



Formulating Products with Heart Healthy Sunflower Oil



Presented to British Columbia Food Technologists
March 2, 2011

NSA

- Based in North Dakota, the NSA is a non-profit organization consisting of farmers, processors and exporters. The NSA is focused on market development, education, production and utilization research
- Canada is the #1 export market of refined sunflower oil, with exports growing year over year
- Increased and consistent supply of sunflower oil will continue to be available to food manufacturers and foodservice operations

Health Canada

- Health Canada acknowledges the role of healthy fats in the diet. The Food Guide recommends that Canadians consume 30 to 45 mL (2 to 3 Tbsp) of unsaturated fats or oils, such as sunflower oil, each day.
- Health Canada has called on the food industry to voluntarily reduce the level of trans fat in Canadian food to a limit of 2 per cent of the total fat content for vegetable oils and soft, spreadable margarines and a limit of 5 per cent of the total fat content for all other foods, including products sold to restaurants.
- In Canada, the trans level must be $<0.2\text{g}$ / serving to declare 0 on the nutrition panel. To make a trans-free claim, the food must contain $<0.2\text{g}$ of trans per reference amount and serving size and the food provides 15% or less energy from the sum of saturated and trans fatty acids.

Canadian Perceptions of Sunflower Oil



- 86% of Canadians believe sunflower oil is a healthy oil¹
 - Highest in Atlantic Canada (91%)
 - Highest among older adults 55+ (88%)
 - Highest among Quebecers with children (89%)
- 75% of Canadians indicate that they are interested in purchasing products made with sunflower oil¹
 - Highest in Quebec (78%)
 - Purchase intent is highest among adults 35+
 - Women slightly higher interest than men (77% vs 74%)
- 42% of Canadians say that they would purchase a product that is labeled with the words "Now made with Sunflower Oil"²
- 93% of Canadian chefs believe that sunflower oil is a good choice for deep frying³

1 Research conducted by IPSOS-ASI Ltd., January 2010

2 Research conducted by Market Solutions LLC, April 2005

3 Research conducted by Starch Research Services, September 2008

Sunflower Oil Applications

- An excellent choice for :
 - Snack food formulations
 - Deep frying
 - Par frying of frozen foods
 - Marinades and sauces
 - Spice and dehydrated food mixtures
 - Salad dressings
 - Soy beverages
 - Spray coatings for dried fruits, breads and other bakery items
 - Bakery formulations
 - Wok cooking

What types of Sun Oil are available?



- 2 types of naturally stable sunflower oil are available in Canada:
 - High-Oleic
 - 82% Monounsaturated fats (Omega 9)
 - 9% Polyunsaturated fats (Omega 6)
 - 9% Saturated fat
 - Trace of Omega 3
 - Mid-Oleic (NuSun®)
 - 65% Monounsaturated fats (Omega 9)
 - 26% Polyunsaturated fats (Omega 6)
 - 9% Saturated fat
 - Trace of Omega 3

