



Canadian Restaurant and Foodservices Association

How to Reduce or Eliminate Trans Fats in Menu Items

Guidelines and a User's Guide
for Foodservice Operators

Prepared For CRFA
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TRANS FATS AND A ROLE FOR THE CANADIAN RESTAURANT AND FOODSERVICES ASSOCIATION (CRFA)



Widespread concern about the adverse effects of trans fatty acids (trans fats) is being addressed by research, public health, government and food industry sectors. Scientific evidence has established that trans fatty acids raise blood levels of LDL or “bad” cholesterol and reduce levels of HDL or “good” cholesterol, which results in a cholesterol profile associated with an increased risk of heart disease. Public health guidelines on trans fat consumption recommend reducing trans fat intakes to the lowest level possible. Nutrition labelling regulations require trans fat content to be declared on the nutrition panel of retail foods and provided for foods and ingredients used in the manufacture of other foods, including foods and ingredients supplied to restaurants and other foodservice establishments.

Efforts to address trans fats are reflected in a multi-stakeholder Trans Fat Task Force co-chaired by Health Canada and the Heart and Stroke Foundation of Canada to develop recommendations and strategies to eliminate or reduce industrially produced (processed) trans fats in foods to the lowest level possible. The Task Force issued its interim report in 2005 with a key recommendation for the restaurant and foodservices sector:

While nutrition labelling is not mandatory in foodservice establishments, CRFA has already worked with its members to develop guidelines for voluntary provision of nutrition information to consumers in chain restaurants. Therefore, the Task Force recommends that the national foodservice industry association, in collaboration with government and other stakeholder groups as appropriate, develop and disseminate a guide on how foodservice operators can reduce trans fat content. Suggestions include modifying recipes and selecting ingredients and ready-to-serve food products containing less trans fat based on the nutrient information that will be required to be provided by suppliers under the nutrition labelling regulations.

As a member of the Trans Fat Task Force, CRFA supports this recommendation and has developed guidelines to assist foodservice operators to reduce or eliminate trans fats in foods sold in their establishments and a user’s guide on how to reduce the trans fat content of menu items. The CRFA guidelines and user’s guide are based on information provided to the Task Force.

The following trans fat limits on foods and ingredients purchased by restaurants are recommended to help achieve elimination of processed trans fats from all menu offerings:

| | |
|---|---|
| <i>Vegetable oils and margarines used as spreads</i> | <i>2% trans fat content per total fat</i> |
| <i>All other foods and ingredients (including other margarines, not used as spreads, and shortenings)</i> | <i>5% trans fat content per total fat</i> |

It is important to note that ruminant meats and dairy products are sources of naturally occurring trans fats and in some cases the trans fat content exceeds 5% of total fat (for example, in lamb and some butters and cheeses). Where feasible, it is recommended that foodservice operators choose leaner cuts of meat and lower fat dairy products.

It is anticipated there will be government requirements limiting the trans fat content of all foods sold in Canada within the next four years. The CRFA guidelines and user’s guide will help foodservice operators to prepare for compliance with any new regulations and meet growing consumer demand for products that do not contain trans fats.

GUIDELINES ON REDUCING OR ELIMINATING TRANS FATS IN FOODS SOLD IN RESTAURANTS AND OTHER FOODSERVICE ESTABLISHMENTS

CRFA has developed a set of guidelines to assist foodservice operators to reduce or eliminate trans fats in foods sold in restaurants and other foodservice establishments. The Trans Fat Task Force has noted that one quarter to one third of the trans fat intake of Canadian adults is provided by foods

consumed away from home. These guidelines will help you to reduce the trans fat content of your menu items and support the restaurant and foodservices sector in contributing to the multi-stakeholder effort aimed at lowering trans fat intakes of all Canadians.



CRFA GUIDELINES

- When available, purchase foods and ingredients used in the preparation of menu items, as well as ready-made foods and ingredients, that are consistent with the recommended limits on trans fat content as follows:

| VEGETABLE OILS | 2% trans fats* |
|---|---|
| Margarines used as spreads - soft, spreadable (tub-type) | 2% trans fats* |
| Ready-made foods and ingredients - including hard margarines (not used as spreads) and shortenings | 5% trans fats* |
| Food products for which the fat originates exclusively from ruminant meat and/or dairy sources - single ingredient meat or dairy food - multiple ingredient foods or ingredients containing fat exclusively from ruminant meat and/or dairy sources | No trans fat limit but lower total fat products are recommended |

