

GTI

RESEARCH HIGHLIGHTS

Prof. Mark Sears, Department of Environmental Biology, University of Guelph and Mr. Fred Vaughn of Vaughn Agricultural Research Services have been cooperating since 1990 on a study of the effectiveness of a number of chemicals for European Chafer control. The studies were conducted on bluegrass growing on golf course fairways and at the Cambridge Research Station over a two year period and included both spring and fall applications.

It is generally accepted that the threshold level is 16 grubs/0.3 m². This value may be lower where the turf is stressed due to drought or has insufficient nitrogen.

Sears and Vaughn's data show that when averaged over the series of four experiments Basudin II (Diazinon) was the most effective insecticide (Table 1). Its superiority is also supported by the low range of values between experiments, suggesting it is effective over a range of conditions.

Triumph was equal to Basudin II in effectiveness, however, this chemical is not registered for use on turf in Canada at this time. However, another insecticide which is registered for use on turf in Canada and which gave good control was Trumpet. The higher rate of application of Trumpet appeared necessary to give dependable results. Dursban and Dylox, chemicals available for use on turf, were borderline in effectiveness, both on the basis of their average and on the basis of consistent results.

Their attempts to use parasitic nematodes was interesting. The nematode functions by carrying a disease bacteria into the grub when the nematode burrows into the grub. Of particular promise is the experimental

system developed by ICI, GXA 873ICI. Of course this system must be submitted to the rigorous testing systems of the federal and provincial registry bodies the same as any chemical before it will be available on the market.

They also carried out three experiments to evaluate the persistence of control by counting the grubs the spring following fall applications (Table 2). The chemicals which gave good control in the fall continued to be effective the following spring.

Table 1: Insecticides for the control of European Chafer in bluegrass.

Treatment	Formulation	Rate (kg al/ha)	Live Grubs/0.3 sq. m. 25 - 28 days post-treat.	
			Average	Range
Check	-	-	27.8	17.0 - 35.0
Basudin 11	500 EC	7.5	4.5	1.3 - 11.0
Dursban	1 G	2.0	15.5	3.0 - 31.5
Dylox	420 EC	9.0	15.3	4.5 - 38.5
Triumph	1 G	2.3	4.0	3.0 - 6.8
Triumph	480 L	2.3	4.2	2.3 - 6.0
Trumpet	80 WP	3.0	15.5	3.5 - 34.5
Trumpet	80 WP	6.0	8.8	1.0 - 17.8
GXA 873ICI*		5.0 bill.	14.5	9.0 - 18.0
S. carpocapsae*		2.5 bill.	26.3	12.3 - 32.5
S. carpocapsae*		5.0 bill.	22.1	13.0 - 27.8

* parasitic nematode

Table 2: Persistence of European Chafer control over winter by several insecticides.

Treatment	Formulation	Rate (kg al/ha)	Live Grubs/0.3 sq. m. (ave. of 3 expts.)	
			Fall	Spring
Check			31.4	33.6
Basudin II	500 EC	7.5	2.4	6.4
Dursban	1 G	2.0	26.6	25.2
Dylox	420 EC	9.0	18.6	11.8
Triumph	1 G	2.3	5.4	6.9
Triumph	480 L	2.3	3.6	7.7
Trumpet	80 WP	3.0	17.7	16.8
Trumpet	80 WP	6.0	7.5	9.1
GXA 873ICI*		5.0 bill.	16.4	24.0
S. carpocapsae*		2.5 bill.	30.9	37.7
S. carpocapsae*		5.0 bill.	25.1	39.1

* parasitic nematode