

JAPANESE BEETLE QUARANTINE AS IT AFFECTS SOD GROWERS

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The Japanese beetle, a pest of Asiatic origin, was first found in this country at Moorestown, New Jersey, in 1916. It has since spread to most of the Eastern seaboard states and west through much of Ohio and Indiana, into Illinois and Missouri. An infestation at Sacramento, California, was eradicated several years ago.

Michigan has been involved with the beetle since the first one was discovered in Detroit in 1932. An aggressive program, in cooperation with the USDA, of annual survey for and treatment of new infestations with soil residual insecticides eradicated many incipient infestations and greatly suppressed others. Thus, the necessity for quarantines in the State was avoided until 1968. At that time both Federal and State quarantines were applied to an infested area in southern Monroe and southeastern Lenawee counties and one in the vicinity of Battle Creek, involving portions of Kalamazoo and Barry counties. These quarantines and those applied to areas in Washtenaw, Wayne, Oakland, Macomb, Berrien and Cass counties this past year have been necessary due to the presence of infestations that cannot be controlled, resulting from the lack of adequate replacements for the soil residual insecticides.

The insect is a serious pest that feeds on over 275 different hosts. The adults defoliate shade trees and shrubs, feed on fruits, corn and soybeans and threaten our dry bean crop, while the grubs feed on the roots of many plants, including small grains and turf. A 1969 estimate by the United States Department of Agriculture shows the Japanese beetle was then costing this country over thirty million dollars annually.

The beetle spends nine months or more in the soil as egg, pupa and grub; thus, the keystone of quarantine action is preventing artificial spread through movement of infested soil whether by itself or when associated with plants. Also, its most favorite egg-laying habitat is sod - the most lush and best watered there is around, since this provides prime root forage for the grubs. Thus, sod nurseries, along with others that sell plants with soil attached, are significant from a quarantine standpoint.

Several treatments are available to the sod nurseryman for satisfying both Federal and State quarantine requirements. These are:

1. Treatment of the sod with either 8 pounds of actual chlordane or 3 pounds of actual dieldrin per acre, in granular formulations. Either should provide several years of effective residual for certification purposes if worked into the soil before seeding. (A check on residual can be made by laboratory analysis of the soil.) To be considered effective during the year of application this treatment must be applied before July 1. If applied later than June 15, certification cannot be approved until September 15 of the following year.
2. Fumigation of the sod before cutting, can be accomplished with ethylene dibromide #440 or ethylene dibromide-chlordane #431. The dosage is 20 c.c. of either material per gallon of water per square yard of sod. This is equivalent to 20 pounds of ethylene dibromide per acre and in addition 10 pounds of chlordane per acre when using #431.

3. Methyl bromide fumigation of cut sod can be used for certification. However, this procedure is expensive, time consuming, and if not done carefully can result in injury to the sod.

Treatment with granular chlordane or dieldrin is the least troublesome and most economical means of certification if it is done at the proper time. It is for this reason that we attempt to anticipate quarantining an area as far in advance as possible and forewarn sod nurseries and other plant growing establishments. Thus far in Michigan our record of avoiding "catching a nurseryman with his treatment down" has been pretty good. However, on a few occasions the beetle has out-smarted us and we have had to ask nurserymen to resort to more problem-causing and expensive treatments for immediate certification. None of us enjoy the latter and thus I wish to assure you that we will do our best to continue our policy of anticipating the beetle problem and the need for quarantine action.