* % trans fat of total fat in the purchased food or ingredient

- Vegetable oils, margarines and other ingredients exceeding the trans fat limits should be replaced in a way that maintains as much as possible the characteristics of the menu item. In some circumstances, you may need to change your preparation methods or replace the menu item with a new product.
- Depending on the preparation methods and menu item, the functionality criteria that should be considered include, but are not limited to, taste, odour, texture and other organoleptic properties, oxidative stability in frying and storage and other functionalities such as emulsification, lamination and structure.
- Vegetable oils, margarines and other ingredients exceeding the trans fat limits should be replaced in a way that is healthful and does not add fatty acids or other ingredients with undesirable health effects.
- Depending on availability and required functionality and considering health effects, first choices should be low trans fat alternatives containing monounsaturated and polyunsaturated fatty acids. Alternatives containing cholesterol-raising saturated fatty acids should be limited.
- Menu items in which the total fat content can be virtually removed and/or substituted with non fat ingredients and other menu item modifications for reducing and eliminating total fat content can be explored where feasible and appropriate.
- Foodservice operators are encouraged to ask their suppliers for viable and ready-to-use low trans fat alternatives. Operators should request nutrient information on existing and new foods and ingredients from their suppliers, who must provide this information under the nutrition labelling regulations.



- Foodservice companies are encouraged to work with food processing development centres and suppliers to reformulate menu items and modify food preparation methods.
- Costs of new foods, ingredients and preparation methods should be considered. The aim should be to maintain, where possible, current purchasing and operating cost structures in order to provide competitive consumer pricing.
- Companies who wish to undertake advertising and other communication messages are encouraged to do so within the context of healthy eating and *Canada’s Food Guide*. Claims on menu items such as “low trans fat” or “trans fat free” must be made in compliance with the regulatory requirements as addressed in *CRFA’s Users Guide to Implementing Voluntary Guidelines for Providing Nutrition Information to Consumers* and *CFIA’s Information Letter: Nutrient Content Claims and Foods Sold in Restaurants and Foodservice Establishments*.

A USER’S GUIDE FOR FOODSERVICE OPERATORS ON REDUCING THE TRANS FAT CONTENT OF MENU ITEMS

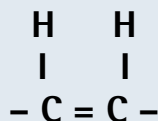
This guide has been designed as a general reference document to help you implement CRFA’s guidelines on reducing or eliminating trans fats in foods sold in restaurants and other foodservice establishments. It outlines a preliminary approach to reducing the trans fat content of your menu offerings on the basis of your purchase inputs. These inputs are all your food and ingredient purchases, including ready-made foods (e.g., lasagna) that you offer at your establishments and ready-made ingredients (e.g., meat sauce, pie crust) that you use to prepare your menu items. They also include fats that you buy as ingredients (e.g., vegetable oils, margarines, shortenings) for your recipes for foods prepared on the premises (e.g., shortening to make pie crust from scratch) and for food preparation methods (e.g., oil for deep frying). In the case of margarines, these include soft (tub-type) margarines used as spreads and/or provided on the side (e.g., in single-serve margarine cups) as well as hard margarines used in recipes. The general steps and considerations in this guide are intended to serve as a starting point for your particular needs and applications.

TRANS FATS “101”

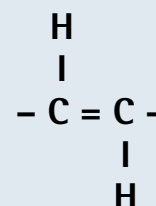
All animal and plant sources of fats contain fatty acids, which can be either monounsaturated, polyunsaturated or saturated. Processed trans fats are formed when monounsaturated and polyunsaturated fatty acids are partially hydrogenated so that the hydrogen ends up on the opposite or “trans” side of the carbon double bond in the monounsaturated or polyunsaturated fatty acid (instead of on the same or “cis” side). This trans configuration is important because it determines many of the functional characteristics in preparation methods and finished products, for example, imparting a crisp texture to fried foods, allowing icing to set properly and helping baked products to stay fresher longer.

One of the main challenges in choosing low trans fat alternatives is to maintain the functional characteristics that you require in your recipes and food preparation methods. It will be important to keep in mind the functional characteristics you require in your specific applications as you follow through this user’s guide to determine how to reduce or eliminate trans fats in your menu offerings.

