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UNL Soy Oil Research Helps Shape Food Allergen Labeling Rules Internationally

LINCOLN, Neb. — Recent University of Nebraska–Lincoln research on soybean oil is helping shape food allergen labeling laws here and abroad.

An international study by UNL food scientists confirmed that highly refined soybean oil does not cause reactions in people who are allergic to soybeans, said food toxicologist Sue Hefle, who headed this research with food scientist Steve Taylor.

Soy–allergic people don't react because refined oil contains only minuscule amounts of protein, the culprit in allergic reactions, Hefle said. Findings do not apply to cold– or expeller–pressed soy oil, which contains more protein and may cause reactions.

"This tells allergic consumers that they can eat many more foods without worrying about reactions," Hefle explained. "They still need to carefully read labels, but if highly refined soy oil is the only soy ingredient, they know it's OK to eat that product."

The study, completed in 2003, has drawn interest internationally from allergic consumers, food manufacturers and farmers as well as regulators because soybeans are a common allergen and soy oil is used extensively in foods worldwide, Taylor said.

"People have been extremely eager for our results. We've shared them with policy–makers, congressional staffers, industry and the chief consumer group for allergic consumers," Taylor said. The university's Food Allergy Research and Resource Program, which he and Hefle co–direct, regularly fields inquiries on a host of food allergy issues from across the nation and abroad.

The Nebraska findings played a role in recent European Union food allergen labeling decisions as well as the U.S. Food Allergen Labeling and Consumer Protection Act of 2004, which Congress passed to protect allergic consumers.

In March, highly refined soybean oil was among the soy components that the European Union temporarily exempted from food allergen labeling regulations slated to take effect later this year, he said.

The EU's European Food Safety Authority allowed industry groups to request exemptions if they could provide scientific evidence that a food product or ingredient doesn't cause allergic reactions. Industry included UNL's findings in a successful request for a three–year temporary exemption.

"The temporary exemption means the EU panel has some questions but feels comfortable that refined soy oil won't cause reactions," Hefle explained. During the next three years, the Europeans will further study the matter.

Last year, U.S. regulators exempted highly refined vegetable oils derived from known allergens, such as soybeans or peanuts, from the new federal food allergen labeling law that takes effect in 2006. Nebraska's soy oil research and a similar British study on refined peanut oil provided scientific evidence for that decision, Taylor said.

As a result, ingredient labels on foods containing soy oil need not explicitly list soy oil. Instead, labels can read "soybean, canola or safflower oil." That's significant for food makers who prefer using whatever oil is plentiful and inexpensive. If soy oil had to be specifically labeled, some processors might switch to other oils, he said.

"All this also helps preserve soybean farmers' widest possible access to the world's markets," Taylor said.

Regulators, industry and consumers all are eager for the best possible scientific information because food labels need to be based on risk, he said.

"We provide those practical scientific answers," Hefle said.

Scientists long have known protein's role in allergic reactions. Taylor's early, smaller studies of soy and peanut oils in the 1980s at the University of Wisconsin indicated refined oil wasn't a problem, but scientists needed a comprehensive study of soy oils worldwide to be sure.

For this study, the Institute of Agriculture and Natural Resources researchers evaluated 30 highly refined soy oils from around the world. They blended four oils containing the most protein to create a representative worldwide sample. Collaborating physicians at U.S., Canadian, French and South African universities fed soy-allergic volunteers 1.5 tablespoons of soy or canola oil hidden in oatmeal. None of the 29 volunteers at the five test sites worldwide had a reaction. These 29 people represented a statistically significant sample of geographically and ethnically diverse populations.

"We fed them more oil than anyone is likely to consume in one sitting in the real world," Hefle said. "If they didn't react to this worse-case scenario, they're not going to react."

IANR scientists now are working to identify precisely how much protein from soy, peanut and shrimp triggers an allergic reaction. Knowing these reaction thresholds should help expand safe food choices for allergic consumers.

The United Soybean Board and food companies helped fund the soy oil research, which was conducted in cooperation with IANR's Agricultural Research Division.

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