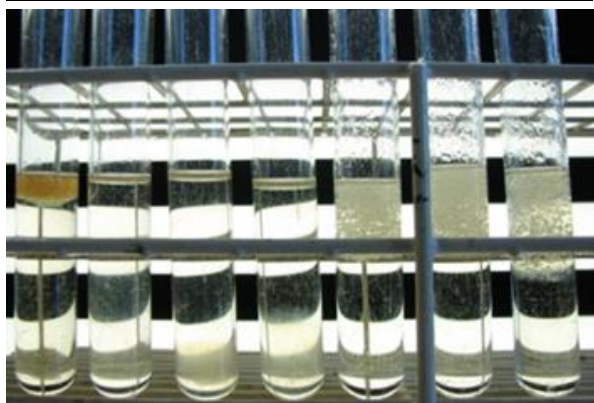
**Dosage:** Avoid stirring. The dosage strongly depends on the quality, type, degree of ripeness of the fruit, and the operating conditions.

**Holding time:** Enzymes need a certain amount of reaction time. Please ensure a minimum holding time of 30 minutes.

**Temperature:** The enzyme has wide temperature range ( $50 - 122^\circ\text{F}$  ( $10 - 50^\circ\text{C}$ )). However, higher mash temperatures above  $86^\circ\text{F}$  ( $30^\circ\text{C}$ ) are critical for the quality of the flavor and can lead to microbial problems within a temperature range of  $86 - 113^\circ\text{F}$  ( $30 - 45^\circ\text{C}$ ).



## Performance



Pectin test after mashing (apple mash), tube left to right:

|       |                             |
|-------|-----------------------------|
| No. 1 | control                     |
| No. 2 | Panzym YieldMASH XXL enzyme |
| No. 3 | reference                   |
| No. 4 | Panzym YieldMASH enzyme     |
| No. 5 | Panzym First Yield enzyme   |
| No. 6 | reference                   |
| No. 7 | reference                   |

## Safety and Purity

Panzym YieldMash XXL complies with the FAO/WHO (JECFA and FCC) specifications for enzymes in the food industry.

Panzym YieldMash XXL enzyme is produced with the aid of microorganisms, which are characterized as self-cloned according to EU definition. The microorganism is classified as not genetically modified based on

- EU Directive 2001/18/EC (the version currently in effect)
- The German Genetic Engineering Act (GenTG).

**The national legislation for other countries must be adhered to accordingly.**

Irrespective of the classification of the production organism, the Panzym YieldMash XXL enzyme is **not genetically modified**.

Panzym YieldMash XXL enzyme is filled aseptically following sterile filtration and is therefore virtually germ-free. Panzym YieldMash XXL enzyme is a brownish, liquid enzyme preparation that has the typical odor of fermented products.

Panzym YieldMash XXL enzyme is characterized as follows:

- Production organism: *Aspergillus niger*
- Specified activity: 3.7 PEU/g (Pectinmethylesterase)

When used as directed and handled correctly, there are no known unfavorable effects associated with this product.

**Further information on safety can be found in the Material Safety Data Sheet, which is available for download from our website.**

## Storage

The product should be stored with the packaging intact away from sunlight at a temperature of 32 to 50 °F (0 to 10°C).

Unfavorable storage conditions (exposure to direct sunlight, higher storage temperatures) may require a higher dosage.

Once opened, the product should be used up as soon as possible.

## Delivery Information

Panzym YieldMash XXL enzyme has the article number 95.228 and is supplied in the following packaging unit:

44 lb (25-kg) PE canister

## Certified Quality

Panzym YieldMash XXL enzyme is inspected regularly during the production process to ensure consistently high product quality.

Strict controls also take place immediately before and during final packaging.

### North America

44 Apple Street  
Tinton Falls, NJ 07724  
Toll Free: 800 656-3344  
(North America only)  
Tel: +1 732 212-4700

### Europe/Africa/Middle East

Auf der Heide 2  
53947 Nettersheim, Germany  
Tel: +49 2486 809-0

Friedensstraße 41  
68804 Altlufheim, Germany  
Tel: +49 6205 2094-0

An den Nahewiesen 24  
55450 Langenlonsheim, Germany  
Tel: +49 6704 204-0

### China

No. 3, Lane 280,  
Linhong Road  
Changning District, 200335  
Shanghai, P.R. China  
Tel: +86 21 5200-0099

### Singapore

100G Pasir Panjang Road #07-08  
Singapore 118523  
Tel: +65 6825-1668

### Brazil

Av. Ermano Marchetti, 1435 -  
Água Branca, São Paulo - SP,  
05038-001, Brazil  
Tel: +55 11 3616-8461

**For more information, please  
email us at [filtration@eaton.com](mailto:filtration@eaton.com)  
or visit [www.eaton.com/filtration](http://www.eaton.com/filtration)**

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