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Delayed preemergence herbicides for corn

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Delayed preemergence herbicides for corn

Abstract

Each year some fields have corn emerge prior to the application of preemergence herbicides. Many preemergence products registered for corn allow for application after corn emergence; however, Axiom, Balance, and Epic do not include early postemergence applications on the label. Consult labels to determine specific restrictions concerning delayed preemergence applications. The performance of preemergence herbicides is less consistent when application is delayed, primarily due to weeds emerging prior to exposure to the herbicide.

Keywords

Agronomy

Disciplines

Agricultural Science | Agriculture | Agronomy and Crop Sciences | Weed Science

INTEGRATED CROP MANAGEMENT

Delayed preemergence herbicides for corn

Each year some fields have corn emerge prior to the application of preemergence herbicides. Many preemergence products registered for corn allow for application after corn emergence; however, Axiom, Balance, and Epic do not include early postemergence applications on the label. Consult labels to determine specific restrictions concerning delayed preemergence applications.

The performance of preemergence herbicides is less consistent when application is delayed, primarily due to weeds emerging prior to exposure to the herbicide. Researchers at Michigan and Wisconsin conducted research from 1993 to 1995 to investigate the impact of application delays on the performance of tank mixes of Banvel and acetamide herbicides (alachlor, metolachlor, and acetochlor). The three acetamide herbicides performed similarly across application dates, thus data presented are means of the three herbicides (Table 1). The at-planting application provided better or equal giant foxtail control than applications made 7 or 14 days after planting (DAP) in all experiments. Applications made 7 days after planting resulted in reduced giant foxtail control in one out of six experiments, whereas a 14-day delay resulted in reduced giant foxtail control in four experiments.

Application timing did not affect common lambsquarters control in five of the six experiments. At Wisconsin in 1995, both the 7- and 14-DAP applications provided better control than the at-planting treatment. The difference in response to application timing between foxtail and lambsquarters is due to the postemergence activity on common lambsquarters provided by dicamba. Addition of Accent to the combinations eliminated the reduction in giant foxtail control caused by application delays (data not presented).

Preemergence herbicides applied within a few days of planting will provide more consistent control than applications that are delayed 1 or 2 weeks after planting. In situations where weather conditions or other factors cause application delays, preemergence herbicides may still provide acceptable control. However, these fields should be monitored closely to determine the need for additional control tactics. Where delays in application occur, rotary hoeing prior to or after application can reduce the likelihood that additional control tactics will be needed later in the season.

Table 1. Influence of application timing on performance of acetamide-dicamba tank mixes in corn (1993-1995).

	Location					
Timing	MI - 93	WI - 93	MI - 94	WI - 94	MI - 95	WI - 95

% Giant foxtail control

At planting	93	95	70	91	95	94
7 DAP	92	93	61	93	97	90
14 DAP	93	56	58	68	97	90
LSD	NS	16	10	10	NS	3

% Common lambsquarters control

At planting	93	97	96	96	97	69
7 DAP	93	94	97	98	99	88
14 DAP	95	98	96	96	99	89
LSD	NS	NS	NS	NS	1	12

Rainfall (inches)

AP to 6 DAP	0.16	1.26	0.47	0.08	0.39	0
7 to 13 DAP	0	0.39	0	1.02	0.12	2.4
14 to 27 DAP	2.91	1.97	0.63	0.51	2.20	3.4

Source: Spandl, Rabaey, Kells, and Harvey. 1997. Weed Technol. 11: 602-607.

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