

Functional Properties and Safety of Flaxseed Oil

JISABURO ONO
Deputy General Manager
Health Care Division
Nippon Flour Mills Co., Ltd.

< Summary >

Flaxseed (*Linum usitatissimum*) is reported to be one of the oldest cultivated plants. Countries in Europe, particularly Germany, consume high volumes of flaxseed and flaxseed products. In the U.S., a letter from the White House to the Departments of Health and Human Services (HHS) and Agriculture (USDA) supporting increased consumption of omega-3 fatty acids, helped trigger greater awareness. As a result, the consumption of flaxseed has tripled over the past three years.

In Japan, however, consuming of flaxseed has never been a custom. In fact, both flaxseed and flaxseed oil had long been considered toxic in Japan, and were therefore not used in food. Use was largely limited to industrial purposes. The first use in food was in the early 1900's when a small amount of flaxseed oil was imported from North America for health supplement purposes. Currently, flaxseed oil is becoming popular for use as a food ingredient and not just as a cooking oil. It is now widely known to be a major source of omega-3 fatty acids.

This article examines the functional properties and safety of the flaxseed oil. Alpha-linolenic acid, ALA, is the major component of flaxseed oil. Consumption of ALA shows great potential for benefiting cardiovascular disease. ALA also improves the fatty acid composition of cell membranes and inhibits the release of pro-inflammatory eicosanoids, which are among the many factors that control tumour cell growth and modulate apoptosis.

The safety of flaxseed and flaxseed oil has been well documented, including use of the AMES test. The author has confirmed the acute toxicity using domestically available flaxseed and flaxseed oil.