

Band Spraying

April 2006

Banding Represents the Greatest Opportunity for Cost-Effective Weed Control

Achieving effective weed control has been identified as the most serious sugarbeet production problem in twenty-four of the last twenty-seven years.

American Crystal Sugar Company model farm data analysis for 2004 shows income loss in excess of \$18 million due to yield-robbing weeds. Grower cost benchmarking studies show average expenditures of \$88/acre in 2003 and \$74/acre in 2004 and 2005 for weed control. Improved weed control can increase on-farm profit by \$40 to \$100/acre on over 50 percent of American Crystal Sugar Company acreage each year.

Band Vs. Broadcast Application

Growers use many different weed control strategies in the Red River Valley. Most common application methods are band and broadcast spraying. Historical use of each is summarized in Table 1. Many factors influence grower choice of application methods. For example, wet fields, and low cost of herbicides favor broadcast applications. Band spraying would be favored by ideal spraying conditions, the use of expensive herbicides and the desire to reduce production costs. About two-thirds of all growers can significantly reduce production costs by banding herbicides.

Table 1.
Method of Herbicide Application 2001-2005

Year	Application Methods		
	Band	Broadcast by Ground	Broadcast by Air
	% of Acres		
2001	41	49	10
2002	38	48	14
2003	37	56	7
2004	29	62	9
2005	29	53	18
Average	35	54	11

Benefits of Band Spraying

- Cost savings of 50 to 67 percent (\$35-\$55/acre) – depends on band width
- Ability to efficiently use more costly herbicides
- Reduced risk of PPI or PRE Nortron carryover
- Less herbicide use is environmentally responsible
- Ability to enhance on-farm profit

Table 2.
Weed Control Cost-Saving Opportunity

(herbicide prices may vary widely by year)

Herbicide	Cost/Acre, \$		
	Broadcast	11 Inch Band	7 Inch Band
Pre Nortron (7 pt/A) \$75/gal	\$66	\$33	\$21
Pre Dual (1.5 pt/A) \$96/gal	\$18	\$9	\$6
Standard Progress			
Microrate – 4X \$85/*	\$74	\$37	\$23
Progress Alone			
Conventional Rate – 4X	\$76	\$38	\$24
Progress + Stinger			
+ Upbeet + Select – Conv 4X	\$158	\$79	\$50
Outlook (21 oz) \$119/gal	\$20	\$10	\$6

* 5.7 oz 2x/8.7 oz 2x



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One Redroot Pigweed per 10 feet of row can reduce yields and revenue per acre by 3 to 10% depending on planting date.

Recommendations for Effective Banding

- Don't travel at an excessive speed for the equipment available
- Consider use of wind shields
- Avoid spraying in very windy conditions – not more than 10 mph
- Effectively maintain a uniform nozzle height across the boom
- Set the band width from the top of the weeds, not from the soil surface
- Eleven-inch band width may provide better weed control than seven-inch bands
- Carefully calibrate every nozzle
- Use nozzles designed for band spraying with an even pattern across the band
- Larger nozzle sizes and higher water volumes reduce drift off the band



Banded Nortron at 7 pints (broadcast equivalent) per acre effectively controls a severe Kochia infestation.

Summary

Many valid reasons exist to justify band spraying of herbicides on sugarbeets. It's strongly recommended that growers do a careful economic impact analysis of banding on profitability. Remember, at least one additional row crop cultivation will be necessary when banding. This would cost about \$5.00 per acre.

Band spraying cost savings are equivalent to producing 1-1.5 tons more yield per acre.

For additional information, contact your agriculturist, university specialist, crop consultant, chemical dealer or manufacturer. See the weed control section of the current Sugarbeet Pocket Production Guide. See Ag Notes #414 and #481. Also see the weed control section of the annual Sugarbeet Research and Extension Reports.

Web sites:
www.sbreb.org
www.crystalsugar.com