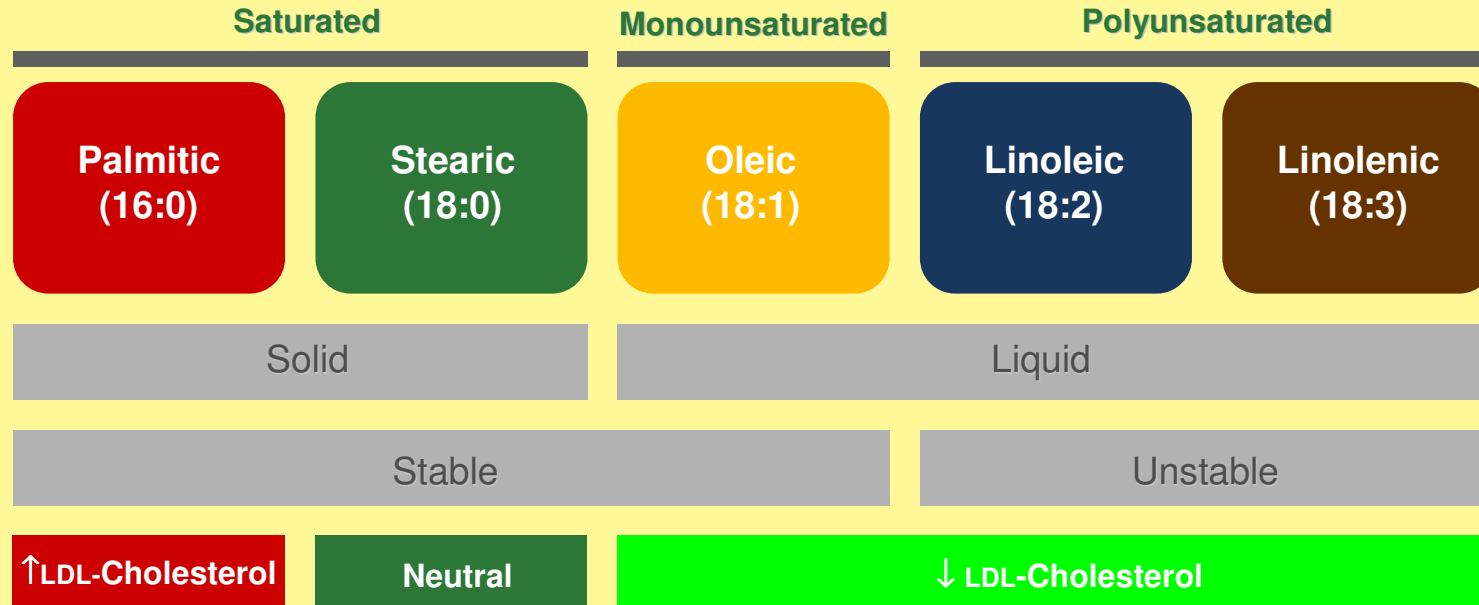
NuSun® is a registered trademark of the National Sunflower Association

Nutrisun

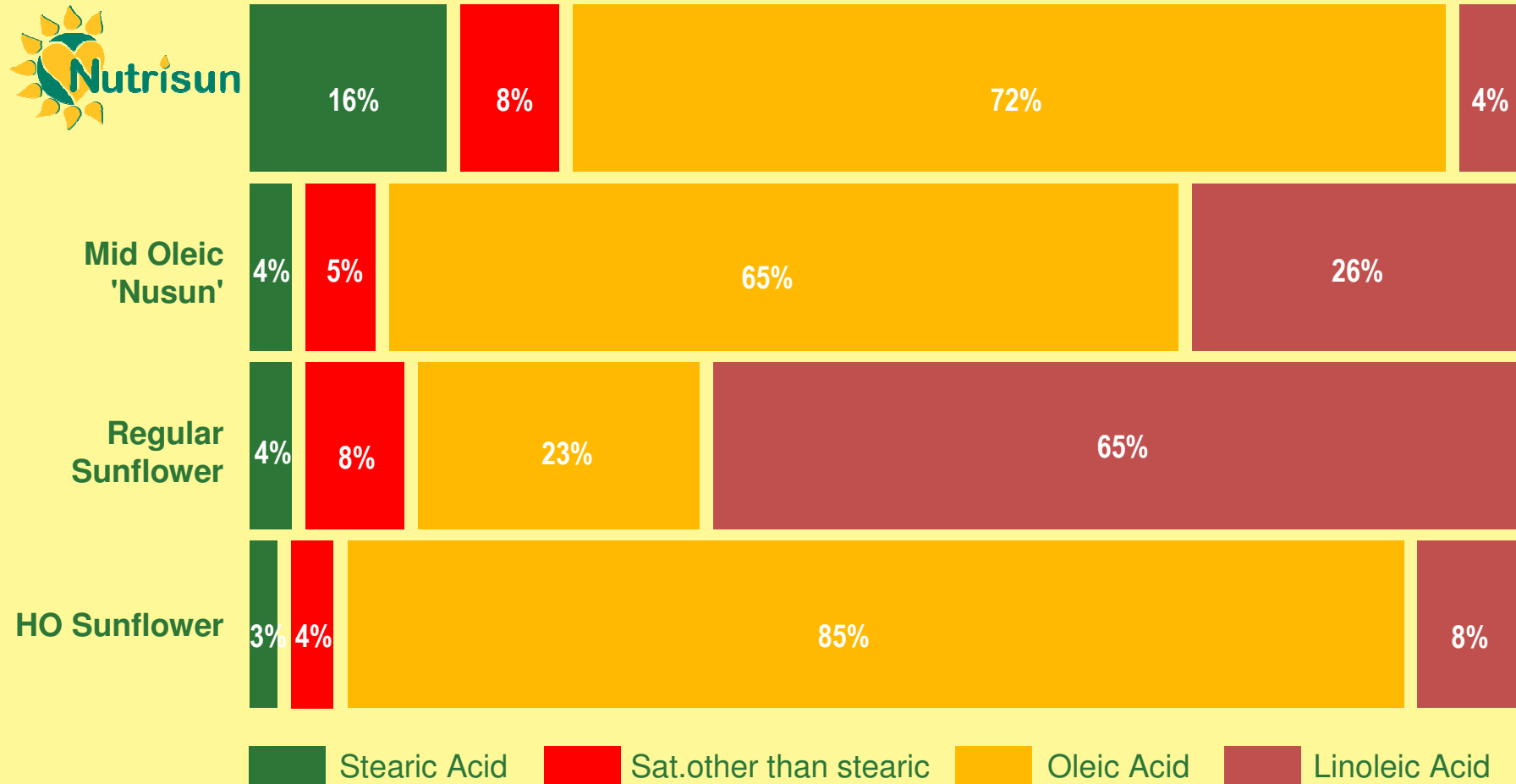
- High Stearic High Oleic Sunflower developed using conventional hybrid plant breeding
- Stearic acid is the only fatty acid that yields solid fats that are not harmful to one's health
- Solid or semisolid at room temperature
- Superior stability
- Solution for replacing palm oil/coconut oil and other saturated fats
- Ideal for bakery products, icings/fillings, confectionery, margarines, ice cream, frying

