Growing & Marketing Low Linolenic Soybeans - A Value Added Opportunity

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GROWING & MARKETING LOW LINOLENIC SOYBEANS—A VALUE ADDED OPPORTUNITY

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The Food and Drug Administration’s statement that trans-fatty acids are undesirable for human health and the requirement that food processors list trans fats on food nutrition labels beginning in 2006 has poised 1% low linolenic soybean oil as part of the solution to the trans fat problem. Unhydrogenated soybean oil does not contain trans fat, but most soybean oil is hydrogenated to increase the shelf life of products that use soybean oil as an ingredient. Low linolenic soybean oil is stable enough without requiring hydrogenation, eliminating trans fat and not increasing saturated fat. According to the United Soybean Board, the low linolenic soybean oil could add an estimated $100 million per year to the value of soybean commodities.

Below is a comparison of the food label for hydrogenated soybean oil and the new 1% linolenic soybean oil.

<table>
<thead>
<tr>
<th>1% Linolenic Oil</th>
<th>Hydrogenated Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nutrition Facts</strong></td>
<td><strong>Nutrition Facts</strong></td>
</tr>
<tr>
<td>Serving Size 1 Tbsp (14g)</td>
<td>Serving Size 1 Tbsp (14g)</td>
</tr>
<tr>
<td>Servings Per Container 96</td>
<td>Servings Per Container 96</td>
</tr>
<tr>
<td><strong>Amount Per Serving</strong></td>
<td><strong>Amount Per Serving</strong></td>
</tr>
<tr>
<td>Calories</td>
<td>120 Calories from Fat 120</td>
</tr>
<tr>
<td>Calories from Fat 120</td>
<td></td>
</tr>
<tr>
<td>% Daily Value*</td>
<td></td>
</tr>
<tr>
<td><strong>Total Fat</strong> 14g</td>
<td>22%</td>
</tr>
<tr>
<td>Saturated Fat 2g</td>
<td>10%</td>
</tr>
<tr>
<td>Trans Fat 0g</td>
<td></td>
</tr>
<tr>
<td>Polyunsaturated Fat 9g</td>
<td></td>
</tr>
<tr>
<td>Monounsaturated Fat 3g</td>
<td></td>
</tr>
<tr>
<td>Calories</td>
<td>120 Calories from Fat 120</td>
</tr>
<tr>
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<td>13%</td>
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<tr>
<td>Trans Fat 2g</td>
<td></td>
</tr>
<tr>
<td>Polyunsaturated Fat 5g</td>
<td></td>
</tr>
<tr>
<td>Monounsaturated Fat 4g</td>
<td></td>
</tr>
</tbody>
</table>

Refer to the Harvard Women’s Health Watch on how to compare fats. They look at fats this way.

**The Good** – monounsaturated fats and polyunsaturated fats

**The Bad** – Saturated fats

**The Ugly** – Trans unsaturated fats

The low linolenic soybean oil has two major food applications – Baking and Frying. The baking
applications include making cookies, crackers, and breads. The frying applications include frying food in restaurants and the preparation of frozen fried foods sold in stores. Tests on frying applications have demonstrated that the 1% linolenic soybean oil has a longer frying life, no trans fat, and an improved food appearance. The potential to use the 1% linolenic soybean oil in the frying industry is huge.

Producer requirements for growing the oil include strict identity preservation, purity, and traceability. Normal soybeans contain 7-8% linolenic acid and cannot be allowed to mix with the 1% linolenic soybeans. The low level of linolenic acid is what allows the oil to be stable without hydrogenation. Premiums for growing this soybean will vary depending on who the soybean is being grown for. Those producers growing the non-GMO varieties should be able to double their premium potential compared with the premium paid only for non-GMO protein.

Over 25,000 acres of the Iowa State 1% linolenic soybeans were grown in 2004 and produced more than 1 million bushels. Some of those bushels will be crushed for oil and the remainder will be held for seed for the 2005 crop year. It is estimated that we could need the oil from 1 million acres in 2005. Iowa State University has two 1% linolenic varieties, IA2064 and IA3017. Yield results from the two varieties being used this year suggest that there may be a small yield drag, depending on what you compare them with. Common yield levels in 2004 have been in the low to mid 50-bushel range. Seed supply for 2005 is good for both of varieties. ISU also has three varieties with 2.5% linolenic acid, but the performance of the 2.5% oil have not as yet been tested. The 2.5% varieties include: IA2065, IA3018 & IA3019. These varieties all have top yield potentials. More varieties are in the hopper at ISU.

Many companies and groups are already involved in the production, research, processing, and marketing of the 1% linolenic soybeans. Monsanto, Pioneer, & Iowa State University have the genetics; Bunge, Cargill, IGP, & Zeeland are working on processing; and producer groups like Asoyia and Innovative Growers are trying to put the whole package together.

To get involved growing 1% linolenic soybeans, you need to contact someone who has seed to sell or is wanting to contract with growers to produce soybeans to crush for oil in 2005. A listing of those people can be found at http://www.notrans.iastate.edu. The Web site also includes yield information as well as other data pertaining to the ISU linolenic soybean project.