

Plenish™ High Oleic Soy

Steve Schnebly, Senior Research Manager

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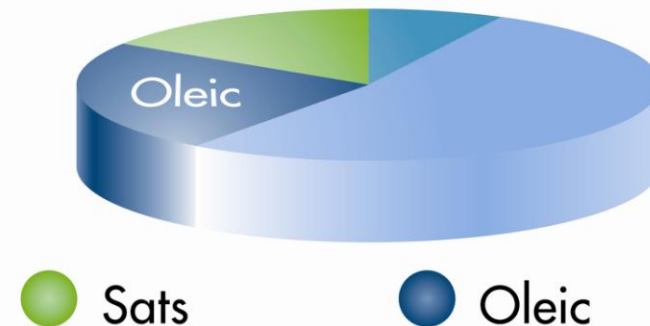
Plenish™ High Oleic Soy

- Biotech soybean with **consumer** benefits
- Enhanced functionality for food preparation
- Industrial application benefits
- High-yielding Pioneer® brand Y series varieties

PLENISH™ HIGH OLEIC



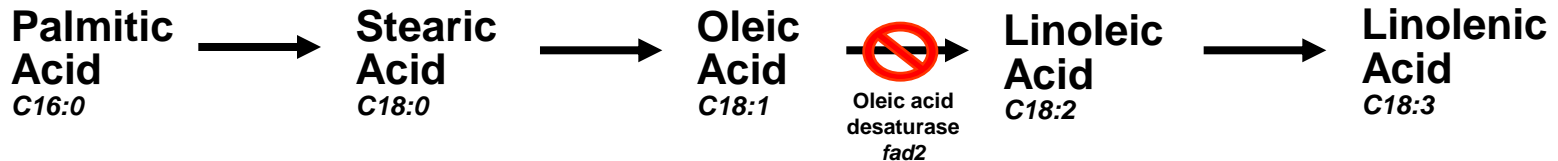
COMMODITY



Biotechnology used to Improve The Stability of Soy Oil



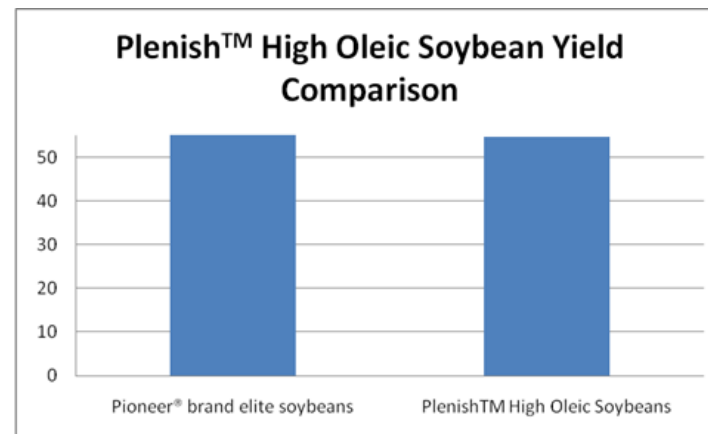
- Seed specific silencing of oleic acid desaturase genes
- Reduces the amount of unstable 18:2 and 18:3
- Increases levels of 18:1 Oleic Acid (monounsaturate)
- Resulting fatty acid profile similar to olive oil