**Cis (same side)
Unsaturated Double Bond**



**Trans (opposite side)
Unsaturated Double Bond**

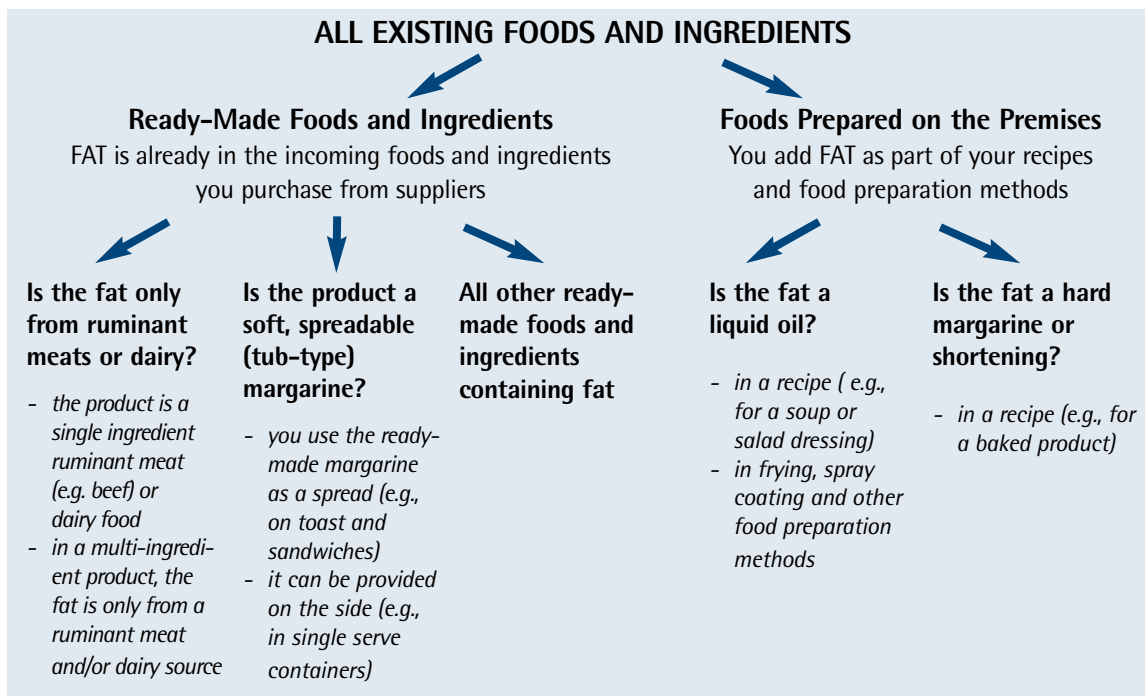


STEPS TO REDUCE OR ELIMINATE TRANS FATS

The remainder of this guide outlines three general steps to help you through this process. These steps are to identify the sources of fat in your purchased foods and ingredients and recipes and preparation methods; to calculate the trans fat content of these fat sources to compare it to the recommended trans fat limits; and, to determine appropriate alternatives when the trans fat content exceeds the recommended limits. Each step is described in detail in the following sections.

STEP 1 – Identify fat sources in your foods, ingredients and preparation methods

This step involves identifying the sources of fat in your purchased ready-made foods and ingredients, foods made on the premises and food preparation methods. You need to know your existing fat sources to get an indication of where trans fats might be found. The following flow chart provides an easy way to determine where fats could be found.



STEP 2 – Determine the trans fat content of all incoming foods and ingredients

Now that you have identified the fat sources in the foods and ingredients you purchase and in your

recipes and food preparation methods, the next step is to determine the trans fat content as a percent of total fat in all the foods and ingredients containing fat, and compare this value with the recommended limits in the table below:

| FOOD OR INGREDIENT | TRANS FAT LIMIT* (AS % OF TOTAL FAT) |
|---|---|
| Vegetable oils | 2% |
| Margarines used as spreads - soft, spreadable (tub-type) | 2% |
| Ready-made foods and ingredients - including hard margarines (not used as spreads) and shortenings | 5% |
| Food products for which the fat originates exclusively from ruminant meat and/or dairy sources - single ingredient meat or dairy food - multiple ingredient foods or ingredients containing fat exclusively from ruminant meat and/or dairy sources | No trans fat limit but lower total fat products are recommended |

* Trans Fat Task Force Final Report (June 2006)



Knowledge of the trans fat content in these applications in comparison with the trans fat limits is necessary to help you decide where you might require replacements and modifications. For ease of reference, the calculations and assessments below use a framework that is conducive to the foodservice setting (*i.e.*, ready-made foods and ingredients as one group and recipes and food preparation methods as another) and are presented in the same order as the flow chart in Step 1.

2a) No calculation is required on ready-made single ingredient ruminant meat or dairy foods or ready-made multi-ingredient foods and ingredients containing fat that originates exclusively from meat and/or dairy sources

There is no trans fat limit, and thus no trans fat calculation is required, on single ingredient ruminant meat or dairy foods (*e.g.*, cut of beef, cheese, butter) or foods and ingredients containing fat that comes only from a ruminant meat or dairy source (*e.g.*, white sauce containing butter and cream, but no other non-ruminant meat or non-dairy sources of fat).

Although no action is required when the fat originates exclusively from ruminant meat and/or dairy sources, you should opt for lower fat cuts of meat and dairy products when purchasing these products. Leaner meats, lower fat dairy products and limited use of beef tallow, lard and butter are recommended to help meet healthy eating guidelines and reduce the risk of heart disease. It is also important to note that if a non-ruminant meat or non-dairy source of fat is in a food or ingredient (*e.g.*, a white sauce that contains butter and cream and also vegetable oil or hard margarine) then the trans fat limits apply (*see next Step 2b*).

