

Corn Rootworm Insecticide Trials Show Effectiveness

UNIVERSITY PARK (Centre Co.) — Entomologists use the common "Iowa" root rating system to determine damage to roots.

A rating of 1 is an undamaged root system, a rating of 6 is the most severely damaged (all three nodes are chewed completely back), and ratings of 2 to 5 are intermediate.

Economic damage begins to occur when the root rating exceeds 3 to 3.5. The best treatments (lowest root ratings: 2.6 to 3.2) in the Rock Springs

1995 trials in Centre County occurred with Counter 15G T-band, Fortress 2.5G T-band and in-furrow, all Force treatments, Furadan 4F broadcast+cultivation, and Lorsban 15G T-band. Less effective were the Dyfonate II T-band and Furadan 4F broadcast treatments (root ratings of 3.9 to 4.4).

All these treatments were significantly better than the untreated plots (root rating of 5.4). Because of the extreme drought in Pennsylvania in

1995, yield data were not reliable and are not reported.

There are two new rootworm insecticides registered for the 1996 growing season; Aztec and Fortress. Aztec is from Bayer, and is a combination of an organophosphate (2.0% tebuprimiphos) and a pyrethroid (0.1% cyfluthrin). Fortress, from DuPont, is an organophosphate (chlorothoxyfos), and will be available in either a 2.5G or 5G formulation. Both these compounds will be applied at much lower



Table 1. Assessment of thirteen insecticide formulations for rootworm control in Centre Co., PA, during 1995.

Treatment	Formulation	Rate ^a	Application method ^b	Root Rating
Fortress	2.5G	0.15	T-Band	2.6
Furadan	4F	1.20	BRD/CLT	2.6
Counter	15G	1.20	T-Band	2.7
Force	3G	0.12	In-furrow	2.8
Force	1.5G	0.12	T-Band	2.8
Force	1.5G	0.12	In-furrow	3.0
Lorsban	15G	1.20	T-Band	3.0
Fortress	2.5G	0.15	In-furrow	3.1
Force	3G	0.12	T-Band	3.2
Regent	1.5G	0.12	T-Band	3.2
Furadan	4F	1.20	BRD	3.7
Regent	1.5G	0.12	In-furrow	3.9
DyfonateII	15G	1.20	T-Band	4.4
Untreated	-	-	-	5.4

^a Rates are expressed as oz. AI/1000 ft. of row.

^b T-Band and In-furrow granular applications were made at planting (May 16).

BRD/CLT = Furadan broadcast on June 16, followed immediately with cultivation; BRD = broadcast with Furadan 4F only.

Herbicide Rotational Crop Restrictions

Below are selected corn and soybean herbicides that are relatively new or have the potential to cause problems in rotational crops. Though the majority of these are "new" chemistry products, keep in mind that older herbicides such as the triazines (e.g., atrazine, *Bladex*, *Princep*, *Sencor*) and chloroacetamides (e.g., *Dual*, *Micro-Tech*, *Frontier*, *Harness*, *Surpass*) still have certain rotation restrictions as well. The information listed in this table is our interpretation of label statements or a "best-guess" estimate. Consult the product labels if two or more herbicides are applied during the same season. Before applying any herbicide, consult the most recent label.

Rotational Crops Following Corn (months after application)^a

Herbicide	Alfalfa	Clover	Field Corn	Grain sorghum	Soybeans	Sweet corn	Winter Rye	Spring oats
Accent	12	10	NR	10	10	10	4	8
Basis	10	18	NR	18	0.5	10	18	8
Beacon	8	18	0.5	8	8	8	3	8
Broadstrike + Dual	4	26 ^b	NR	12	10.5	10.5	4	4
Exceed	15	15	1	10	10	3	10	10
Permit	18	18	NR	NR	10	NY	AH	AH
Scorpion III	10.5	26 ^b	NR	12	10.5	10.5	4	4

^a AH = after harvest; NY = next year; NR = no restrictions
^b Plus successful field bioassay.

rates (2.5 oz. active ingredient/acre for Aztec and 2.6 for Fortress), compared to other granulars (typically 21 oz. active ingredient/acre).

Trials in Pennsylvania (Table 1) indicate that these new compounds compare favorably with others presently registered. As with other organophosphates, there is concern with insecticide/herbicide interaction in regards to plant injury. Typically, the greatest concern with insecticide/herbicide interactions is with using Counter, which has systemic activity in the plant, and ALS herbicides (sulfonylureas, imidazolinones, sulfonamids). Neither Aztec or Fortress are systemic, and reports from Iowa have not found herbicide interactions with them. Nonetheless, it is something to keep

in mind.

Fortress 2.5G and Aztec are available in typical bags, and are applied as any other granular. These new granular materials are labeled for field corn, popcorn, sweet corn, silage corn, and seedcorn, and are also labeled for control of wireworms, white grub, and seedcorn maggot. They are also labeled for cutworms, but this remains to be effectively evaluated. Please read the label of these products carefully, as there are special precautions relative to application near water, wildlife and fish. During 1996, Fortress 5G will be sold and applied only through the Smartbox™, a closed handling system from DuPont that mounts on the planter. If you need more details, contact your local DuPont representative.



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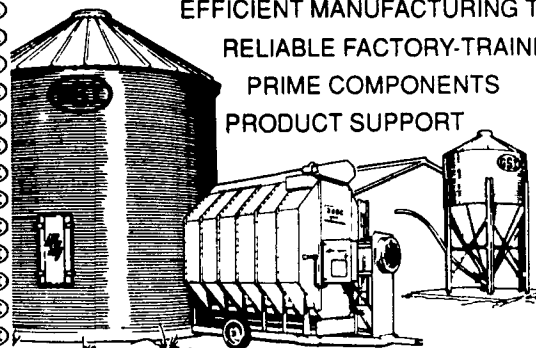
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