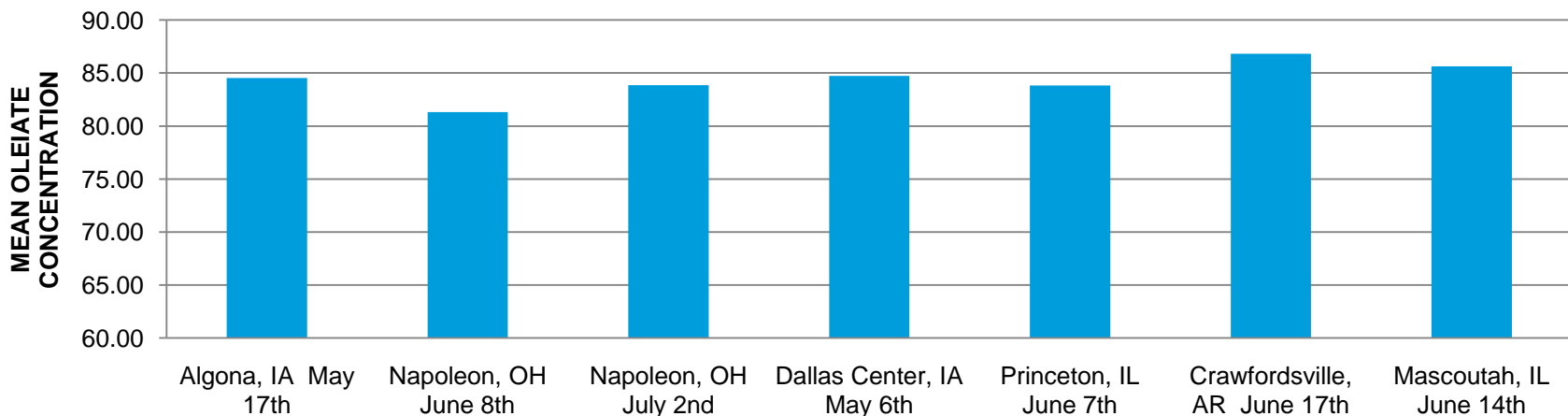
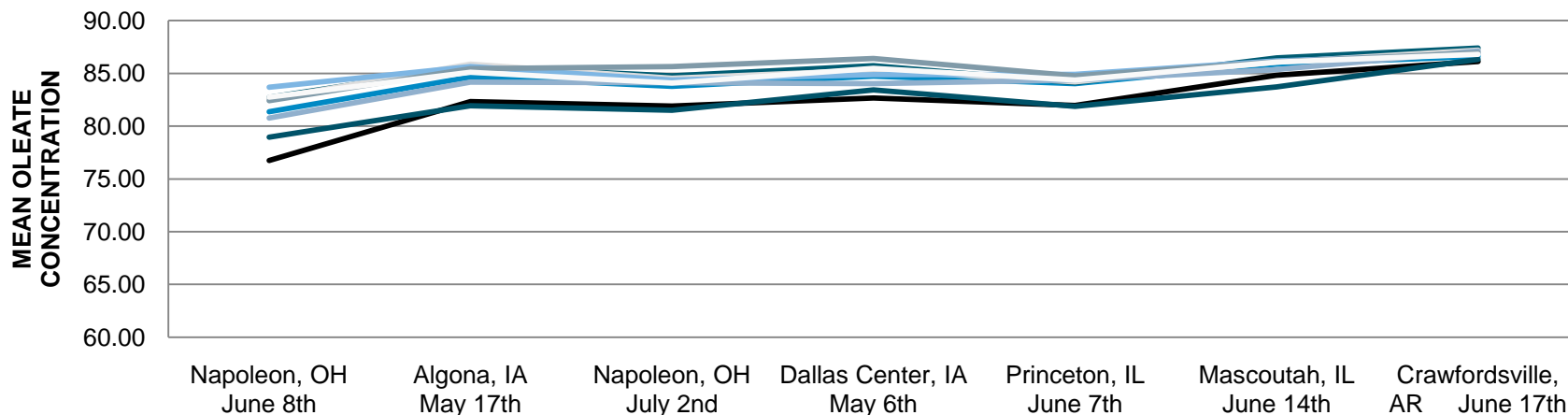
Plenish™ High Oleic Soybeans

Yield & Agronomics

- Plenish™ high oleic soybeans have the necessary agronomic and defensive traits, with solid yield performance
 - Research data indicates continued parity yield with industry leading Pioneer® brand M and Y series soybean products
 - SCN resistance
 - *Phytophthora* resistance and/or *Phytophthora* Tolerance
 - Good tolerance to SDS
 - Stable fatty acid profile
 - >75% Oleic
 - ~3% Linolenic



