

Chemical Weed Control in New Spring-Seeded Alfalfa

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Introduction

WEED MANAGEMENT IS ONE OF THE MOST IMPORTANT PRACTICES in alfalfa (*Medicago sativa* L.) production, particularly in new seeding. Because established alfalfa is very competitive and able to tolerate different herbicides, multiple herbicide options (e.g., carfentrazone, diuron, flumioxazin, hexazinone, imazethapyr, MCPA, metribuzin, pendimethalin, paraquat, saflufenacil, terbacil, etc) are currently available for effective weed control in alfalfa after the first harvest or in established stands. Thus, weed control before the first harvest remains one of the critical practices in alfalfa production. Weeds tend to be more problematic in spring-seeded alfalfa compared to summer or fall-seeded alfalfa, since summer



Figure 1. Weedy newly planted alfalfa at Kimberly, Idaho.

annual weeds often emerge at the same time as the alfalfa (Figure 1).

It is important to control weeds in newly seeded alfalfa to reduce weed competition and to increase establishment success as well as subsequent alfalfa forage yield and nutritive value. There are two approaches to chemical weed control in newly seeded alfalfa before the first cutting: 1) preemergence or preplant incorporated and 2) early postemergence.

Preemergence or Preplant Incorporated

Herbicides like benefin, EPTC, and trifluralin can be applied and incorporated (mechanically) for preemergence control of susceptible weeds right before planting alfalfa. Because these herbicides normally do not provide adequate weed

control their application needs to be followed by labeled postemergence herbicides for effective weed control (Figure 2 and Table 1). In addition, these herbicides do not control emerged weeds. If there are emerged weeds at the time of application, apply an effective postemergence herbicide (e.g., paraquat or glyphosate) that will not leave any residue to injure the alfalfa.

Early Postemergence

Right after alfalfa emergence, and until the fourth leaf stage, acetochlor (a group 15 herbicide) can be applied to spring-planted alfalfa. Acetochlor does not control weeds that have already emerged. In addition,

its application alone does not provide adequate weed control (Figure 2 and Table 1). Similarly, pendimethalin may also be applied for residual control after the second trifoliolate leaf fully expands. Just like acetochlor, pendimethalin does not control emerged weeds. Thus, tankmix these herbicides or follow up with an effective postemergence herbicide. Once alfalfa is at or exceeds the two trifoliolate stage, apply herbicides such as imazamox, bromoxynil, and imazethapyr to control small, emerged weeds. Postemergence herbicides like imazamox or bromoxynil provide good control of susceptible weeds (Figure 2 and Table 1), especially when they are very small (≤ 3 inches tall).

