

# Full Rate vs. Three-Fourths Rate Corn Rootworm Insecticide

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**Private Industry Cooperator: Jerry Mulliken**

**OBJECTIVE:** To determine and document the profitability of a full rate, reduced rate and zero rate of corn rootworm insecticide treatment.

<b>FULL RATE</b>	<b>REDUCED RATE (Three-fourths rate)</b>	<b>ZERO RATE (1994 and 1995 only)</b>
<b>Treatment:</b>	<b>Treatment:</b>	<b>Treatment:</b>
Fertilizer: Anhydrous Ammonia	Fertilizer: Anhydrous Ammonia	Fertilizer: Anhydrous Ammonia
Herbicide: 1993-1 pint Roundup, 1 pint 2,4-D, 1 pint Buctril and .667 ounces Accent	Herbicide: 1993-1 pint Roundup, 1 pint 2,4-D, 1 pint Buctril and .667 ounces Accent	Herbicide: 1993—N/A
1994-2.5 pounds Extrazine , 1 pound Atrazine, 1 pint 2,4-D and 1 pint Buctril	1994-2.5 pounds Extrazine, 1 pound Atrazine, 1 pint 2,4-D and 1 pint Buctril	1994-2.5 pounds Extrazine, 1 pound Atrazine, 1 pint 2,4-D and 1 pint Buctril
1995—.6 gallons Bicep and 1 pint 2,4-D	1995—.6 gallons Bicep and 1 pint 2,4-D	1995—.6 gallons Bicep and 1 pint 2,4-D
Insecticide: Lorsban 15G ,           8.7 pounds/acre	Insecticide: Lorsban 15G 6.5 pounds/acre	Insecticide: None
Plant	Plant	Plant
Harvest	Harvest	Harvest

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Comparative cost (per acre)		Comparative cost (per acre)		Comparative cost (per acre)	
<b>FULL RATE</b>		<b>REDUCED RATE .</b>		<b>ZERO RATE</b>	
<b><u>1993</u></b>		<b><u>1993</u></b>		<b><u>1993</u></b>	
Insecticide	\$14.79	Insecticide	\$11.05	N/A	
<b>Total</b>	<b><u>\$14.79</u></b>	<b>Total</b>	<b><u>\$11.05</u></b>		
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<b><u>1994</u></b>		<b><u>1994</u></b>		<b><u>1994</u></b>	
Insecticide	\$13.92	Insecticide	\$10.40	Insecticide	\$ 0.00
<b>Total</b>	<b><u>\$13.92</u></b>	<b>Total</b>	<b><u>\$10.40</u></b>	<b>Total</b>	<b><u>\$ 0.00</u></b>
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<b><u>1995</u></b>		<b><u>1995</u></b>		<b><u>1995</u></b>	
Insecticide	\$14.95	Insecticide	\$10.73	Insecticide	\$0.00.
<b>Total</b>	<b><u>\$14.95</u></b>	<b>Total</b>	<b><u>\$10.73</u></b>	<b>Total</b>	<b><u>\$ 0.00</u></b>

<b>VARIABLE</b>	<b>1993 CORN</b>	<b>1994 CORN</b>	<b>1995 CORN</b>
Final population (seeds/acre)			
Full	20,100	19,900	17,700
Reduced	19,700	18,800	17,200
None	—	19,500	18,300
Moisture (%)			
Full	19.3	14.7	15.5
Reduced	19.2	14.6	15.4
None	—	14.6	15.6

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<b>VARIABLE</b>	<b>1993 CORN</b>	<b>1994 CORN</b>	<b>1995 CORN</b>
Test weight (pounds/bushel)			
Full	<b>57.7</b>	<b>58.8</b>	<b>58.5</b>
Reduced	<b>57.5</b>	<b>58.9</b>	<b>58.6</b>
None	<b>—</b>	<b>58.8</b>	<b>58.5</b>
Yield (15.5 %) (bushels/acre)			
Full	111 **	151 **	78
Reduced	109	148	77
None	<b>—</b>	145	<b>80</b>

\*\* significantly different at 95% confidence level

**summary:** The full insecticide rate yield was significantly higher than the reduced rate in 1993. Full insecticide rate costs were about \$4.00/acre higher than the three-fourths insecticide rate.

This comparison was expanded in 1994 to include a zero rate treatment. A significant difference was measured between the full and three-fourths insecticide treatments in 1994.

In 1995, the insecticide treatment did not significantly influence grain yield.