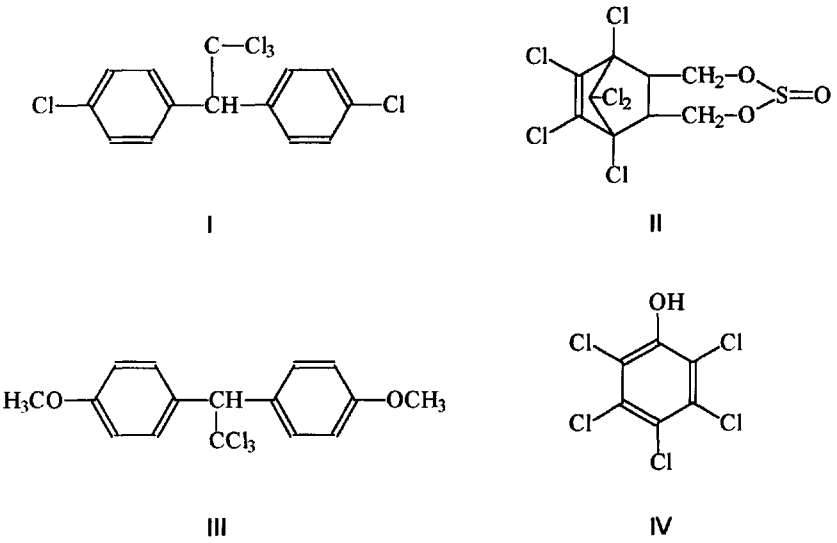

Figure 1 Organochlorine insecticides. I, DDT; II, endosulfan; III, methoxychlor; IV, pentachlorophenol.

D. Organophophorous Insecticides

Residual organophosphorus (OP) insecticides were determined in crude herbal drugs (279). In contributions mentioned earlier, OP insecticides were determined in water (45) and in complex samples (84) using 2-D TLC and PRISMA optimization. The limit of detection was 15–100 pg. Various detection methods reviewed in Section IV were applied for chemical (130–136,139), physical (177), and enzymatic (207,208) detection of OP insecticides. ^{14}C-labeled tebupirimphos and metabolites were separated on silica gel with various solvent systems (205). TLC separation and determination of metrifonate and DDVP in rat blood, brain, and liver homogenates were achieved (280). Quantification of terbufos and its metabolites in the lower microgram range was examined on silica gel with various solvent systems (281).

The degradation of isazofos was studied in soil samples under field and laboratory conditions. The pH of the soil had significant influence on the degradation of isazofos (282). The fate of ^{14}C-labeled diazinon during the composting of yard trimmings was examined (283). Seven TLC systems were investigated to determine their usefulness for separation of 19 pairs of *E-Z* geometrical isomers of pyrazole, pyrimidine, and purine derivatives with potential cytokinin activity (284). TLC analysis of chlorpyrifos and methylmercury reaction mixture was done in a study of their toxicological interactions (265). Novel protein targets for OP compounds were analyzed using TLC (285). TLC was used together with GC/MS in a chronological study of diazinon in putrefied viscera of rats (286). The OP pesticides malathion, dimecron, chlorpyrifos, monocrotophos, dimethoate, quinolphos, and methyldemeton were separated on hydrated stannic oxide layers (287). The chromatographic systems and the methods of detection and quantification of the cited OP pesticides and others are listed in Table 4.

E. Carbamates and Urea Derivatives

The thin-layer chromatographic behavior of carbamate pesticides and related compounds was investigated with several sorbents. Good separations of phenol from carbamate insecticides were reported using a variety of solvents (288).

Carbaryl is frequently examined in forensic analysis. Some methods of carbaryl, carbofuran, and propoxur detection were reviewed in Section IV (145–149,156). A reagent for phosphoro-