

Enzyme Treatment

Panzym® HT 300

Special Enzyme for Starch Degradation in Pomaceous Fruit Juice (Hot Enzymation)

Panzym HT 300 enzyme is the high concentrated Amyloglucosidase for the safe and economic degradation of starch. Panzym HT 300 enzyme is produced from a selected strain of *Aspergillus niger* and is available as a clear, brown liquid with a slight smell, typical of fermented products.

Application and Mode of Action

Panzym HT 300 enzyme hydrolyzes gelatinized starch and Dextrin completely thus assisting the clarification and filtration of the juices.

The enzyme requirement can easily be ascertained by conducting the iodine test. 0.034 fl oz (1 ml) of diluted iodine 0.71 oz (20 g) potassium iodide and 0.035 oz (1 g) iodine are poured on top of 0.338 fl oz (10 ml) fruit juice. Blue coloring (high amounts of starch), violet coloring (partially hydrolyzed starch) or red coloring (dextrin) formation indicates that the test is positive.

In order to ascertain the total amount of starch (gelatinized/non gelatinized) prior heating of the fruit juice samples to 176 °F (80 °C) and subsequent cooling down to 77 °F (25 °C) is necessary.

Gelatinized starch and dextrin age and this retrograding process occur particularly in juice and concentrates that are stored under cool conditions. Retrograded starch is no longer detectable when applying the iodine test and enzymatic starch degradation is no longer possible. Therefore, the addition of Panzym HT 300 enzyme should take place as early as possible, most advisably in heat-treated juices.

Dosage

With extremely high starch content, lower temperatures or shorter holding times, a higher enzyme dosage will increase the enzymation efficiency significantly. Panzym HT 300 enzyme is inactivated at temperatures exceeding 149 °F (65 °C) and by contact with bentonite.

| Application | Dosage in fl oz/1,000 gal (ml/100 l) |
|---|--------------------------------------|
| High starch content (early season fresh fruit) | 2.56 – 3.84 (2 – 3) |
| Average (medium) starch content (end-of-season fruit) | .28 – 2.56 (1 – 2) |
| Low starch content (Stored fruit) | 0.64 – 1.28 (0.5 – 1) |

Special Notes

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

Holding time: Enzymes need time to react. Therefore, please allow a holding time of at least 30 minutes.

Temperature: The enzyme is also active at higher temperatures (up to 149 °F (65 °C)). However, higher temperatures are critical for aroma quality and can lead to microbial problems within a temperature range of 86 – 113 °F (30 – 45 °C). Mash temperatures below 50 °F (10 °C) should be avoided.

Safety and Purity

Panzym HT 300 enzyme complies with the FAO/WHO (JECFA and FCC) specifications for enzymes in the food industry.

Panzym HT 300 enzyme is filled aseptically following sterile filtration and is therefore virtually germ-free. Panzym HT 300 enzyme is a brownish, liquid enzyme preparation that has the typical odor of fermented products.

Panzym HT 300 enzyme is characterized as follows:

- Production organism: *Aspergillus niger*
- Specified activity: 260 AGU/g (Glucoamylase)

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 HT 300 enzyme has the article number 95.253 and is supplied in the following packaging unit:

55,1 lb (25 kg) PE canister

Certified Quality

Panzym HT 300 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

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