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## Side Effects of Pesticides on Natural Enemies: Selection of Soft Pesticides for the Control of Insect Pests in Sudan

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### Abstract

In the last decades during the post-war period, the agriculture has developed towards methods that are more intensive. Among these is increased use of agrochemicals. In the Sudan Gezira, cotton spraying started as early as season 1945/46 when only 1% of the cotton area was sprayed once. By 1978/79 the problem caused by the cotton insect pests, particularly the cotton whitefly (*Bemisia tabaci*) flared up. The number of sprays per season went up, reaching 9.25 sprays in season 1978/79, which might be attributed partly to the rapid resurgence of insects' pests as a result of the use of non-selective insecticides, which badly affected the natural enemies of these pests. The joint use of natural enemies and selective pesticides might attribute to combat this problem. Studying the side effects of pesticides is of prime importance to save natural population and encourage their role as biological control agents. This paper discuss the various methods which can be used to study the side effects on natural enemies and the results of some studies carried on the side effects of some insecticides on natural enemies both at small and large scale levels in Sudan. The study include testing the side effects of some insecticides (Talstar, Polo, Metasystox, Marshal and the mixture Reldan + Endosulfan) on two Predators at small scale level at the Gezira Research Farm, Wad medani. The Impact of Polo (diafenthiuron) on natural enemies in the cotton based ecosystem of the Gezira Scheme (Large Scale) was tested in the Study. The results indicated that Polo was relatively safe both at small scale and large scale level to the natural enemies observed during the study.

**Keywords:** Predators, side effects, Soft insecticides, Sudan