JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

## CORRESPONDENCE/REBUTTAL

# Comment on A Semi-Pilot-Scale Procedure for Isolating and Purifying Soybean (*Glycine max*) Lectin

*Sir:* The recent paper by Fasina et al. (*1*), which describes the large-scale purification of the soybean lectin, served to remind me of my own experience involving the isolation of this interesting protein over 50 years ago (*2*). In our effort to elucidate the poor nutritive value of raw soybeans, we succeeded in isolating from soybeans a protein that was toxic when injected into rats and which had the ability to agglutinate red blood cells. At the time we referred to this protein as "soyin" because the term "lectin" had not yet been proposed for this class of proteins (*3*). To establish the significance of this protein as a component of the diet that was capable of inhibiting growth, it became necessary to isolate large quantities of this protein for incorporation in the diet fed to rats (*4*). Utilizing the techniques of protein purification available to us at the time (isoelectric precipitation and fractionation with ammonium sulfate and ethanol), we succeeded in isolating 3 g of "soyin" starting with 1500 g of soy flour, equivalent to 2 g/kg, a procedure which could be completed within 10 days. It was of interest to compare these results with those reported by Fasina et al. (*1*), who isolated 5.4 g of the lectin from 3480 g of soyflakes. This translates into 1.4 g/kg and required 3 weeks to complete. In terms of purity, it should be pointed out that, on the basis of electrophoretic measurements, the lectin (also referred to as soyin) content of the preparation used in this study (*4*) represented 78% of its total protein content. If necessary, further purification of the soybean lectin could be achieved by using the technique of affinity chromatography as described by Fasina et al. (*1*).

### LITERATURE CITED

(1) Fasina, Y. O.; Swaisgood, H. E.; Garlich, J. D.; Classen, H. L. A semi-pilot-scale procedure for isolating and purifying soybean (*Glycine max*) lectin. *J. Agric. Food Chem.* **2003**, *51*, 4532−4538.
(2) Liener, I. E.; Pallansch, M. J. Purification of a toxic substance from defatted soybean flour. *J. Biol. Chem.* **1952**, *197*, 29−36.
(3) Boyd, W. C.; Shapleigh, E. Specific precipitating activity of plant agglutinins (lectins). *Science* **1954**, *119*, 419.
(4) Liener, I. E. Soyin, a toxic protein from the soybean. I. Inhibition of rat growth. *J. Nutr.* **1953**, *49*, 527−539.

**Received for review August 5, 2003.**

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JF030572D

10.1021/jf030572d CCC: $27.50 
Published on Web 04/20/2004