Nutrisun fatty acid profile

High Stearic High Oleic Sunflower



Nutrisun vs. other types of Sunflower Oil



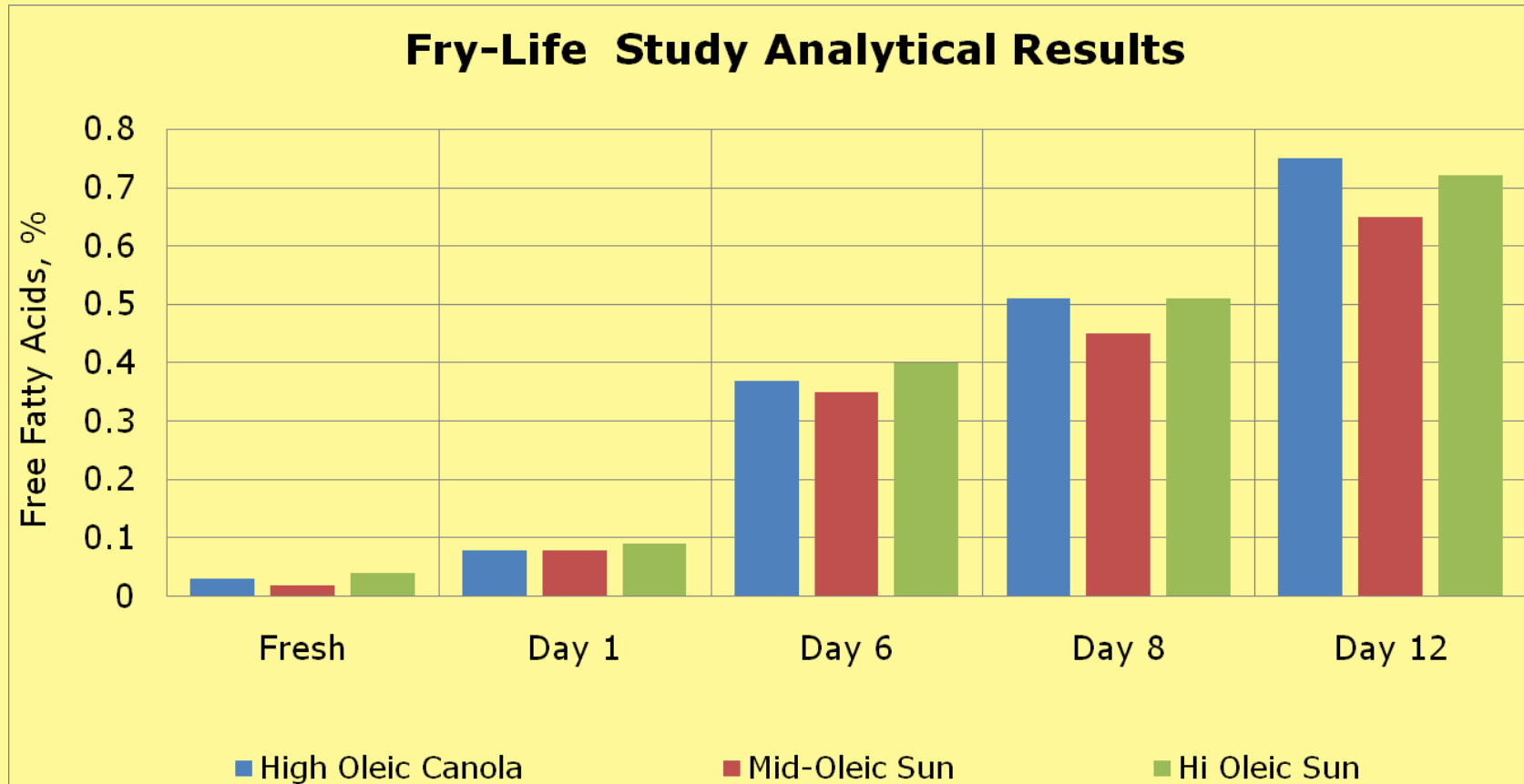
Why should your customers buy Sunflower Oil?