2b) Calculate the trans fat content of all other foods and ingredients containing fat, including soft (tub-type) margarines used as spreads, ready made foods and ingredients, and vegetable oils and hard margarines and shortenings used in your recipes and food preparation methods

Ready-made foods and ingredients include margarines used as spreads, ready-made foods that you purchase as menu items (*e.g.*, ready-to-heat lasagna, ready-mix muffins) and ready-made ingredients for use in your menu items (*e.g.*, pie crust, sauce base). Other purchase inputs include vegetable oils, hard margarines and shortenings as the fat ingredients that you use in your recipes and food preparation methods.

This step involves determining the trans fat content as a percent of total fat in foods and ingredients that contain fat (*as determined in Step 1*) and comparing this value with the trans fat recommended limits. Your product suppliers might be able to provide this value or you can calculate it using grams of trans fat and total fat from the nutrient information suppliers are obligated to provide under the nutrition labelling regulations.

You can then assess the trans fat content you calculated against the recommended trans fat limits. If the products exceed these limits, you will need to purchase compliant alternatives from existing and/or new suppliers. The alternatives should be of similar quality and cost as your existing products. In the case of vegetable oils, hard margarines and shortenings, you will need to find compliant alternatives that still provide the functional characteristics you require in your recipes and food preparation methods.

These calculations and action steps are summarized in the table below:



Information from product suppliers of ready-made foods and ingredients:

(i.e., FAT is already in the incoming foods and ingredients you purchase from suppliers)

- ✓ Grams trans fat in a specified amount of the ready-made food or ingredient
- ✓ Grams total fat in the same specified amount of the ready-made food or ingredient

Trans fat calculation:

① $(\text{Grams trans fat} / \text{grams total fat}) \times 100 = \% \text{ trans fat of total fat}$

Action – shop around for another product if:

- X Soft (tub-type) margarines used as spreads contain more than 2% trans fat of total fat
- X Other ready-made foods and ingredients contain more than 5% trans fat of total fat

Information from ingredient suppliers of liquid oils, hard margarines and shortenings:

(i.e., You add FAT as part of your recipes and food preparation methods)

- ✓ Grams trans fat in a specified amount of the oil, hard margarine or shortening
- ✓ Grams total fat in the same specified amount of the oil, margarine or shortening
(if the ingredient is 100% fat, grams total fat will be the same as grams of the ingredient)

Trans fat calculation:

① $(\text{Grams trans fat} / \text{grams total fat}) \times 100 = \% \text{ trans fat of total fat}$

Action – replace existing ingredient if:

- X Liquid oils contain more than 2% trans fat of total fat
- X Hard margarines and shortenings contain more than 5% trans fat of total fat

STEP 3 – Select, test and implement workable low trans fat alternatives

In the case of ready-made foods and ingredients, foodservice operators purchase a wide range of products specific to their menu offerings. This general user's guide cannot capture all such ready-made scenarios. Furthermore, there is no action step for restaurants and other foodservice establishments (other than to purchase compliant ready-made products) because manufacturers will be responsible for making and selling ready-made products within the new trans fat limits. They might also include "low fat" or "fat free" versions of some ready-made products in which the trans fat content is insignificant (if less than 0.2 grams trans fat), as is now available for some foods (e.g., coffee whiteners, croutons).

Since trans fat requirements are expected to apply across the food industry (including retail) more and more ready-made food and ingredient producers will be developing compliant products. You are encouraged to approach suppliers to ensure the needs of the restaurant and foodservices sector are met as new products are being developed.

In the case of vegetable oils, hard margarines and shortenings, the selection of ingredients with lower trans fat content may require you to revisit your recipes and food preparation methods. Considerations for doing so are provided in the following sections.



3a) Gather information on recipes and food preparation methods

This step involves collecting information on your recipes and food preparation methods where you use liquid oils, hard margarines and shortenings and noting the functional characteristics required in these applications. This information can provide a starting point for choosing low trans fat alternatives applicable to your specific recipe and food preparation needs. The following table lists the information to consider. You might also have other products and applications not listed here.

| Where Used | Product or Application | Functional Characteristic – Which one(s) is key to your product or application? |
|------------------|--|--|
| Recipe | Bakery product Refrigerated dessert Frosting or glaze Salad dressing Sauce or marinade Soup or stew Egg dish | Flavour (of the fat source) Overall product taste profile Mouthfeel (smooth texture) Layering (structure in a baked product) Other product structure Crispiness Other product texture or form Higher melting point (solid at room temperature) Heat transfer Emulsification |
| Food preparation | Deep frying Quick frying Sautéing Non stick spraying Non stick coating Brushing on product | Lamination Browning Non sticking (lubricant in food preparation) Oxidative stability Storage stability Odour |

3b) Select appropriate low trans fat alternatives

This step involves selecting the appropriate low trans fat alternatives for your recipes and food preparation methods. The following table is a top-line guide for doing so. It provides very general information to help you choose alternatives consistent with the CRFA guidelines on reducing or eliminating trans fats in a way that is both functional in your applications and considers the health effects of the alternatives. The table outlines the spectrum of all alternatives (including those not recommended), and their applications, notes on functionality and health, and some recommendations and next steps.

