Application of a cyclodiene-specific ELISA to residue monitoring of agricultural produce and the environment in Vietnam

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Abstract: To enhance monitoring capacity for pesticide residues in agricultural produce and environmental samples in Vietnam, a simple and rapid immunoassay for cyclodienes was developed. The assay showed a good sensitivity for endosulfan with an IC_{50} of 1-2?g/L. A wide cross reactivity for its metabolites and other cyclodienes such as aldrin, endrin, dieldrin, heptachlor led to formatting an ELISA (Enzyme-Linked ImmunoSorbent Assay) kit with a broad specificity for cyclodienes. A simple sample preparation protocol also was developed for diverse samples including water, soil, vegetables and fruits. During the years 2002-2003 the cyclodiene ELISA kits were supplied to various research institutions in South and North Vietnam to collaboratively monitor the pesticide residues in water, soil, vegetable and fruit in the North, South and Central Vietnam. A total of 450 samples of vegetable and grapes were screened for cyclodiene residues using the ELISA. The validation of 10% of positive samples by gas chromatography (GC) method confirmed that the results of ELISA correlated well and were reliable. ?? 2007 American Chemical Society.

Year: 2007
Source title: ACS Symposium Series
Volume: 966
Page : 245-258
Link: Scorpus Link
Correspondence Address: Trang, N.T.; Southern Institute of Agricultural Engineering and Post-harvest Technology (SIAEP), Ho Chi Minh City, Viet Nam
Editors: Kennedy I.R.Crossan A.N.Solomon K.R.Gee S.J.Wang S.Sanchez-Bayo F.
ISSN: 976156
ISBN: 0841274207; 9780841274204
CODEN: ACSMC
Language of Original Document: English
Abbreviated Source Title: ACS Symposium Series

Document Type: Conference Paper

Source: Scopus

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