

THE NECESSITY OF INTEGRATED CONTROL APPLICATION AGAINST

BEET ARMYWORM (*SPODOPTERA EXIGUA* HB.)

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Summary

Since 1931, that Sugarbeet cultivation has begun in the country, the beet armyworm appeared to be a permanent pest of this crop and some years heavy losses have been occurred due to its outbreak. At the present time it is controlled only by chemical measures, using mostly chlorinated hydrocarbons. Although, the chemical method has the most clear cut and rapid action, but due to side effect problems such as residual action, high mortality of the natural enemies and environmental pollution, the integrated control measures have to be taken into consideration. In this paper the possibility of usage of different sources of integrated control have been discussed. Our investigation indicates that the beet armyworm has six generations per year in Karaj area, the second and early part of the third generation have the most economical importance. The second generation starts at the end of May and continues to the end of June.

The young beets, especially the seedlings are preferred for egg laying and larval feeding than the old ones. Thus, it is recommended that sugarbeet be planted as early as in the April, to escape the attack made by the second generation of the pest.

When alfalfa, corn and pea are cultivated at the vicinity of sugar beet fields they cause the population build up of the pest.

It is better that weeding be synchronized with the egg stage of armyworm to suppress the population of pest. Plowing, soon after harvest reduces the population of insect by destroying the pupal stage of the pest which hibernates in the soil.

Chrysopa larva is the most active predator of the armyworm eggs, which destroys 90% of the eggs in some years (tab. 1)

There are 7 hymenopterous wasps and tachinid flies which are active on armyworm larvae. These parasites destroy about 50% of the autumn population and last generation of the pest. (tab. 2 and 3)

In laboratory and field breeding of armyworm, the larvae were completely destroyed by Nucleor Polyhedrosis

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virus. We found that the insect is very sensitive to this pathogen. Thus, more studies have to be accomplished in the future.

The results of laboratory tests with *Bacillus thuringiensis* (Dipel) alone and mixed with Fundal were not satisfactory. Considering the activities of predators and parasites which control the population of the armyworm, it is not recommended to spray sugarbeet from early July, except in very late planted fields with heavily infestation of pest.

Chemical control has to be applied when:

The population of moths captured by one light trap per night at the end of May reaches up to 50 and continues up to 100 (tab. 4)

The average population of larvae when the plant has 4-6 leaves reaches to 4 larvae per square metre.

The average density of eggs, when the plants have 4-6 leaves reaches to one group of eggs per 19-15 square metre.

If the armyworm is the only pest of sugar beet fields, antifeedants such as Duter at the rate of 1-1/5 Kg/H may be used to protect the predator and parasites.

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