Sun Oil has an excellent fry life and high smoke point (450°F)

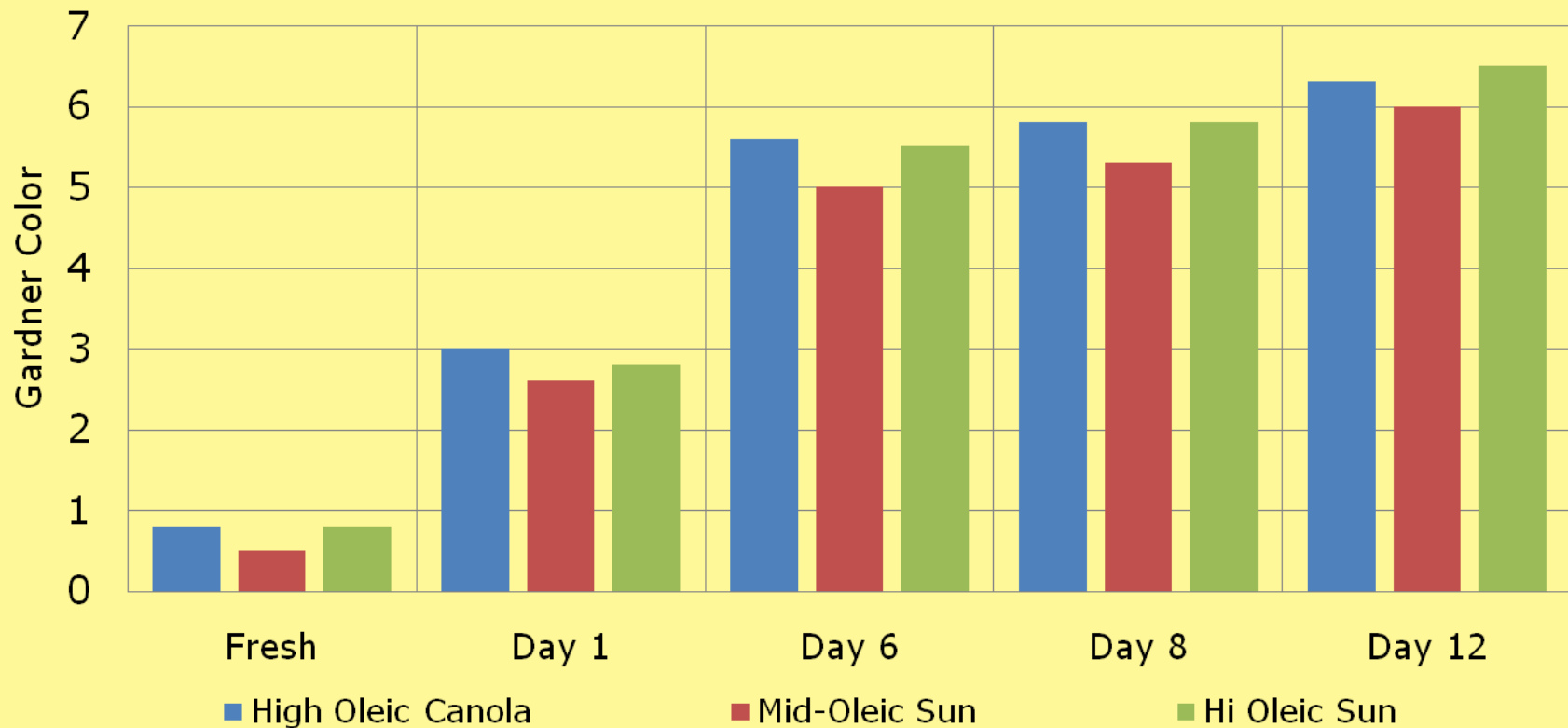
- A recent fry study was conducted by a US-based oil refiner.
- All oils had ~180 PPM of TBHQ and ~2 PPM of methyl silicone added to them
- 45 lbs. of frozen, par-fried hash browns and 108 lbs. of French fries were deep fried for 8 hrs./day for 12 days in the different oils
- Each oil was filtered daily with a paper filter
- Each oil sample was checked for free fatty acids (FFA) and Gardner colour

