



TIA Tech Seminar

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 **Ventura Foods**™

A bakery saying...

*If flour is the backbone of baked
goods,
then
Shortening is their Life Blood...*

Status of the recent FDA ruling on Partially Hydrogenated Oils (PHOs)

- FDA has ruled that Partially Hydrogenated Oils (PHO's) no longer will be classified under the Generally Regarded As Safe GRAS status.
- PHOs are inextricably tied to Trans Fatty Acids
- Ruling will take effect CY of 2017
- However, most PHOs will most likely be removed from the market long before this date.
- Will apply to mono-diglyceride ingredients.

Functional Attributes of Fats, Oils and Margarines in Flour Tortillas

- Eating quality, lubricity during the chewing and swallowing. – Shelf life extension
- Contributes to the flavor of the base oil.
- Aids in the dividing process.
- Provides lubricity during the hot press process.
- Contributes to the “crumb” structure.

Functional Attributes of Fats, Oils and Margarines in Flour Tortillas

- Reduces the amount of “welding” between stacked tortillas.
- Can carry emulsifiers uniformly in the dough.
- Margarine provide a “buttery” flavor profile.
- Margarines can be combined with butter to produce high end tortillas.

Functional Oil Processing

- Hydrogenation- Full and Partial
- Fractionation – Primarily Palm Oil
- Interesterification – Chemical and Enzymatic
- Blending of Oil Stocks

Fractionation

- The physical or chemical separation of select “fractions” or portions.
- Primarily done with RBD Palm Oil.
 - Hard Fraction of Stearine
 - Soft Fraction of Olein
- Allows for blending to create functional shortenings.

Hydrogenation

- Benefits of the Hydrogenation Process
 - Converts liquid soybean oil to solid shortening, creating numerous functional products.
 - Improves oxidative stability.
 - Results in temperature tolerant shortening.

Interesterification

- A process that uses either an enzyme or chemical catalyst.
- Typically done with a fully hydrogenated oil and a liquid portions.
- Produces a shortening that has a smooth solids profile, typically required in key bakery goods.

Blending

- A historical method of creating select functional shortenings using various items.
- Blending can be to meet select nutritional values, typically lower saturated fat shortenings.
- Significantly more important process with the elimination of PHOs.

Short List of Commercially Available Oils for use in Flour Tortillas

- US Commodity RBD Soybean Oil (SBO)
- High Oleic Soybean Oil under two commercial names
- Fully Hydrogenated Soybean Oil
- Non-GMO SBO
- Expeller Pressed Soybean Oil
- US & Canadian RBD Canola Oil
- Expeller Pressed Canola Oil
- High Oleic Canola Oil
- Organic Canola Oil

Short List of Commercially Available Oils

- RBD Sunflower Oil
- High Oleic Sunflower Oil
- Corn Oil
- Cottonseed Oil (CSO)
- Fully Hydrogenated CSO
- RBD Corn Oil
- RBD Cottonseed Oil (CSO)
- Fully Hydrogenated CSO
- Multiple Types of Olive Oils
- RBD Coconut Oil
- Organic Coconut Oil

Short List of Commercially Available Oils

- Safflower Oil
- Palm Oil
 - Various fractions
 - both Asian and Ecuadorian sources
 - Mass Balanced and Sustainable Palm Oil
 - Interesterified palm oil
- Interesterified stocks, multiple specifications used for functional blends
- Butter, salted, unsalted and anhydrous
- Lard, refined and deodorized
- Tallow

Simpler Cleaner -Margarines

- For Soybean Allergen free either remove the Soy lecithin or replace with Sunflower Lecithin.
- Milk free Allergen free – no added whey, NFDM and non milk based Natural Flavors
- Micro-preservative free requires temperature control, tight emulsion and enhanced packaging.
- Anti-oxidants removal with improved oil handling methods and “natural” based ingredients
- “Natural” sourced color agents are available, Annatto, Turmeric and Beta Carotene.

Current Solutions for Non-PHO- NTF Shortenings for Use in Flour Tortillas

- All Purpose Palm Oil –
 - Fractions blended for ~ 97F, 102F, 110F & 115F Melt Point (MDP)
- Emulsified (mono and diglyceride) Palm Oil shortenings.
- All Purpose Palm Oil /Soybean Oil blends
 - Various ratios similar to pie shortenings.
- Lower Saturated A/P –Palm/PKO Canola Blend
 - Saturate level in the ~20% level
- A/P Domestic Oil
 - Blend of Hydrogenated CSO, High Oleic Canola Oil and SBO

Current Solutions for Non-PHO- NTF Shortenings for Use in Flour Tortillas

- Multi-purpose shortening Ntrans[®]
 - Select Mono-diglycerides and Soybean Oil blend
- Domestic Oil Interesterified Shortening.
- Liquid vegetable oils, various
- Lard
- Margarines made with all of the above oil bases.
- Margarine Blended with Butter.

Selection Factors for Tortilla Fats

- No Trans Fat (NTF) Status
- No PHOs Status
- Vegetable Oil vs. Animal
- Sustainably Grown and Green Processed
- Kosher
- Hallal
- Packaging Type
- Solid Shortening vs. Liquid Oil.

Selection Factors for Tortilla Fats

- Organic
- GMO status
- “Natural” or “Simple” Ingredients
- Extension Shelf Life needs, Fat content and type of Emulsifier Additions.

Questions/Answers

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