



CATI

Center for Advanced Technology and Innovation

Oil Extraction of Cholesterol from Eggs

Consumer Cholesterol Concerns: Consumer research suggests a relatively high level of consumer concern about managing cholesterol levels. According to HealthFocus, a large-scale syndicated study of consumer attitudes towards health, 41 percent of consumers are extremely or very concerned about high cholesterol, and 40 percent say they consider “cholesterol free” to be extremely or very important when reading food labels. This concern about cholesterol is likely to increase over the next 10 years as the population ages.

Patented Technology:

1. **US Patent No. 6,093,434**, Issued 07/25/00, “Enhanced Cholesterol Extraction From Egg Yolk”
2. **US Patent No. 5,487,912**, Issued 01/30/96, “Method of Producing Cholesterol-Reduced Whole Egg Products”
3. **US Patent No. 5,316,780**, Issued 05/31/94, “Method for Extracting Cholesterol from Egg Yolk”
4. **US Patent No. 5,037,661**, Issued 08/06/91, “Functional Decholesterolized Egg Yolks”
5. **US Patent No. 5,128,162**, Issued 07/07/92, “Method for Removing Cholesterol from Edible Oils”

Technology Benefits: This technology, originally patented by Kraft Foods, Inc., claims a rapid continuous or batch process for the reduction of cholesterol in egg yolks. The technology allows the reduction of cholesterol by up to roughly 80 percent without otherwise affecting taste or functionality (e.g., as an emulsifier). This process also results in an improved ratio of saturated to unsaturated fats (alters the ratio from 2:1 to 1:2). This process is reported to maintain taste, texture, and other hedonic properties while producing a product having greater heart and health benefits. It does not require special animal diets, and can be used to produce constituted liquid eggs including the white.

This process does not require cost intensive processes such as super critical CO² or organic solvents. Extraction is done with edible oils, which in turn can be recycled within the process. This recycling process is also available for license. The process appears to be economically feasible for products having costs similar to no-yolk or reduced yolk products.

Contact:

Kate Walker -- CATI Assistant Director

kwalker@thecati.com -- 262-898-7410

Egg Market for “Reduced/Cholesterol Free” Egg Products:

This cholesterol reduction technology is likely to be most useful in the following market segments:

- Consumer market segment, not including shell eggs
- Food manufacturing industry
- Food service industry

These market segments deals with eggs removed from the shell. Removing the egg from the shell is a necessary process to remove the cholesterol from the egg. On the consumer end, refrigerated egg substitutes have the potential to become refrigerated cholesterol-free prepared eggs instead of substitutes.

Estimated Market Capture with Cholesterol Extraction Technology:

Total Sale of Eggs and Egg Substitutes to Consumers

Estimated at \$2.5 Billion in 2001 (Source: Mintel)

Refrigerated egg substitute sales estimated at \$108.7 Million in 2001

Frozen and Dried Egg Substitute sales estimated at \$1 Billion in 2000

Total Sale of Eggs to Food Manufacturing Industry

Estimated at \$1.4 Billion in 2001 (Source: Mintel)

Total Sale of Eggs to Food Service Industry

Estimated at \$.07 Billion in 2001 (Source: Mintel)

Additional Information

Eggs and egg products consumed per capita have been steadily increasing since 1991. In 2002 egg and egg product consumption per capita was estimated to be 262.8 by the USDA.

Licensing Opportunity: The Center for Advanced Technology & Innovation (CATI) is a technology transfer and commercialization center located in SE Wisconsin. CATI has acquired the above technologies from Kraft Foods and is making them available for review and licensing. Contact us for further information on licensing the above technologies including:

- Pilot Production Data
- Sensory Panel Data
- Standard of Identity
- Know-How

Contact:

Kate Walker -- CATI Assistant Director
kwalker@thecati.com -- 262-898-7410