ABSTRACT

Pesticide Residues in Local Produce

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A study of nine organophosphate pesticides was conducted on vegetable crops in Trinidad and the persistence of five of these compounds was examined under supervised field conditions during dry and wet seasons. The organophosphate parent compounds were subjected to oxidation in the laboratory to observe the possible formation of oxons, which are important in residual studies. Samples of crops were taken from consumer markets and analyzed in the laboratory and the data obtained were correlated with the results of the supervised trials and laboratory oxidation studies.

The controlled field trials showed that there are significant differences in the rate of breakdown and disappearance of the parent compounds of the various pesticides studied. The detection of metabolites formed by oxidation in the laboratory was not adequately conclusive, but in instances where products were observed, these compounds were not found in both the supervised trials and market basket samples as residues.

Twenty-two percent of the market basket samples analyzed had detectable residues of the organophosphate pesticides under study and ten percent were above Maximum Residue Limits established by the Codex Alimentarius Commission. Celery was observed as the crop with the highest levels of pesticides. Correlation of the market basket study with the supervised trials highlighted deficiencies in pesticide application and harvesting practices

in certain instances. The need for farmer education in these areas, as well as local legislation and programmes to regulate and monitor pesticide use and residual levels in food is evident.