Fatty Acid Stability of Nine Plenish™ Soybean Varieties Grown in 2010



Target Applications for Plenish™

1. Improved Frying Performance

- Stability – increased fry life
- Flavor
- Decreased equipment maintenance

2. Longer Shelf Life for Manufactured Products

- Stability
- Flavor
- Improved label opportunities

3. Improved Shortening Basestock

4. Blending Opportunities

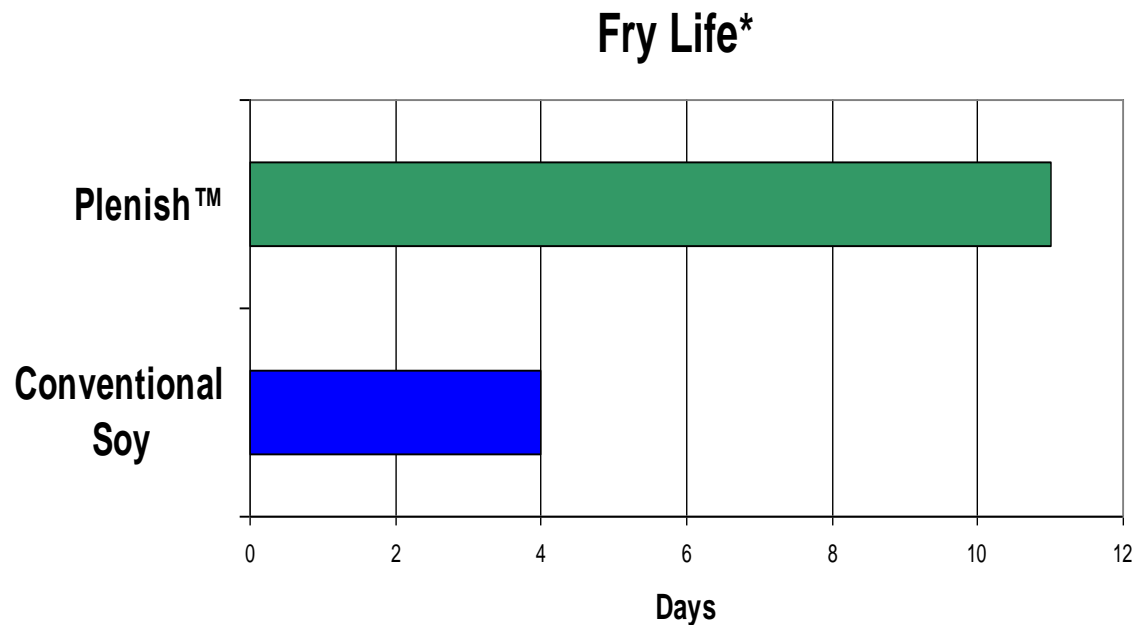
- Cost
- Functionality
- Flavor



Plenish™ Extends Fry Life

Longer Fry Life

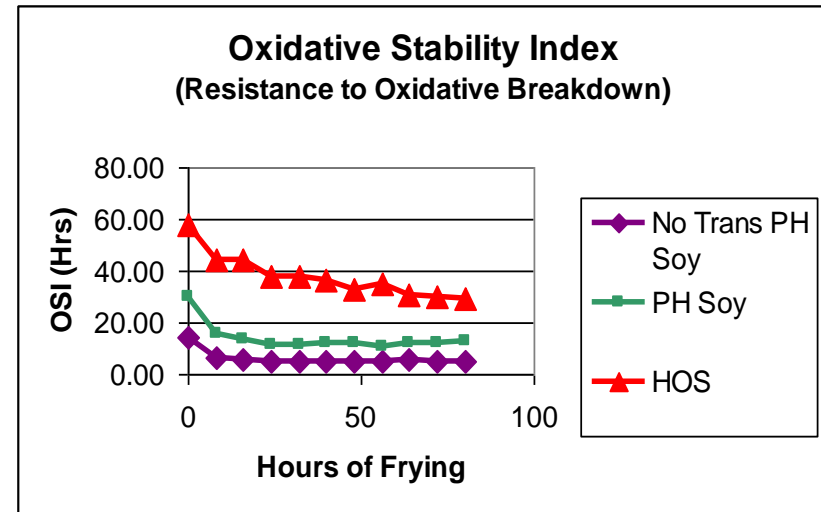
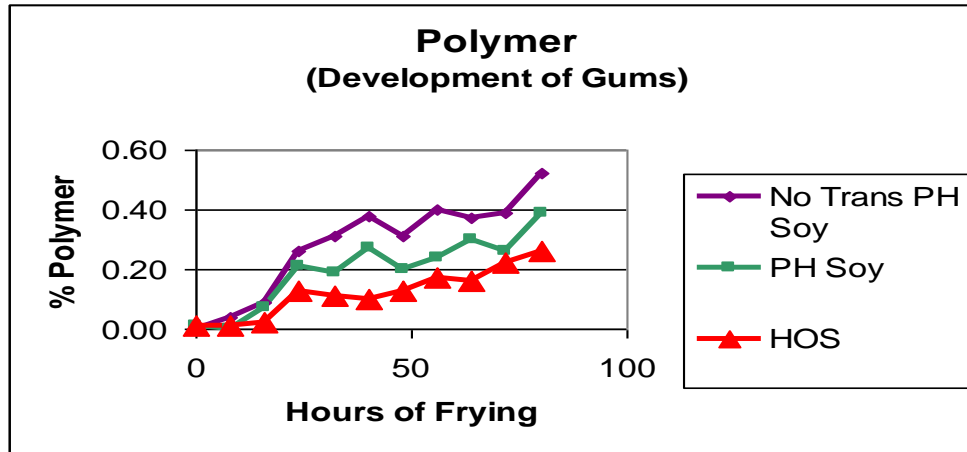
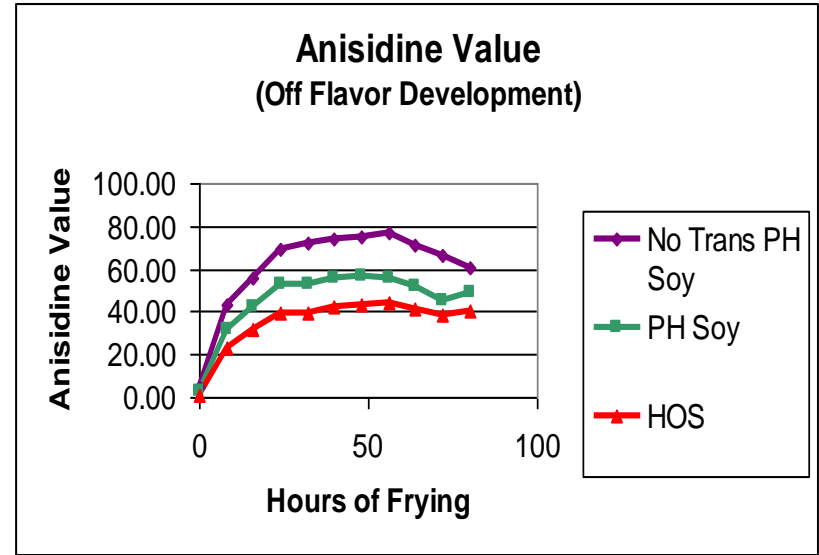
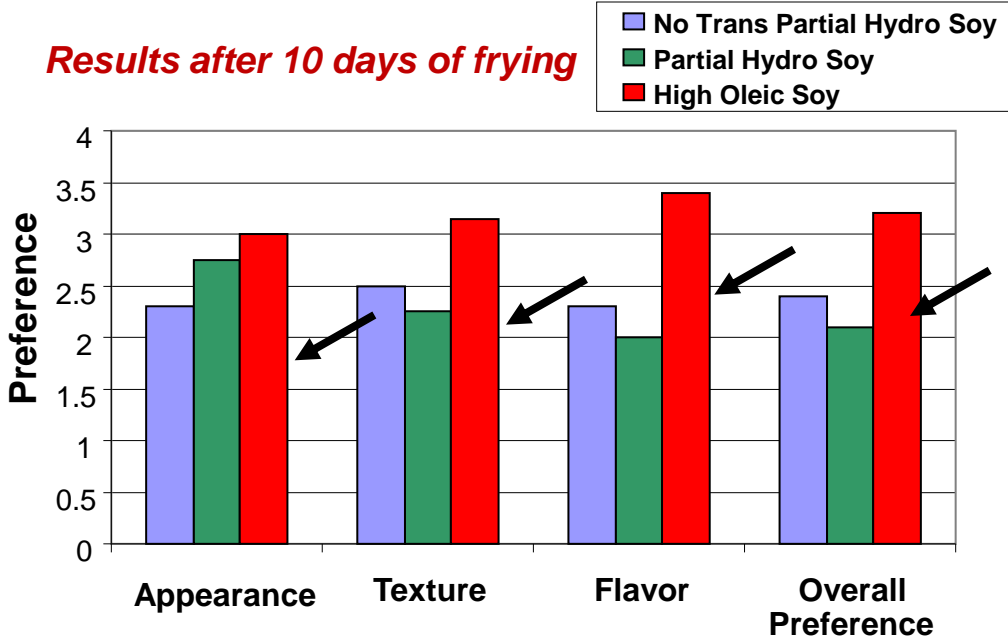
- 2 to 3X longer than conventional soy
- Fewer oil changes = lower labor and oil costs