As you work through your selections, it is important to note that some products and applications will be easier to transition out of trans fats and others will be more challenging. Since trans fats in restaurants and other foodservice establishments are associated primarily with deep fried products, a priority should be to replace your frying oils with a viable alternative such as high oleic and low linolenic oils, which some companies are already using successfully. It will be more challenging to replace trans fats used for baking and other applications where a hard fat is required.

The intent of the top-line information in the following table is to instigate the questions for you to ask oil and fat manufacturers and suppliers (*as determined in Step 3a*) as you seek low trans fat alternatives for your recipes and food preparation methods. Detailed information on alternatives listed by specific uses is provided

ed in Appendix 1. You are encouraged to work closely with suppliers to combine your needs with the available alternatives, including checking their compliance with the recommended trans fat limits (*as in Step 2b*). A list of some manufacturers and suppliers of oils and fats is provided in Appendix 2.



| Alternative* | Generally Best Suited For* | Some Notes* on Function and Health Considerations | General Recommendations and Next Steps |
|--|----------------------------|---|---|
| Lard and beef tallow | Baking | <ul style="list-style-type: none"> - Good oxidative stability - High saturated fat | <ul style="list-style-type: none"> - Do <u>not</u> use |
| Fully hydro-genated vegetable oils | Baking | <ul style="list-style-type: none"> - High saturated fat | <ul style="list-style-type: none"> - Do <u>not</u> use |
| Tropical oils (e.g., palm, palm kernel and coconut oils) | Baking | <ul style="list-style-type: none"> - High melting point - Good shelf life for baked products - Off flavour from lauric acid - High saturated fat | <ul style="list-style-type: none"> - Do <u>not</u> use - Or only as a <u>very last</u> choice if all other options are exhausted |
| Chemical or enzymatic interesterification of hydrogenated vegetable oil or tropical oil with liquid vegetable oil | Baking | <ul style="list-style-type: none"> - Melting point similar to shortenings (more solid at room temperature) - Oxidative stability depends on the oil used - No trans fat - Low saturated fat | <ul style="list-style-type: none"> - Test various candidates for desired results in your specific applications - Costs are generally higher |
| Blending of partially or fully hydrogenated vegetable oils or tropical oils with liquid vegetable oils | Baking Frying | <ul style="list-style-type: none"> - Less stable than partially hydrogenated oil - Varying fluidity and different sensory characteristics depending on the oils used in the blend - Small (insignificant) amount of trans fats still evident | <ul style="list-style-type: none"> - Test various candidates for desired results in your specific applications - Choose mixture of saturated fatty acids from natural oils to dilute undesirable health effects of a single cholesterol raising saturated fatty acid (<i>i.e., when a hard saturated fat is still required</i>) |
| Plant breeding of oil seeds to contain lower levels of unstable poly-unsaturated fatty acids and higher levels of more stable monounsaturated fatty acids (e.g., oleic acid) | Frying | <ul style="list-style-type: none"> - No trans fat - Low saturated fat | <ul style="list-style-type: none"> - Test various candidates for desired results in your specific applications - Check on availability and watch for new products (<i>supplies are continually increasing</i>) |

* Assimilated from meeting synopsis (April 2004 document) of Health Canada consultation with members of the Expert Committee on Fats, Oils and Other Lipids



3c) Test and implement workable solutions

Once you have a general indication of your needs and the available low trans fat alternatives, the next step involves testing potential candidates in your recipes and food preparation methods and incorporating the alternatives that produce successful results. You are encouraged to test a few options as identified in your discussions with manufacturers and suppliers before finalizing any decisions and fully changing your recipes and food preparation methods. You can choose to carry out your own simple modifications and test basic functional characteristics such as effects on taste. You are also encouraged to test reformulated recipes and process modifications with suppliers and food product development centres with expertise in these areas. These centres should also be able to help you to select potential workable alternatives (*per Step 3b*). A list of some food product development centres is provided in Appendix 3.

Another option (though likely less feasible) is to investigate recipes and food preparation methods where liquid oils and margarines and other shortenings can be entirely removed or reduced to a level so low that the fat content is in essence eliminated. One method for removing fat is to use protein or carbohydrate based “fat replacers” designed to provide some of the same functional characteristics as fat. Food product development centres might be able to assist you with these investigations.

