ANNUAL REPORT

TITLE: Project 75-N Aflatoxin Research, Finished Product and Inplant

PERSONNEL: George Stanley, Research Director Phone: (209) 233-7249
P. O. Box 86, Fresno, California 93707

I. OBJECTIVES AND GOALS: Project 75-N has four objectives: (1) to prepare an Aflatoxin Manual for almond handlers (2) to obtain official status for the minicolumn method by conducting a collaborative study with the AOAC (3) to determine the possibility of aflatoxin reduction in almonds by blanching and/or roasting and (4) to analyze 100 30 lb. samples of manufacturing stock for aflatoxin.

II. ABSTRACT: (1) The Aflatoxin Manual was completed on September 25, 1975. It was written in layman's language and distributed to the almond handlers. (2) Protocols and statistical evaluations are being done as preliminary phases of an AOAC collaborative on the minicolumn method. We hope to establish the minicolumn method as the official AOAC method for aflatoxin analyses in almonds, as it is an inexpensive, fast, and accurate method that can be done even by the smallest almond handlers with nontechnical personnel. (3) A tentative study has been arranged with a major almond handler to analyze almonds for aflatoxin before and after blanching and roasting. Some success has been achieved by blanching and roasting peanuts in order to reduce aflatoxin levels; perhaps the same will prove to be true with almonds. (4) Twenty-nine samples of manufacturing stock almonds have been analyzed for aflatoxin and none have been contaminated. By continuing our aflatoxin monitoring program, the Almond Industry is showing the regulatory agencies the industry's concern for this problem and, at the same time, is attaining valuable data showing that finished product has never been found to contain aflatoxin, and that it is infrequently found in manufacturing stock almonds. The industry is effectively concentrating the aflatoxin in rejected oil stock.

III. EXPERIMENTAL PROCEDURE: (1) On September 25, 1975 the Almond Control Board sent to all of the almond handlers an aflatoxin control guide prepared by the DFA in cooperation with experts in the field of aflatoxin research.

(2) On October 20, 1975 I received a communication from Vincent Diprossimo, FDA Brooklyn, N.Y., who is an associate AOAC referee in charge of aflatoxin in tree nuts. He proposed two protocols for the collaborative study of aflatoxin in almonds by the minicolumn method. A letter explaining the two protocols, the number of samples to be analyzed by each collaborator, the aflatoxin concentrations in parts per billion to be used, and suggestions and comments was sent to an FDA statistician to determine if they would provide statistically significant data and to determine what the minimum number of collaborators for each protocol would be.

(3) The projected time-table for the blanching and/or roasting experiment is January or February when the 1975 crop has been received and the peak demand for the blanchers and roasters has subsided.

(4) To this date, 29 thirty pound samples have been ground with oyster shells, extracted with acetone-water, cleaned up and run through the minicolumns. None of the 29 samples has shown any trace of aflatoxin.

IV. RESULTS: (1) For copies of the Aflatoxin Control Guide for Almond Handlers, contact the Almond Control Board
(4) 0/29 samples contaminated by aflatoxin

V. DISCUSSION: The Aflatoxin Manual brought much needed basic information to both the almond handlers and growers. Progress on the AOAC collaborative is slower than we like, but government procedures are slow. Sample analysis to date is certainly heartening, as 0/29 samples were found without even a trace of aflatoxin.