* As determined by when oil reaches 24% total polar material

Food Fried in Plenish™ Is Preferred

Results after 10 days of frying



15 lb capacity fryer, 350 F, 8hrs/day, %oleic: NTPH 22, PH 51, HOS 81

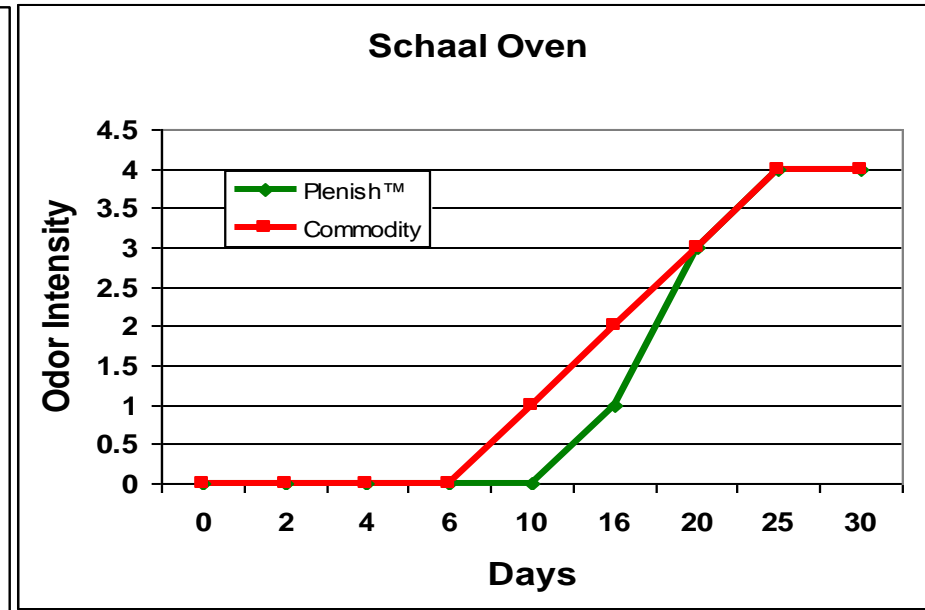
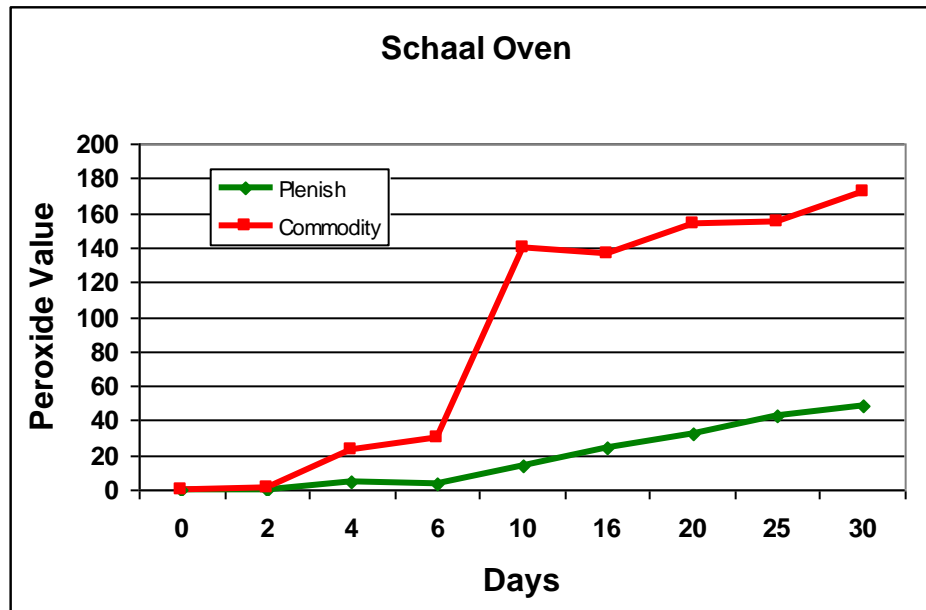