3d) Consider costs

Evaluation of the purchase and operating costs associated with switching to low trans fat alternatives is not a separate step, per se, and you are encouraged to consider such costs throughout the entire process of reducing or eliminating trans fats in your menu items. Although availability, functionality and health considerations are among the foremost deciding factors on low trans fat alternatives, your aim should also be to maintain current costs or keep any cost increases to a minimum to provide competitive consumer pricing. If costs are too steep and necessitate an increase in menu prices, negative impacts could occur on your business and across the restaurant and foodservices sector and the economy as a whole. As with any new market, it is anticipated the costs of low trans fat alternatives will level off with ongoing technological advancements and a maturing market.

STEP 4 – Practice responsible communications and claims

- Communicating with your patrons regarding the steps you have taken to reduce and eliminate trans fats from your menu items will allow consumers to make informed dietary choices. It is reasonable to inform your patrons about the types of fat in the foods and ingredients you use. Any resultant nutrient content claims such as “trans fat free” or “lower in trans fat” would be on a menu item basis (not per ingredient) and in compliance with the regulatory requirements for providing nutrition information for foods sold in restaurants and other foodservice establishments. These requirements are outlined in *CRFA’s Users Guide to Implementing Voluntary Guidelines for Providing Nutrition Information to Consumers* and *CFIA’s Information Letter: Nutrient Content Claims and Foods Sold in Restaurants and Foodservice Establishments*. Such claims should also be made within the context of overall healthy eating as described in *Canada’s Food Guide*.

APPENDIX 1 – DETAILED TABLE ON LOW TRANS FAT ALTERNATIVES (Step 3b)

“Recommended Healthier Alternatives for Replacement of Trans Fats by Food Applications”

* Adapted from Trans Fat Task Force Final Report (June 2006)

* MUFA = monounsaturated fatty acid; PUFA = polyunsaturated fatty acid; PK = palm kernel;

CHD = coronary heart disease

* + denotes a positive health effect; – denotes a negative health effect



| Type of Application | Recommended Alternatives | Type of Oils | Characteristics | Comments on Health Effects |
|--|--|---|--|--|
| Frying fats | Medium and high stability vegetable oils | High oleic canola High oleic sunflower | High in MUFA Small amount of n-6 and n-3 PUFA Low in saturates Better oxidative stability than general vegetable oils | + Improved fatty acid profile including ratio of n-6 to n-3 fatty acids + May contribute to a diet which reduces CHD risk |
| | | Low linolenic soya Mid oleic sunflower | High in MUFA or n-6 PUFA Low in saturates Better oxidative stability than general vegetable oils | – Increased ratio of n-6 to n-3 fatty acids + May contribute to a diet which reduces CHD risk |
| Consumer and foodservice margarines (soft) | Interesterified oils with vegetable oil | (Palm and palm kernel [PK] stearins) with canola oils | High in MUFA Moderate in n-6 High in n-3 PUFA Low in saturates | + Improved fatty acid profile including ratio of n-6 to n-3 fatty acids + May contribute to a diet which reduces CHD risk |
| | | (Palm and PK stearins) with soya oils | Moderate in MUFA High in n-6 PUFA Moderate in n-3 PUFA Moderate in saturates | + Better fatty acid profile than butter and hard margarines which are higher in saturated fatty acid and lower PUFA + Expected to lower total (LDL) / HDL cholesterol ratio |
| | | (Fully hydrogenated vegetable oils and liquid vegetable oils) with vegetable oils | Some MUFA High in n-6 PUFA Moderate in n-3 PUFA Moderate in saturates 2-4% trans | + Better fatty acid profile than butter and hard margarines which are higher in saturated fatty acid and lower PUFA + Expected to lower total (LDL) / HDL cholesterol ratio |
| Consumer and food service margarines (hard) | Interesterified oils with vegetable oil | (Palm and PK stearins) with soya oils | Moderate MUFA and n-6 PUFA Small amount of n-3 PUFA High in saturates | + Better fatty acid profile than butter which is high in saturated long-chain fatty acid + Expected to lower total (LDL) / HDL cholesterol ratio |
| | | (Fully hydrogenated vegetable oils and liquid vegetable oils) with vegetable oils | Some MUFA Moderate in n-6 and n-3 PUFA High in saturates 2-4% trans | + Better fatty acid profile than butter which is high in saturated long-chain fatty acid + Expected to lower total (LDL) / HDL cholesterol ratio |



