## Extraction, Detection and Quantification of Ricin in Agricultural Soils. (S03-boroda125458-Poster)

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## Abstract:

An indirect ELISA method was modified to detect ricin (RCA60) from castor plants (Ricinus communis) in agricultural soils. The method yielded results with a minimum detection level of 0.02 ug ricin/ml of soil extracted solution (1:1 soil to water) to a maximum concentration of 0.30 ug ricin/ml. The data yielded an R squared >0.96. In a 10 day germination study, this method detected the presence of ricin in the surface of the seeds only in days 4, 6 and 8 (ricin values ranging from a low of 0.047 ug ricin/ml to 0.08 ug ricin per ml). Ricin content was below detection limit in the bulk soil. In a study testing for ricin contamination in a two-year old former castor field, the ELISA method indicated the presence of ricin in the sample points in a Northeasterly direction ranging from 0.08 ug ricin/ml to 0.32 ug ricin per ml. In a similar study using a castor field and three sampling times only the December sampling showed significant ricin concentrations in the soil. The values ranged from 0.13 ug ricin/ml to 1.00 ug ricin/ml in all Northeasterly samples of the field. Both the castor fields showed similar ricin spread patterns that are consistent with the prevailing wind direction of the area.

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