Data kindly provided by Pam Teran, Bunge Oils



Plenish™ High Oleic Soy Extends Shelf Life

- Stable oil under bulk storage
- Extended shelf life for food products prepared with Plenish™
- Allows for clean labels, removal TBHQ



Rule of thumb: 1 day oven = 1 month shelf

Plenish™ Reduces Problematic Polymer Build-up

Lack of Oil Stability

- Current trans-free options not as stable as partially hydrogenated oils
- “Varnish-like” coating on equipment
- Foodservice operators experiencing added cleaning costs resulting from tacky materials coating surfaces

The Solution:

Plenish™ High Oleic Soy

- Lower maintenance and cleaning costs
- Reduced safety risk

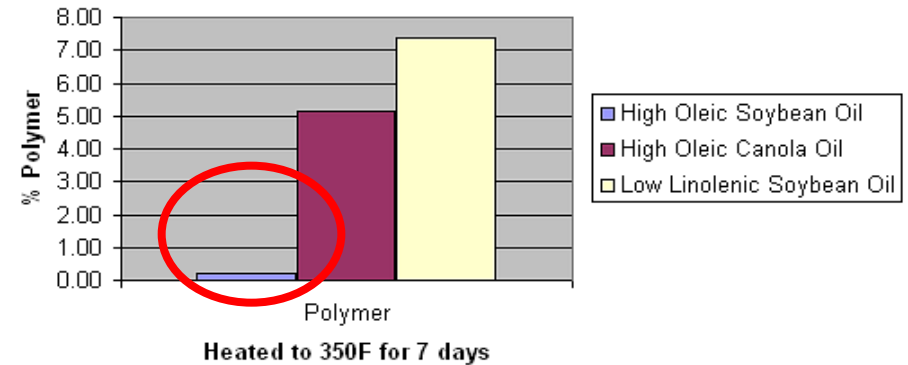
Conventional Soy



Plenish™ High Oleic Soy



Oven Heat Stress Test Results



Data kindly provided by Pam Teran, Bunge Oils

Plenish™ High Oleic Soy Market Development

- Strong downstream demand based on initial performance and the potential for high volume availability with large soy acreage availability
- Product testing agreements in place with major food and industrial users
 - Meeting / exceeding product performance requirements
 - Positive test feedback on everything from taste to functionality
- Plenish™ high oleic soy is moving to second phase of product testing with several accounts
 - Increased oil volumes now available for testing as a result of US regulatory approval