| Type of Application | Recommended Alternatives | Type of Oils | Characteristics | Comments on Health Effects |
|--|---|---|---|--|
| Baking margarines (soft) | Interesterified oils with vegetable oil | (Palm and PK stearins) with canola oils | High in MUFA Moderate in n-6 PUFA High in n-3 PUFA Low in saturates | + Better fatty acid profile than butter which is high in saturated long-chain fatty acid + Expected to lower total (LDL) / HDL cholesterol ratio |
| | Blending of soft oils + highly saturated oils | Palm oil / palm stearin and general vegetable oils | High in MUFA Moderate in n-6 and n-3 PUFA Moderate in saturates | + Improved fatty acid profile including ratio of n-6 to n-3 fatty acids + Expected to lower cholesterol ratio |
| | Interesterified oils with vegetable oil | (Palm and PK stearins) with soya oils | Moderate in MUFA High in n-6 PUFA Moderate in n-3 PUFA Moderate in saturates | + Better fatty acid profile than butter and hard margarines which are higher in saturated fatty acid and lower PUFA + Expected to lower cholesterol ratio |
| | | (Fully hydrogenated vegetable oils and liquid vegetable oils) with vegetable oils | Some MUFA High in n-6 PUFA Moderate in n-3 PUFA Moderate saturates 2-4% trans | + Better fatty acid profile than butter and hard margarines which are higher in saturated fatty acid and lower PUFA + Expected to lower cholesterol ratio |
| Baking margarines (hard and laminating) | Blending of soft oils + highly saturated oils | Palm oil / palm stearin and high stability vegetable oils | Moderate in MUFA Small amount of both n-6 and n-3 PUFA High in saturates | + Better fatty acid profile than butter which is high in saturated long-chain fatty acid + Expected to lower total (LDL) / HDL cholesterol ratio |
| | Interesterified oils with vegetable oil | (Palm and PK stearins) with soya oils | Moderate MUFA and n-6 PUFA Small amount of n-3 PUFA High in saturates | + Better fatty acid profile than butter which is high in saturated long-chain fatty acid + Expected to lower total (LDL) / HDL cholesterol ratio |
| | | (Fully hydrogenated vegetable oils and liquid vegetable oils) with vegetable oils | Some MUFA Moderate in n-6 and n-3 PUFA High in saturates 2-4% trans | + Better fatty acid profile than butter which is high in saturated long-chain fatty acid + Expected to lower total (LDL) / HDL cholesterol ratio |



| Type of Application | Recommended Alternatives | Type of Oils | Characteristics | Comments on Health Effects |
|--|--|--|--|--|
| Bakery / Food Processor Shortening Solid | Blending oils for solids and performance | Palm oil / palm stearin + medium stability vegetable oils | High in MUFA Moderate in n-6 PUFA High in n-3 PUFA Low in saturates | + Improved fatty acid profile including ratio of n-6 to n-3 fatty acids + Expected to lower cholesterol ratio |
| | Interesterified oils with vegetable oil | (Palm and PK stearins) with canola oil | High in MUFA Moderate in n-6 PUFA High in n-3 PUFA Low in saturates | + Improved fatty acid profile including ratio of n-6 to n-3 fatty acids + Expected to lower cholesterol ratio |
| | | (Palm and PK stearins) with high oleic canola oil | High in MUFA Small amount of both n-6 and n-3 PUFA Low in saturates | + Improved fatty acid profile + Expected to lower cholesterol ratio |
| | Blending oils for solids and performance | Palm oil / palm stearins / fully hydrogenated oil + medium stability vegetable oils | Moderate in MUFA Moderate in n-6 and n-3 PUFA Moderate to high in saturates | + Better fatty acid profile than highly saturated oil shortening or animal fat + Expected to lower cholesterol ratio |
| | Interesterified oils with vegetable oil | (Palm and PK stearins) with high oleic canola oil | High in MUFA Small amount of both n-6 and n-3 PUFA Moderate to high in saturates | + Better fatty acid profile than highly saturated oil shortening or animal fat + Expected to lower cholesterol ratio |
| | | (Fully hydrogenated vegetable oils and liquid vegetable oils) with liquid vegetable oils | High in MUFA Small amount of both n-6 and n-3 PUFA Moderate to high in saturates 2-4% trans | + Better fatty acid profile than highly saturated oil shortening or animal fat + Expected to lower cholesterol ratio |
| Bakery / Food Processor Shortening Spray / Liquid | General vegetable oils | Canola or soya oils | High MUFA or n-6 PUFA High in n-3 PUFA Low in saturates Poor oxidative stability | + Improved fatty acid profile including ratio of n-6 to n-3 fatty acids + May contribute to a diet which reduces CHD risk |
| | Medium and high stability vegetable oils | High oleic canola oil High oleic sunflower | High in MUFA Small amount of n-6 and n-3 PUFA Low in saturates Better oxidative stability than general vegetable oils | + Improved fatty acid profile including ratio of n-6 to n-3 fatty acids + May contribute to a diet which reduces CHD risk |
| | | Low linolenic soya Mid oleic sunflower | High in MUFA or n-6 PUFA Low in saturates Better oxidative stability than general vegetable oils | - Increased ratio of n-6 to n-3 fatty acids + May contribute to a diet which reduces CHD risk |

