A Golden Opportunity for Food Industry and Soybean Farmers

February 2015
Monsanto Pursuing Smarter Ways to Nourish Our World with Vistive® Gold

• Sustainability
• Collaboration
• Food

Farmers see competitive yields and premium per bushel

An oil with attractive qualities for end uses

Used for improved cooking oil

Used for bio-based lubricants and synthetic motor oils

• One serving of Vistive Gold high oleic soybean oil (14g total fat) contains 0g trans fats as defined by the FDA for Nutrition Facts Panel purposes.
• Vistive Gold oil is 6% saturated fat versus 15% saturated fat in commodity soybean oil.
LOWEST SATURATED FAT CONTENT

FATTY ACID PROFILE OF COMMON OILS AND FATS

- **Vistive Gold**
  - Sat Fat: 6%
  - Oleic: 74%
  - Linoleic: 17%
  - Linolenic: 3%

- **CV 65 Canola**
  - Sat Fat: 7%
  - Oleic: 65%
  - Linoleic: 25%
  - Linolenic: 3%

- **High Oleic Canola**
  - Sat Fat: 7%
  - Oleic: 74%
  - Linoleic: 16%
  - Linolenic: 3%

- **Canola**
  - Sat Fat: 8%
  - Oleic: 60%
  - Linoleic: 21%
  - Linolenic: 11%

- **NuSun**
  - Sat Fat: 9%
  - Oleic: 65%
  - Linoleic: 26%

- **Plenish**
  - Sat Fat: 12%
  - Oleic: 77%
  - Linoleic: 8%
  - Linolenic: 3%

- **Corn Oil**
  - Sat Fat: 13.5%
  - Oleic: 27.5%
  - Linoleic: 58%
  - Linolenic: 1%

- **Commodity Soy**
  - Sat Fat: 15%
  - Oleic: 22%
  - Linoleic: 55%
  - Linolenic: 8%

- **Palm Oil**
  - Sat Fat: 50%
  - Oleic: 38%
  - Linoleic: 12%
LOW SATURATE HIGH OLEIC SOYBEAN OIL

TYPICAL FATTY ACID COMPARISON:

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<th></th>
<th>Palmitic</th>
<th>Stearic</th>
<th>Oleic</th>
<th>Linoleic</th>
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Reduced saturated fat
Improved stability

Vistive Gold will be lower than other oils in saturated fat

Based on industry data

-85%
-70%
-60%
-57%
-33%

Palm Oil
Fry Shortening
Soybean Oil
Corn Oil
NuSun/HO Sun

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LOWER SATURATED FAT CAN INCREASE PURCHASE INTENT

Mayonnaise Study Consumer Test — Two-thirds of respondents indicated that lower saturated fat content would increase purchase intent.

Mayonnaise consumer test conducted July, 2011
Total sample size = 89
**IMPROVED STABILITY CAN EXTEND SHELF LIFE**

**FRIED FOOD**

33% **LONGER SHELF LIFE**

Tortilla study demonstrated less off flavors developed after 12 weeks storage, confirmed by sensory, increasing shelf life 33% to 16 weeks.

**OVERALL ACCEPTABILITY**

Typical shelf life = 12 weeks
Vistive Gold still acceptable at 16 weeks
* 85% corn oil, 10% mid oleic sunflower oil, 5% high oleic canola oil

Source: 2011 Merlin tortilla study
INCREASED STABILITY CAN EXTEND SHELF LIFE MAYONNAISE

3 MONTH EXTENDED SHELF LIFE

- Typical shelf Life = 9 months
- Vistive® Gold still acceptable at 12 months

* Based on previous shelf life evaluations conducted by the NFL, a change in quality score of 30-35% is borderline acceptable and indicates the end of shelf life. A change in quality score above 35% is unacceptable and would exceed the shelf life for flavor quality.

National Food Laboratory Mayonnaise Study, 2011
# VISTIVE® GOLD SOYBEAN OIL BENEFITS

## Functional Benefits
- Excellent clean flavor
- High stability – longer fry stability
- Eliminates greasy buildup
- Longer shelf life

## Nutritional Benefits
- 0g *trans* fats per serving *
- No hydrogenation
- 1 g of saturated fat per serving
- Ability to reduce saturated fat in food

## Targeted Use
- Frying
- Spray for crackers/ snacks
- Baking & shortening blends
- Oil blends used in food processing

* As defined by FDA for NFP purposes.
EXPANDING SOYBEAN OIL USES AND DEMAND WITH NEW INDUSTRIAL USES

- UltraLube brand products
  - Better performing product for consumers driven by high oleic soy
  - Available today @ Lowes and HomeDepot

- Biosynthetic Technologies, Inc. makes high performance motor oil with Vistive Gold
  - API certified
BTI Motor Oil Taxi Cab Trials Highlight Engine Cleanliness Test Results

Engines ran cleaner on biosynthetic oils
in 50,000 – 60,000 mile taxi cab field trial in Las Vegas

Figure 1. Biosynthetic formulation

Figure 2. Typical mineral oil formulation

Engine rockers and cylinder heads
Farmers Report Good Performance

185 Observations in Michigan, Indiana and Ohio in 2013-2014 growing seasons
Vistive Gold 2015 Portfolio: AG2765G, AG2965G, MON262VG, MON292VG, MON302VG;
Competitive Checks: + - .4RM
Revenue based on $10/bu commodity and Vistive Gold premium $.60/bu
Vistive Gold Business Model Supports Acreage Contracting
A Golden Opportunity for Growers and the Industry

• More profit potential per acre
• Opportunity to expand Vistive Gold footprint based on variety performance and oil demand
• Anticipated 2016 commercial launch, pending regulatory import approvals in key export markets
• USB estimates 15M-20M high oleic soy acres by 2023