Advantages for Industrial Use

Bio-based fluids are in demand

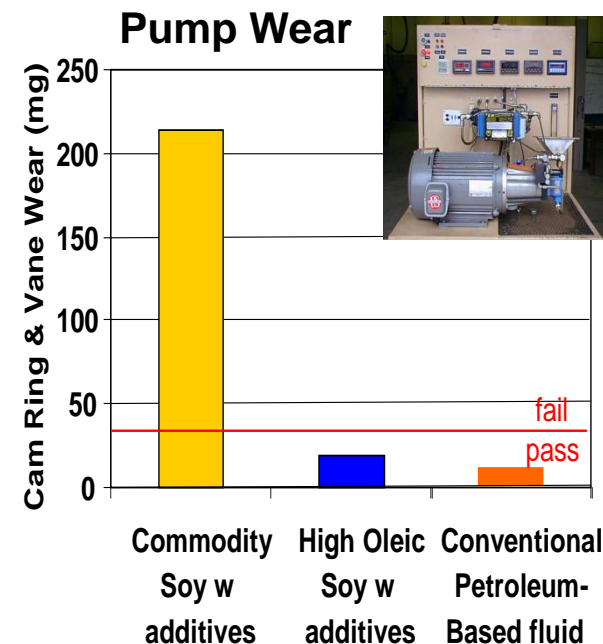
- Green: Renewably sourced, domestically sourced, sustainable, biodegradable
- Regulatory incentives
- Cost: Increasing crude petroleum prices, cost of environmental clean-up

High Oleic Soybean Oil has properties superior to petroleum based oils

- Better lubricity, viscosity and shear resistance
- Higher flash point
- Reduced combustibility

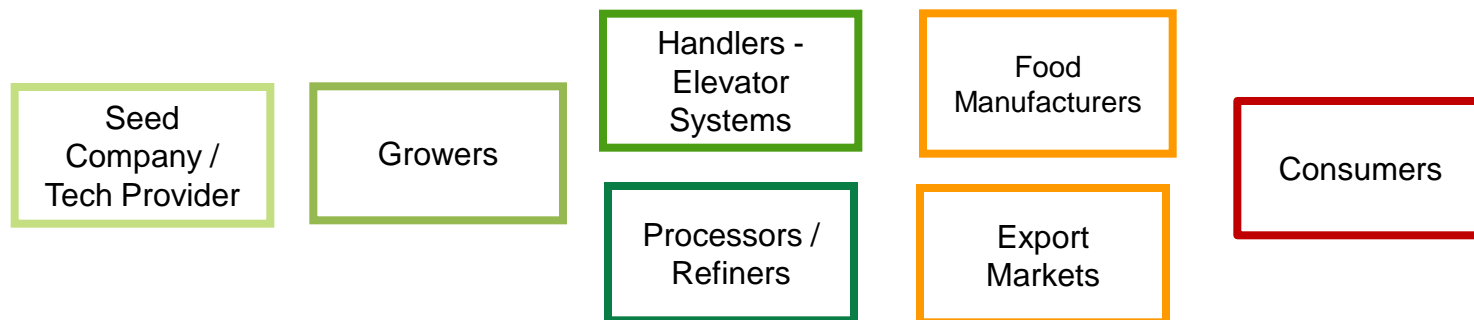
Stability and oleic purity drive opportunities

- Lubricants, Hydraulics
- Dielectric Fluids
- Polyols, Adhesives
- Oleochemicals



Building High Volume / Low Cost Supply Chains

- **Building High Volume / Low Cost supply chains to sustain a win - win for all participants (tech suppliers, growers, processors, end-users)**
 - High yielding products in multiple varieties provides growers flexibility
 - Acreage concentration: New origination / supply models with processors that lower costs
- **Creating maximum demand pull**
 - Product promotion / positioning with downstream markets
 - Positioning with Influencers & Consumers

