



**BAKINGTECH 2018**

SUSTAINABILITY-SUCCESS THROUGH PEOPLE

PRODUCTS AND PRODUCTIVITY

# Baker's Perspective on Enzymes



# Shawn Dewey

## Operations Manager Franz Bakery

### Springfield, OR

- **Started bakery career in 1992, going on my 26<sup>th</sup> year**
- ❖ **Loading racks to palletizing bread**
- ❖ **Oven operator**
- ❖ **Divider operator**
- ❖ **Dough mixer**
- ❖ **Shift Foreman**
- ❖ **Lead Supervisor**





# Baking and processing aides

1960's Alpha Amylase: degrade the damaged starch in wheat flour into small dextrin's, which allows yeast to work continuously during dough fermentation, proofing and the early stage of baking. The result is improved bread volume and crumb texture.

1970's Protease: Protease acts on protein chains, breaking the peptide bonds between amino acids. Protease is used as a mix reducer and dough relaxer.

Xylanases: Dough conditioning. Easier dough handling and improved crumb structure



## Baking and processing aides

1991: Our company and the baking community in general took a big hit due to a regulation which eliminated a key ingredient.

**ADA**  
**Azodicarbonamide**

Potassium bromate is a chemical that strengthens dough and allows for a longer rising and higher rising in the oven. Potassium bromate, commonly referred to as simply "bromate," is a slow-acting oxidizer, contributing its functionality throughout the mixing, fermentation and proofing stages, with important residual action during the early stages of baking.



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# Baking and processing aides

ADA matures flour through oxidation

[In 2014: The Food Babe Urges Subway to Stop Using Azodicarbonamide](#)

**SUBWAY: Stop Using Dangerous Azodicarbonamide in Your Bread!**

 Azodicarbonamide is the same chemical used to make yoga mats and shoe rubber. It's banned all over the globe because it's linked to respiratory issues, allergies and asthma. **This is not eating fresh!**

**North America VS UK, EU, Australia**

Subway uses **Azodicarbonamide** in their 9-Grain Wheat, 9-Grain Honey Oat, Italian White, Italian Herbs & Cheese, Parmesan/Oregano, Roasted Garlic, Sourdough, and Monterrey Cheddar breads.

Subway **does not** use Azodicarbonamide in other countries.



**We deserve the same safe ingredients that Subway uses around the world.**

**SIGN THE PETITION:** [foodbabe.com/subway](http://foodbabe.com/subway)  
#NoWaySubway

**FREE YOGA MAT**  
with every foot-long sandwich



**SUBWAY**  
eat the things that make you healthy.

In that same year, we worked with our supplier to get us an Enzyme/Ascorbic blend to replace ADA



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# Extended Shelf Life

Bread and cake staling is responsible for significant financial loss for both consumers and producers. For instance, every year in the USA bread worth more than 1 billion dollars that is discarded. However the main saving on prolonging the shelf life is actually savings in transportation and fuel costs due to a more efficient distribution.

1999: we began using Novomyl, which was an extended shelf life enzyme. This ingredient was used at 10 grams per 10 sack dough. This extended out shelf life from 3 to 5 days

2001-2006: we began working with one of our suppliers that began using a protein based ESL that raised our shelf life to 7days



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## Extended Shelf Life

With the success of reducing returns, eliminating trucking and fuel. The question is really how long can we go. Shutting down of major bakeries, means we travel a lot further to get to some of our customers



The quality of the current Enzymes has our shelf life up to 14-21 days. In other bakeries this us up to months.



# Market trends

Market trends are a big contributor to the needs of Enzymes



Enzymes are key for many of these items to keep cost down, due to high ingredient costs, such as gluten reduction and also as vital processing aides.



# Market trends

Mono and diglycerides acts as an emulsifier, it can improve loaf volume and create a softer crumb.



They promote inflammation and obesity; raise LDL, or bad, cholesterol levels; and lower HDL, or good, cholesterol levels.



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# Ingredient reduction

Since around 2005, enzymes have been introduced to us as an ingredient reducer

**DOLLAR SAVER**



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# TEAMWORK

Together Each Achieves More

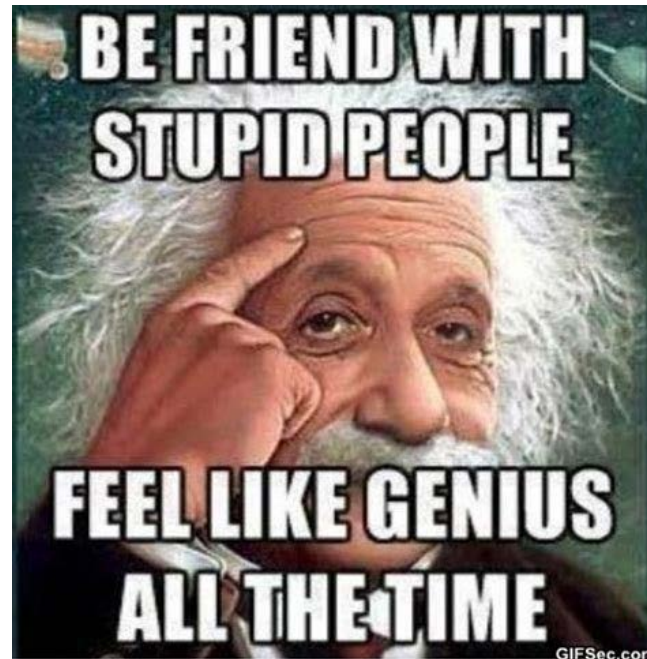


# Bakers Perspective on Enzymes

Enzymes are hugely important to our baking lives.

1. They increase our efficiencies
2. They give us consistent quality
3. They give us longevity to our product
4. They keep us moving with trends

**Always remember, you are dealing with dumb bakers!!!**



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