Alternatives to Insecticides

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It was not long ago when insecticide use was advocated to the extent that it was heavily subsidized by governments. While insecticides are still on the list of many cotton producing countries as an important subsidized agricultural input, others are trying to eliminate them. There is no doubt that insecticides are the most efficient and effective means of controlling insects. Insects must be controlled and insecticides will continue to be used unless feasible alternatives to insecticides are found and adopted. No emphasis is needed on the fact that insecticides are harmful to beneficial insects, pollute the environment, create resistance problems and also are very expensive, out of reach for small farmers in many cotton producing countries.

Those who started using insecticides earlier than others are now leading the way to end the use of these toxic compounds. The objective is to protect the crop not with insecticides, but with chemicals and materials which

are safer to use and have equally high efficacy. Such promising alternatives will be discussed in this paper.

In the US, studies by the National Academy of Sciences, the Natural Resources Defense Council and others concluded that farmers could substitute up to 50% of their pesticides with off-the-shelf, non-toxic alternatives without affecting their crop yield. Pesticide reduction plans in the Netherlands, Denmark and Sweden call for a 50% reduction in insecticide use by the year 2000. The current trend of gradually increasing regulations for registering new insecticides and, in certain cases, re-registering insecticides is causing a decline in the market for these products. Safer ways and means of control need to be explored and economically utilized against insect pests and diseases.

Varietal resistance and biological control of insects have long been recognized as means to decrease the use of insecticides. They have been used extensively, but were unable to eliminate insecticide use completely. Similarly, other components of integrated pest management, some of which are easy to apply, have only contributed in decreasing the use of pesticides. I will concentrate on those means of insect control which have the potential to take the place of insecticides.