APPENDIX 2 – OIL AND FAT MANUFACTURERS AND SUPPLIERS (Step 3b)

** Partial list*



Aarhus United
www.aarhusunited.com

Archer Daniels Midland Company (ADM)
www.admworld.com

Bunge
www.bunge.com

Canadian Canola Growers Association
www.ccg.ca

Canbra Foods Ltd.
www.canola.com/welcome.asp *(click on Canbra Foods)*

Canola Council of Canada
www.canola-council.org

Cargill, Inc.
www.cargill.com

Rich Products Corporation of Canada Limited
www.rich.com

Unilever *(site for foodservice)*
www.unileverfoodsolutions.ca

APPENDIX 3 – FOOD PRODUCT DEVELOPMENT CENTRES (Step 3c)

"Cross-Canada List of Food Processing Facilities Offering Food Product Development Expertise for the Reduction of Trans Fatty Acids"

*Reproduced from document received on January 10, 2006 from the Government of Canada



NEWFOUNDLAND AND LABRADOR

Centre for Aquaculture and Seafood Development (CASD)
P.O. Box 4920, St. John's,
Newfoundland A1C 5R3
<http://www.mi.mun.ca/csad>
Tom Brown – Assistant Director
(709) 778-0336

PRINCE EDWARD ISLAND

Prince Edward Island Food Technology Centre (FTC)
P.O. Box 2000, Charlottetown,
Prince Edward Island C1A 7N8
<http://www.gov.pe.ca/ftc>
Yaw Dako – Food Technologist
(902) 368-5548

NOVA SCOTIA

Canadian Institute of Fisheries Technology (CIFT)
1360 Barrington Street,
P.O. Box 1000,
Halifax, Nova Scotia B3J 2X4
<http://cift.engineering.dal.ca/>
Alex Speers – Director
(902) 494-6030

NEW BRUNSWICK

New Brunswick Research & Productivity Council (NBPC)
921 College Hill Road, Fredericton,
New Brunswick E3B 6Z9
www.yourfoodlab.com
Peter Rogers – Food Technology Services Manager (506) 452-1212

QUEBEC

Cintech Agroalimentaire (CINTECH)
3224 rue Sicotte, Saint- Hyacinthe,
Quebec J2S 2M2
www.cintech-aa.qc.ca
Joanne Tanguay – General Manager
(450) 771-4393 (Ext. 360)
Manon Laforest – Project Director
(450) 771-4393 (Ext. 303)
Toll free number for Montreal area is
(514) 364-4393

ONTARIO

Guelph Food Technology Centre
88 McGilvray Street, Guelph, Ontario
N1G 2W1
www.gftc.ca
Barbara Maly – Manager of Business Development (519) 821-1246
Terri Dunlop-Dewar – Consultant
(519) 821-1246

MANITOBA

Manitoba Food Development Centre (FDC-M)
Box 1240 810 Phillips Street,
Portage la Prairie, Manitoba
R1N 3J9
www.gov.mb.ca/agriculture/fdc
Alphonsus Utioh – Manager,
Process and Product Development
(204) 239-3179

SASKATCHEWAN

POS Pilot Plant
118 Veterinary Road, Saskatoon,
Saskatchewan S7N 2R4
www.pos.ca
Ken Falk – Manager, Laboratory Services (306) 978-2853
Paul Fedec – Vice President (306) 978-2845

Saskatchewan Food Industry Development Centre
#117-105 North Road, Saskatoon,
Saskatchewan S7N 4L5
www.foodcentre.sk.ca/about_food.asp
Carmen Ly – Communications Director (306) 933-7556

ALBERTA

Leduc Food Processing Development Centre
6309-45 Street,
Leduc, Alberta T9E 7C5
www.agric.gov.ab.ca
Ron Petitt – Director, Processing Development Division
(780) 980-4862

BRITISH COLUMBIA

British Columbia Institute of Technology (BCIT) Food Process Resource Centre
3700 Willingdon Avenue,
Burnaby, British Columbia
V5G 3H2
www.bcit.ca
Cliff Dunlop – Project Leader
(604) 432-8320

The preceding is a list of not-for-profit food processing development centres ("Centres") that have the ability to assist food producers in reformulating their products to reduce or eliminate trans fat and/or develop alternative products with little or no trans fats. Although every attempt has been made to provide a comprehensive list of not-for-profit Centres, it is possible that others exist. There are also a number of private facilities that offer these services which have not been included on this list.

This list is for information purposes only. The Government of Canada does not certify, control, approve or endorse these Centres and assumes no responsibility or liability of any kind regarding the prices charged or services provided by these Centres.



Canadian Restaurant and Foodservices Association

316 Bloor Street West
Toronto, Ontario M5S 1W5

Tel: [416] 923-8416 or
1-800-387-5649

E-mail: info@crfa.ca

Website: www.crfa.ca

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