SUPAPORN NOPPAKUNDILOGRAT : CHEMICAL CONSTITUENTS OF ROOT OF Derris trifoliata Lour., THESIS ADVISOR : ASSO. PROF. UDOM KOKPOL, Ph.D., ASSO. PROF. GAYSORN VEERACHATO, 172 pp.

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Mangrove plants are well known for their bioactivity. This reports on the examination of crude extracts from the roots of Derris trifoliata Lour. (Papilionaceae). Some of the characteristics of these extracts are the strong inhibition of rice growth and extremely effective poison for fish and insects. They are also known for antifungal and antibacterial activity. Fractionation of crude chloroform extract from these roots using various kinds of chromatography led to the isolation of nine compounds : sulfur, a mixture of unidentified esters, alcohols (C_{21}-C_{26}), carboxylic acids (C_{20}-C_{28}), a triterpene lupeol, sterols such as β-sitosterol, campesterol, stigmasterol; rotenone 6a,12a-dehydro-α-toxicarol and an unidentified compound obtained as yellow needles m.p. 222°C (decomp.). The structures of some of these compounds were firmly established on the basis of physical, chemical properties and the spectral data. Rotenone, 6a,12a-dehydro-α-toxicarol, the unidentified compound m.p. 222°C, the mixture of sterols and long chain carboxylic acids cited above were found to have strong inhibition for rice growth. The rotenone was also found to be a fish poison. In addition sulfur (S_8) and lupeol have been reported as an inhibitor to fungus infection. Similiarly, rotenone and 6a,12a-dehydro-α-toxicarol can be used as insecticide. The mixture of straight chain alcohols, acids and the mixture of sterol mentioned above proved to be antifeedant against the boll weevil.

The essential oil constituents from roots were examined using gas chromatography-mass spectroscopy and 19 components were identified; and the structures were confirmed. Furthermore, copaene, α-caryophyllene. phenyl acetonitrile and dodecane were confirmed by comparing with the computer assisted in known fragmentation patterns.