Fry-Life Study Results



Fry-Life Study Results

Fry-Life Study Analytical Results



Why should your customers buy Sunflower Oil?



Sun oil has an excellent shelf life

- High and mid-oleic sunflower oils have only a trace of linolenic acid (Omega 3)
- As a result, sun oil is more stable and has a longer shelf life than high oleic canola oil (3% linolenic acid), regular soybean oil (7% linolenic acid)

Why should your customers buy Sunflower Oil?



Sun Oil is ideal for blending

- Sun oil can be blended with canola oil
- Sun oil can be added to shortening products

Why should your customers buy Sunflower Oil?



Sun oil is flavour neutral, so the true taste of food comes through

The degradation of linolenic acid, found in most oils, can be a source of off-flavour in foods. Sun oil has only trace amounts of linolenic acid, making it an excellent choice for food formulation

- Tests compared the taste of potato chips cooked in mid-oleic sunflower oil with those cooked in other oils. After four days of storage, the chips cooked in sunflower oil had a delicious, light taste that was significantly better than the taste of the chips cooked in other oils

*Research conducted at USDA/ARS National Center for AG Utilization
Research, Peoria. IL, by Kathleen Warner*

Why should your customers buy Sunflower Oil?



Sun oil has excellent health benefits

- Sun oil is non-GMO, trans fat free and low in saturated fat (9%)
- A recent study¹ by U of T researcher Dr. David Jenkins appeared in the CMA Journal and showed that the intake of monounsaturated fats, particularly those found in sunflower oil, can boost HDL (good cholesterol)
 - Study participants replaced bread and sugar with 1 Tbsp. of high-oleic sunflower oil at breakfast, lunch and dinner
 - After four weeks, HDL levels of good cholesterol increased by 12.5%

¹ Jenkins, DJA et al. *Adding monounsaturated fatty acids to a dietary portfolio of cholesterol lowering foods in hypercholesterolemia*. CMAJ. Published online ahead of print November 1, 2010. (10.1503/cmaj.092128)

Why should your customers buy Sunflower Oil?



Sun oil has excellent health benefits

- Naturally high in Vitamin E and monounsaturates, sun oil provides heart health benefits
- In a study done by Dr. Penny Kris-Etherton, Penn State University, participants used 2 Tbsp.(30mL) of NuSun® or olive oil to replace saturated fat, to see how it affected their cholesterol levels
- Results:
 - Olive oil diet - No significant lowering of cholesterol
 - NuSun® diet - Lowered total cholesterol by 4.7%
 - Lowered LDL cholesterol by 5.8%
 - Balance of fatty acids in NuSun provides the benefit (higher PUFA than olive oil)

Binkoski,A., Kris-Etherton,P, Wilson,TA, Mountain,ML, Nicolosi RJ. Balance of unsaturated fatty acids is important to a cholesterol-lowering diet: comparison of mid-oleic sunflower oil and olive oil on cardiovascular disease risk factors. Journal of the American Dietetic Association, July 2005, Vol. 105,No. 7.

Future of Sun Oil

- Higher CDN \$ should assist with pricing
- Increased growth and consistent supply of sun oil will continue
- Latest USDA figures indicate sun oil crops expanded in several states and yields in Fall 2011, continued to be high

Questions?

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Visit the National Sunflower Association web site:

www.sunflowernsa.com