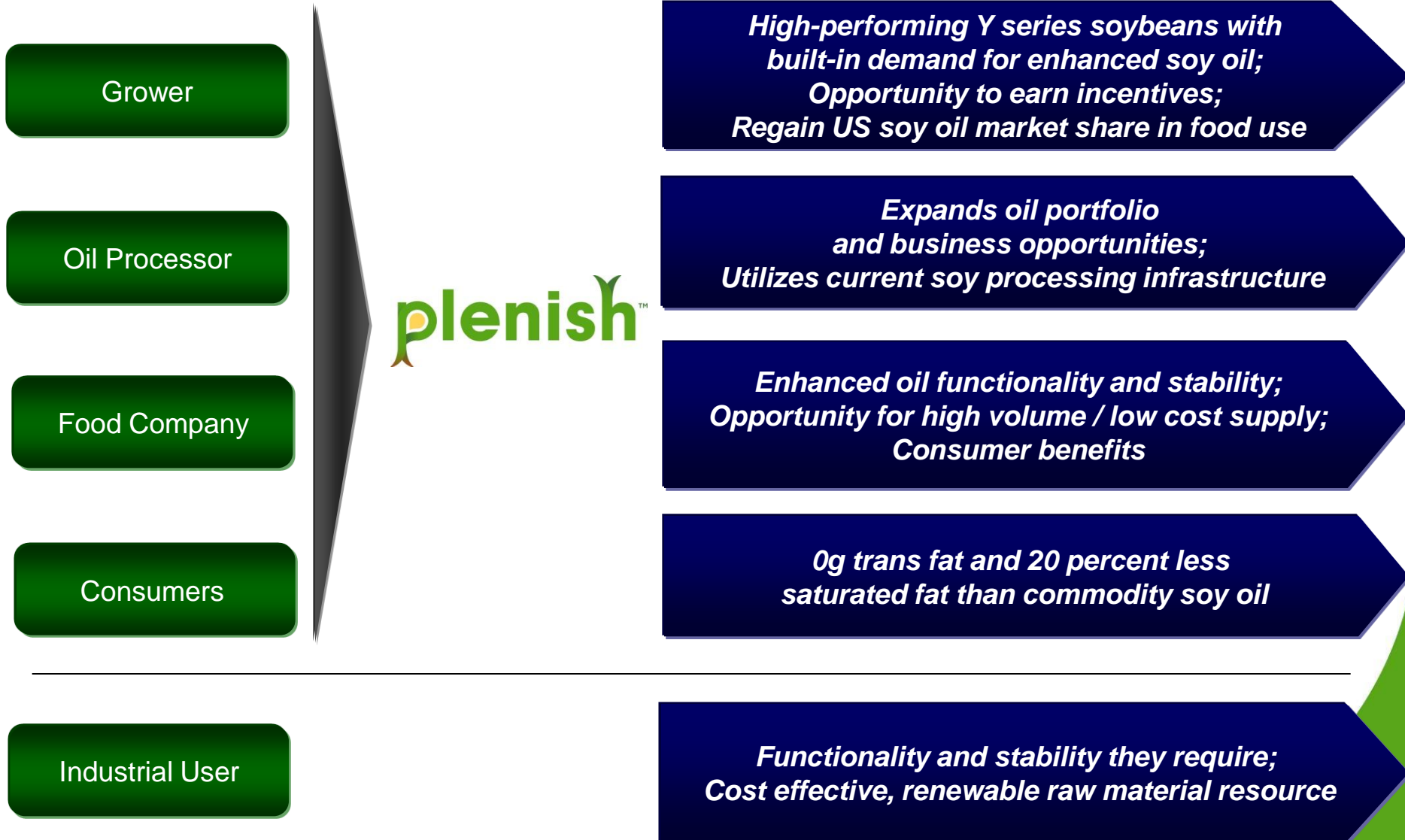


Soybean Industry Benefits

- **Opportunity to increase soybean oil market share**
 - Increased value for growers participating in IP crop production
 - Industry benefits from increased value and demand for soybeans
- **Showcases soybean growers ability to produce and supply in demand, enhanced ingredients for consumers**



Value and Benefits across the Chain



plenish™

High Oleic Soy