

# When is the end of PPO-Pasteurization coming?

*About 10 years ago the salmonella outbreak in Canada was traced back to raw almonds. Over the following years, a few more outbreaks were caused by these nuts grown in California. Infected produce came from different growers and no measures taken after finding the source of the poisoning managed to solve the problem effectively. The USDA (US Department of Agriculture), CDC (Centers for Disease Control), California Almond Board, and FDA (Food and Drug Administration) combined their forces and developed a piece of legislation enacted on the 1<sup>st</sup> September of 2007. According to this law, all California-grown almonds must be pasteurized.*

Currently there are two main methods being used to **pasteurize** the almonds. One uses steam to sanitize the nuts, while the other uses the chemical propylene oxide, aka PPO, which is considered a possible carcinogen. Most conventional almond growers **pasteurize** their almonds using PPO. The industry is aware that PPO has to be discarded as a method. Consumer awareness is constantly rising – public criticism of the PPO process is just a matter of time.

Today there are several manufacturers of nut pasteurization systems using steam. One of them is Log5, a spinoff of the post-harvest technology group [Royal Duyvis Wiener](#). 2017 Log5 received the Industry Excellence Award in the category 'Processing Innovation' at [Gulfood Manufacturing](#). The Clipper talked to Tom Velthuis, International Sales Manager at [ANUGA FoodTec](#) about their innovative processing technologies.

The Clipper: What kind of machinery do you develop and what is special about it?

Tom Velthuis: We pasteurize nuts without changing the properties of the product. The pasteurized products in our system do not change in colour, texture and the skin. Tree nuts such as almonds are susceptible to quality changes such as, cooked flavor notes, coloration and loss of skin during the pasteurization process, when excessive condensation occurs during treatment. To preserve to original quality of your product, new pasteurization techniques are required. We even have a sample here at ANUGA FoodTec with pasteurized and raw products and we let people guess which one is pasteurized. People cannot make a difference between the raw and the pasteurized product. Half of the people guess right, the other wrong. It is really not visible.

The Clipper: How does it work?

Tom Velthuis: We heat up the product to pasteurizing temperature which is around 80° to 90° C. Then we treat it with humidity for 12-15 minutes and then we cool it down. We pasteurize the product continuously, the output is

The Clipper: What does the name stand for?

Tom Velthuis: Log reduction stands for 10-fold (one decimal) or 90% reduction in numbers of live bacteria. At a 4 Log reduction, the number of pathogens is 10,000 times less. 5Log reduction means the number of pathogens is reduced, times 100,000.

The Clipper: Who buys your systems?

Tom Velthuis: At this moments we have a few systems running in the US for almonds, for sunflower and for walnuts. One is installed for peanuts and one in Turkey for hazelnuts.

The Clipper: What are your major target markets at the moment?

Tom Velthuis: We are focusing on California, Turkey, South Africa and Australia.

The Clipper: Please tell us a bit about the company history.

Tom Velthuis: Log5 is part of [Royal Duyvis Wiener](#) which was founded in 1885. The main business of the group is chocolate. We do cocoa processing and chocolate processing. We have clients worldwide such as: Nestle, ADM, Cargill and Barry Callebaut. Together with our partner company F.B. Lehmann GmbH we provide turnkey plants and process lines for the processing of cocoa beans to chocolate. We are also active in engineering and implementation of specialized projects in the process industry with renowned companies such as Tata Steel, DSM and the AMC. ~~SEPA~~ Around 300 people are employed at Royal Duyvis Wiener. We have always been very active with solutions for grinding hazelnuts. As you know there was a recall in the US between 2010. The U.S. Food and Drug Administration (FDA) announced Christmas Eve that Janzen Farms of Dayton, Oregon, was recalling hazelnut kernels due to potential Salmonella contamination. The hazelnut kernels were sold in November and December of 2010. Salmonella is a bacterium that can cause severe illness in young children, elderly people and in individuals with compromised immune system. Before this time, no recorded outbreaks had been tied to U.S. hazelnuts. This series of events forced domestic hazelnut producers – 99 percent of whom are situated in Oregon’s Willamette Valley – to re-examine growing and shelling processes with an eye to making a safer product. This is when Royal Duyvis Wiener created Log5 to improve food safety for the nut industry.

The Clipper: Thank you very much.

Link: <https://log5.com/>

