



High Pressure Pasteurization Q&A

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1. What is High Pressure Pasteurization?

High Pressure Pasteurization is a unique process that kills pathogenic bacteria through high-pressure, water-based technology. High Pressure Pasteurization is a USDA-approved, 100% natural process, and is allowed for use on organic and natural products.

2. How does High Pressure Pasteurization work?

Essentially, this technology “puts the squeeze” on food pathogens without cooking out vital nutrients or changing the fresh characteristics of food. During High Pressure Pasteurization, pressure is uniformly applied around and throughout the food product.

High Pressure Pasteurization can be conducted at refrigerated temperatures, which means the temperature starts low and stays low – High Pressure Pasteurization does not cause the heat degradation that happens during cooking. Because of this, High Pressure Pasteurization is known for being especially beneficial for heat-sensitive products, like meats, fruits, and vegetables.

3. Why is Nature’s Variety now using High Pressure Pasteurization?

As always, we’re committed to continual product improvements, and we believe the use of High Pressure Pasteurization is an important step to further enhance our strict quality and food safety standards.

At Nature’s Variety, our purpose is empowering people to transform the lives of pets. We take pride in the quality of our foods “from farm to bowl” so that our ingredients, formulas, manufacturing protocols, and finished products are nothing short of superior – because that’s what our pets deserve. Using High Pressure Pasteurization is just one more step to ensure we’re living to fulfill our purpose.

4. Is High Pressure Pasteurization appropriate for natural and organic foods?

Yes. High Pressure Pasteurization is recognized by the FDA and USDA as an anti-pathogen treatment in many products. In addition, the USDA’s National Organic Products regulations provide for the use of High Pressure Pasteurization on organically labeled products.

Because High Pressure Pasteurization is the only scientifically recognized pasteurization process that does not use heat or irradiation to kill harmful bacteria, it is a safe treatment option that has little to no nutritional degradation of the products.

5. How did the High Pressure Pasteurization technology originate?

The origin of the High Pressure Pasteurization concept is as natural as the process itself. Over a century ago, scientists began investigating the fact that harmful bacteria found at sea level were actually not able to survive at deep sea levels (under high water pressures).

Within the last decade or so, advancements in technology have allowed for the duplication of this interesting phenomenon for use on natural and organic foods to kill harmful bacteria while preserving taste, enzymes, and overall nutritional integrity.

6. Which Nature’s Variety foods use High Pressure Pasteurization?

As of 2/11/10, all Nature’s Variety Raw Frozen Diets and Freeze Dried Raw foods utilize High Pressure Pasteurization.

7. Where else is High Pressure Pasteurization used?

High Pressure Pasteurization is currently used in the human food industry on products such as guacamole, oysters, lunch meats, and natural fruit juices.

8. Will I be able to see a difference in High Pressure Pasteurized product as compared to non-High Pressure Pasteurized product?

It would be extremely difficult to see a difference between High Pressure Pasteurized products as compared to non-High Pressure Pasteurized products. Remember, Nature's Variety Raw Frozen Diets are 100% natural and do not use artificial colors or preservatives. Therefore, batches may vary in color and/or texture due to the natural ingredients. It's more likely that you would notice this natural variation rather than any visible differences caused by High Pressure Pasteurization.

9. Are you changing your raw diet formulas as you introduce High Pressure Pasteurization?

No, in implementing this food safety step, there is no change in formula for Nature's Variety Raw Frozen Diets.

10. How does High Pressure Pasteurization maintain the nutritional integrity of the food?

High Pressure Pasteurization affects only the cell level. Pathogenic bacteria, including Salmonella, E. coli 0157:H7, and Listeria Monocytogenes are single-cell organisms present in small numbers and therefore ARE affected and destroyed by High Pressure Pasteurization by rupturing their cell walls. Beneficial bacteria are also present in very high levels in raw food, so, while some may be lost during High Pressure Pasteurization, there are still plenty remaining at the conclusion of the process.

High Pressure Pasteurization does NOT affect the molecular level. Proteins, enzymes, nutrients, prebiotics, vitamins, and minerals are molecules and, therefore, are NOT affected by High Pressure Pasteurization. Because proteins, enzymes, nutrients, vitamins, and minerals are unaffected by High Pressure Pasteurization, the nutritional value of the food is not sacrificed by High Pressure Pasteurization.

High Pressure Pasteurization causes minimal to no effect on nutritional value, vitamins or minerals, flavor compounds (taste), or pigments (color).

11. Does High Pressure Pasteurization affect the food's naturally occurring enzymes?

No, High Pressure Pasteurization causes little to no effect on the food's naturally occurring enzymes. Food enzymes are very resistant to pressure and require very high pressure for their inactivation. Many enzymes in our foods remain active up to 140 to 176°F, yet our High Pressure Pasteurization processing temperatures will not exceed 90°F and will typically peak in the 78 to 89°F range.

For example, the following raw food enzymes remain active far beyond the temperature used in our High Pressure Pasteurization process:

- Alkaline Phosphatase - active up to 140°F
- Lipase - active up to 143°F
- Catalase - active up to 145°F
- Peroxidase - active up to 165°F
- Xanthin Oxidase - active up to 186°F
- Acid Phosphatase - active up to 188°F

12. Does the use of High Pressure Pasteurization change the manufacturing process for Raw Frozen Diets?

The use of High Pressure Pasteurization adds a new step to our manufacturing processes. After we grind and blend our raw ingredients (meat, poultry, fruits, and vegetables), we now send the refrigerated blend to a third party USDA-inspected plant that follows strict human food processing standards to be High Pressure Pasteurized. Then, the food is returned to the Nature's Variety plant and is formed, frozen, and packaged into medallions, patties, or chubs.

Nature's Variety uses a third party laboratory to test every lot of finished product in order to confirm that it is negative for select pathogenic bacteria (Salmonella, E. coli O157:H7, and Listeria monocytogenes). When the test results are reviewed and confirmed negative, the product is released for shipment to our distributor partners and then on to retail stores.

Please note, in implementing this food safety step, there is no change in formula for Nature's Variety Raw Frozen Diets.

13. Where can I go if I want to learn more about High Pressure Pasteurization?

You can learn more about High Pressure Pasteurization through these helpful resources:

- Iowa Public Television's High Pressure Pasteurization video: http://www.iptv.org/mtom/story.cfm/feature/446/video/mtom_20080118_3320_clip
- Illinois Institute of Technology's website: <http://www.iit.edu>
- American Pasteurization Company's website: www.pressurefresh.com
- Avure Technologies website: www.avure.com