

XIII LIBERTY TANK MIX / TIMING TRIAL

Objective: To demonstrate strategies to improve the efficacy of the contact herbicide Liberty on grassy weeds.

Background: Liberty is a non-selective contact herbicide that is used to control weeds in Liberty Link canola. Previous research has indicated Liberty to be less effective on controlling grasses than other non-selective herbicides. Reducing the rate of Liberty while adding a half rate of a grass herbicide should improve grass control while maintaining control of broadleaf weeds.

Methodology: The Liberty tank mix trial was conducted using the variety InVigor 2573 and was integrated into the Systems Comparison Trial. The trial consisted of the following treatments in a randomized block design:

- A) Liberty tank mix - (28 oz/ac) + Poast (6 oz/ac) + ammonium sulfate (3 lb/ac) applied at the 3-leaf stage.
- B) Liberty - full rate (34 oz/ac) + ammonium sulfate (3 lb/ac) applied at the 3-leaf stage.
- C) Liberty - low rate (20 oz/ac) + ammonium sulfate (3 lb/ac) applied at the 2-leaf stage

The original plan for treatment C was for a split application of 20 oz/ac at the 2 and 6-leaf stages. However, weather conditions were not conducive for the application at the 6-leaf stage, so Liberty was applied at only the 2-leaf stage.

Observation: There were few weeds in this trial. All of the small annual grasses were controlled by all three treatments. Based on visual ratings, quackgrass in the low rate treatment showed approximately 40 % control at seven days after application. Quackgrass was not present in the other two treatments. The tank mix and full rate of Liberty provided approximately 80 % control of Canada thistle compared to 50 % with the low rate of Liberty. Minor crop injury in the form of yellowing, was noted on the tank mix and full rate treatments.

Results:

LIBERTY TANK MIX TRIAL				
Thief River Falls, MN				
Treatment	Yield (lb/ac)	Yield (bu/ac)	Contribution Margin (\$/ac)	Oil (%)
Liberty + Poast	1792	35.8	22.28	41.2
Liberty - full rate	1859	37.2	26.89	41.0
Liberty - low rate	1772	35.4	29.08	40.9
LSD (0.10)	149.8	2.99		1.04
CV%	6.0	6.0		1.9

Discussion:

There were no yield or oil differences among the treatments. Contribution margins reflect the differences in yield and chemical costs. The low rate of Liberty gave the highest contribution margin primarily due to approximately \$9.00/ac less for chemical. With the light weed pressure that was present this year, the low rate of Liberty performed adequately.