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WUTTICHAJ KATTABTIM : MUTAGENIC POTENTIAL OF
ORGANOPHOSPHATE INSECTICIDES TREATED WITH NITRITE IN AN ACID
SOLUTION USING AMES TEST. THESIS ADVISORS : KAEW
KANGSADALAMPAI Ph.D., ANADI NITITHAMYONG Ph.D., DARUNEE
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Many agricultural chemicals contain structures that can interact with nitrite and produce carcinogenic compounds. In Thailand, organophosphate insecticide residues are frequently detected but not often exceed the Codex Maximum Residue limits (Codex MRLs) and may result as precursors of mutagens after coming into contact with nitrite in the stomach. Hence, the main aim of this study was to determine the mutagenic potential of organophosphate insecticides treated with nitrite. It was also determined the modifying effects of these insecticides on the mutagen formed during aminopyrene-nitrite reaction and on the final product of 4-h incubation of aminopyrene-nitrite reaction in an acid solution using Ames assay with *Salmonella typhimurium* strains TA98 and TA100 in the absence of metabolic activation.

The results showed that formulated products of organophosphate insecticides namely; dimethoate, malathion, palathion and methamidophos treated with nitrite were not mutagenic toward both strains. In addition, results also showed that all insecticides have no any modifying effects on the mutagen formed during the aminopyrene-nitrite reaction and on the final product of 4-h incubation of aminopyrene-nitrite reaction.