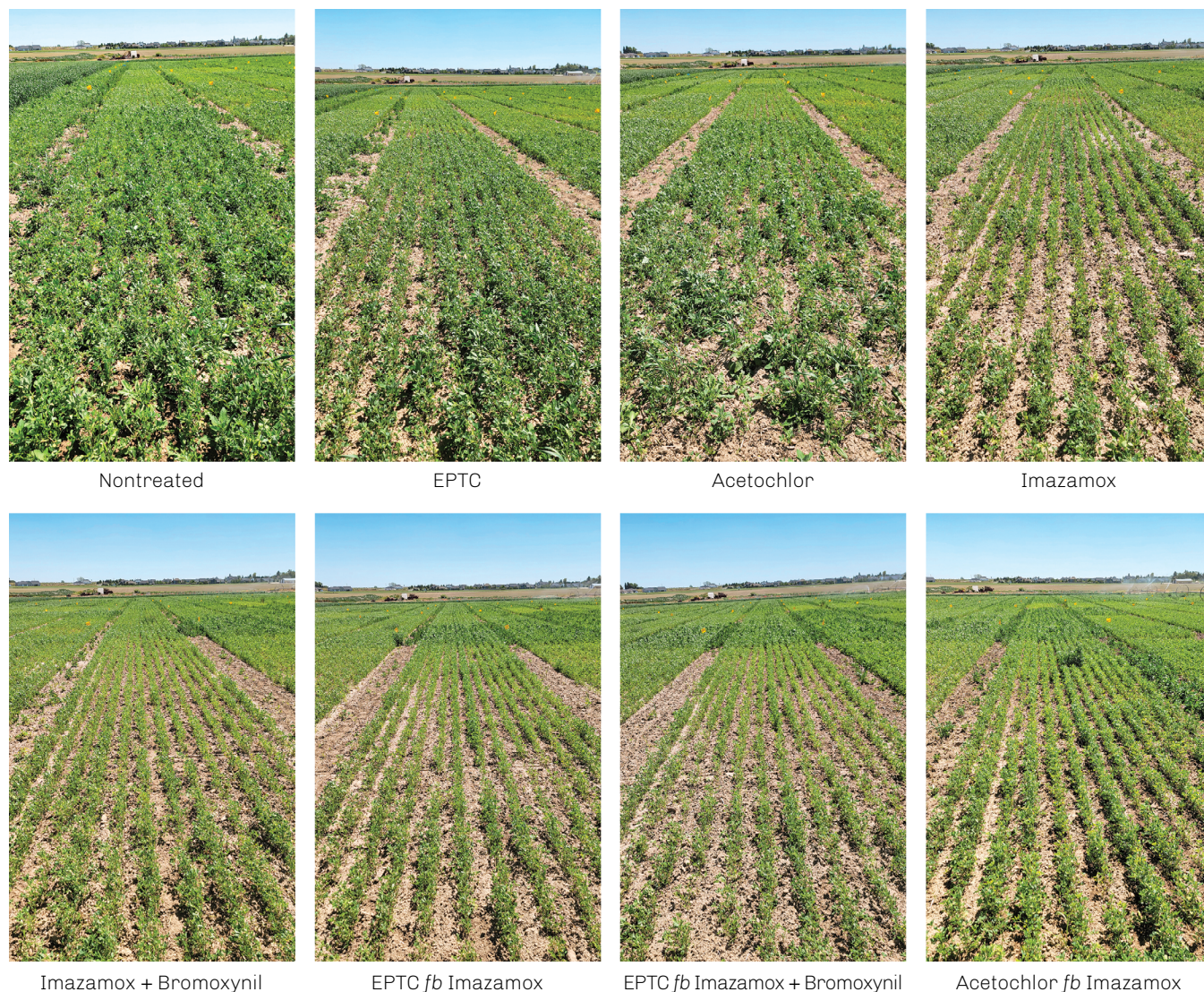


Figure 2. The efficacy of preemergence and postemergence herbicides for weed control in new spring-planted alfalfa. Herbicide treatments that included imazamox or imazamox + bromoxynil provide better weed control compared to EPTC or acetochlor. See Table 1 for treatment details.

Table 1. The efficacy of preemergence and early postemergence herbicides for weed control in new spring-planted alfalfa.

Herbicide	Common Lambsquarters	Kochia	Redroot Pigweed	Shepherd's Purse	Green Foxtail
	% efficacy				
Eptam 7E (EPTC ^a)	59	59	66	81	64
Warrant (acetochlor ^b)	29	33	43	48	43
Raptor (imazamox ^c)	84	73	88	95	90
Raptor (imazamox) + Maestro (bromoxynil ^c)	94	92	95	95	88
EPTC <i>fb</i> Raptor (imazamox)	91	83	92	97	87
EPTC <i>fb</i> Raptor (imazamox) + Maestro (bromoxynil)	95	92	95	96	88
Warrant (acetochlor) <i>fb</i> Raptor (imazamox)	85	81	88	93	87

^aapplied preemergence; ^bapplied right after alfalfa had fully emerged; ^capplied early postemergence (3 trifoliolate alfalfa); *fb* = followed by.

Further Reading

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