



REDUCING THE TRANS FATTY ACID (TFA) CONTENT OF OPERATIONAL RATIONS

While a small amount of TFAs are found naturally in animal-based foods such as beef, butter and milk, most TFAs in the diet come from consumption of partially hydrogenated oils (PHOs). PHOs are liquid oils that have been made into solid fats, such as shortening and hard margarine. PHOs have many functional benefits in food processing and preservation, as they have been documented to improve texture, extend shelf life, and increase a product's ability to withstand the negative effects of oxidation. PHOs have been utilized in operational ration components, particularly bakery items, to ensure long shelf life requirements are met while still maintaining desirable sensory characteristics.

WHY IT IS NEEDED:

Research indicates that there may be a correlation between TFA intake and coronary heart disease, weight control, inflammatory response and immune dysfunction. In 2006, the Food and Drug Administration (FDA) required that TFAs be declared on the nutrition label of conventional foods and dietary supplements (68 FR 4143). Beginning in January 2006, Government contractors began to label the TFA content of operational ration components in accordance with the new FDA requirements.

The nutritional content of combat rations is dictated by Army Regulation 40-25, Nutrition Standards and Education, dated 15 June 2001. This document is silent on the issue of TFAs in the military diet; however, a revision of that regulation that is currently in final draft and pending publication contains the following language: "Saturated fat, trans fatty acids, and dietary cholesterol should be as low as possible while consuming a nutritionally adequate diet (saturated fat less than ten (10) percent of calories). Operational and restricted rations may require a higher fat content to meet the increased energy and shelf-stability requirements in fixed weight and volume."

ACTION TAKEN:

A Combat Feeding Directorate (CFD) proposal on TFA was funded by the Department of Defense Combat Feeding Research and Engineering Board in 2007 to evaluate the feasibility of reducing TFAs in operational ration components. From October 2008 to November 2010, the amount of TFA in the Meal, Ready-to-Eat™ (MRE™) was assessed, and alternative formulations were developed for products containing the highest amount of TFAs. Evaluation of newly formulated products included shelf life testing to verify that the products met military ration shelf life requirements of 6 months at 100°F and 3 years at 80°F, as well as field testing to ensure Warfighter approval. This research proved that select ration components could be made with no TFAs, while still meeting strict military requirements.

In addition, beginning in 2010, CFD required that new non-developmental items submitted for potential field testing contain no added TFAs. Currently, TFAs have been removed from a variety of components to include brownies, dairy shakes, pound cakes, crackers, tortillas and First Strike™ bars. As required, specifications were revised and submitted to Defense Logistics Agency – Troop Support Subsistence for procurement in ration contracts.

RESULTS:

Efforts to reduce TFA in operational rations has already resulted in a 40 percent reduction in the mean TFA content when comparing MRE™ 32 menus (2012 production) to MRE™ 34 menus (2014 production). Further reductions are planned for MRE™ 35 (2015 production) and future menus. CFD, in cooperation with the Department of Defense Nutrition Committee, other government regulatory agencies, and military ration industrial partners will further reduce the use of TFAs as technology and innovation emerges. agencies, and military ration industrial partners will further reduce the use of TFA as technology and innovation emerges.

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