DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
Washington DC 20204

JUN 12 2001

Steve Johnson
Acting Assistant Administrator
1101 U.S. Department of Environmental
Protection Agency Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Mr. Johnson:

In October 2000 the Environmental Protection Agency (EPA) requested assistance from the Food and Drug Administration (FDA) in assessing the significance of adverse event reports that both EPA and FDA had received from consumers. These consumer reports detailed purported allergic reactions to food allegedly containing StarLink™ corn. This letter responds to your request.

Attached to this letter are three documents. The first is a report from the Centers for Disease Control and Prevention (CDC) of that agency's independent epidemiological investigation of the consumer complaints, which also includes a copy of their analysis of the results of FDA testing. The second document is FDA's report of development of a serological method to detect IgE antibodies to Cry9C protein. Included in that report are discussions of the factors considered in deciding to focus on testing for anti-Cry9C IgE and for developing the method, the protocol for the method, and the results obtained by FDA and by an independent laboratory at the University of Maryland, using the newly developed method to test coded case report samples supplied by CDC. The third document is FDA's summary of the consumer complaints received, the follow-up investigations, and the results of FDA's testing of food samples obtained from some of these consumers.

By the way of background, shortly after EPA requested FDA's assistance, we contacted CDC to recruit their expertise in launching a collaborative effort to study the clinical significance of the adverse event reports. On November 28, 2000, FDA and CDC presented summaries of the investigations to that point to EPA's FIFRA Scientific Advisory Panel (SAP). FDA provided both a description of the protocol it had employed to handle the adverse event reports, and a summary of the nature of the adverse event reports. Included in this summary was information regarding the process FDA medical officers used to assess the likelihood that a consumer's illness resulted from a true allergic reaction. For cases that were consistent with an allergic reaction, further work was needed to determine whether the possible allergic reaction was likely to have been

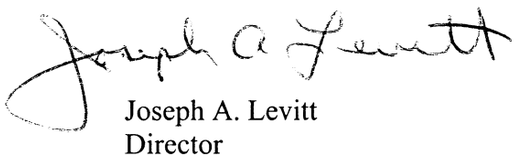
triggered by ingestion of a corn product or by another cause, and if consistent with consumption of a corn product, whether the corn products consumed actually contained any StarLink™ corn. CDC presented plans to further address the significance of the reported allergic reactions using a questionnaire and other tools of epidemiological field investigation and a still to-be-developed blood test. As you know, the SAP strongly supported this plan.

Accordingly, FDA and CDC worked closely to plan and carry out these studies. After conducting an independent evaluation of each adverse event report, CDC interviewed and obtained blood specimens from those consumers who had authorized FDA to forward their names, addresses, and telephone numbers to CDC and also gave consent to have blood drawn. Blood samples were held at CDC pending development of a test method. Concurrently, FDA developed a laboratory method to analyze serum samples from animals for antibodies to Cry9C protein and adapted it to analyze human blood samples for the type of antibody (IgE) that would be most indicative of the potential for an allergic reaction to the Cry9C protein. CDC asked FDA to use this new screening method to analyze the case report samples, along with various control samples taken from individuals who would not be expected to exhibit reactivity to Cry9C. Both the case report samples and the control samples were provided in coded form (i.e., without personal identifiers or other distinguishing marks) to eliminate any potential bias in testing. FDA completed the testing and transmitted the results to CDC to be evaluated. To assure reproducibility, FDA also had the testing of the serum samples and controls repeated by an independent laboratory of the University of Maryland; these results were also transmitted to CDC.

In addition, FDA collected food products that consumers alleged were linked to adverse events from individuals who had kept the products. FDA tested these foods for the presence of StarLink™ corn. FDA has informed the individual consumers of the testing results of the food samples they supplied. A summary of FDA's evaluation and follow-up of the consumer complaints and the results of this testing are also enclosed.

We hope this information will help EPA in its efforts to resolve questions about Cry9C. If you have questions concerning these documents, please do not hesitate to contact me.

Sincerely yours,



Joseph A. Levitt
Director
Center for Food Safety
and Applied Nutrition

Enclosures(3)

cc:
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JUN 13 2001

Steve Johnson
Assistant Administrator
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1200 Pennsylvania Avenue, N.W. (MC-7101)
Washington, D.C. 20460

Dear Mr. Johnson:

Subsequent to transmitting the cover letter dated June 12, 2001 and delivered today on StarLink corn, we noted an error in the 3rd paragraph. At the end of the 2nd line of the 1st sentence the word "clinical" should be replaced with "public health" so that the sentence would read:

> By the way of background, shortly after EPA requested FDA's assistance, we contacted CDC to recruit their expertise in launching a collaborative effort to study the public health significance of the adverse event reports.

This same error occurs in the FDA attachments to the letter. In each case the phrase "clinical significance" should be read as "public health significance."

Sincerely yours,

Joseph A. Levitt
Director
Center for Food Safety
and Applied Nutrition