

Alternative Herbicide Demonstration

Sandy Creek Project: Field trial

Introduction

Diuron and hexazinone have traditionally been widely used for controlling weeds in ratoons. However, restrictions around buffer zones and spray windows for these chemicals dictate the need for alternatives. A trial was carried out to compare these residuals against alternative products, looking at weed control and chemical runoff.

Trial Design

- Location– Brightly sub-catchment of Sandy Creek
- Soil Type: Calen soil type – a neutral to alkaline bleached grey-yellow duplex soil.
- History - Moderate weed pressure and a thick green trash blanket (previous yield >120t/ha)
- Application – Products broadcast applied on 25/9/19 and given 40mm of overhead irrigation on 30/9/19.
- Sampling – Weed control assessments conducted for 16 weeks, in-field runoff monitored for 20 weeks

Tab 1. Herbicide Treatments

Treatment	Product	Product Rate Applied	Product Active Ingredient Concentration	Active Ingredient g/ha applied	Total Active Applied g/ha	Aquatic risk (x1 000 000)
1	Barrage®	3.5kg/ha	468g/kg diuron	1638	2,100	126
			132g/kg hexazinone	462		304 (430 TTL)
2	Amitron® +	800g/ha +	700g/kg amicarbazone	560	672.5	349
			750g/kg isoxaflutole	112.5		94 (443 TTL)
3	Bobcat i-Maxx SG®	630g/ha	750g/kg hexazinone	472.5	567	311
			150g/kg imazapic	94.5		72 (383 TTL)

Findings

- All treatments provided a high level of weed control – likely due to the trash blanket. Weeds were slightly more prevalent in the unsprayed control.
- Weeds observed were summer grass, awnless barnyard grass, nutgrass, ipomoea vines and blue top.
- The unsprayed control could easily have been cleaned up with a late directed spray of a knockdown herbicide such as paraquat.
- Runoff mainly occurred in the first runoff event. The time between application and rainfall is key.
- Product choice is an important factor in runoff impacts.
- Diuron was detected at every runoff event.

Fig 4. Runoff concentrations at each runoff site

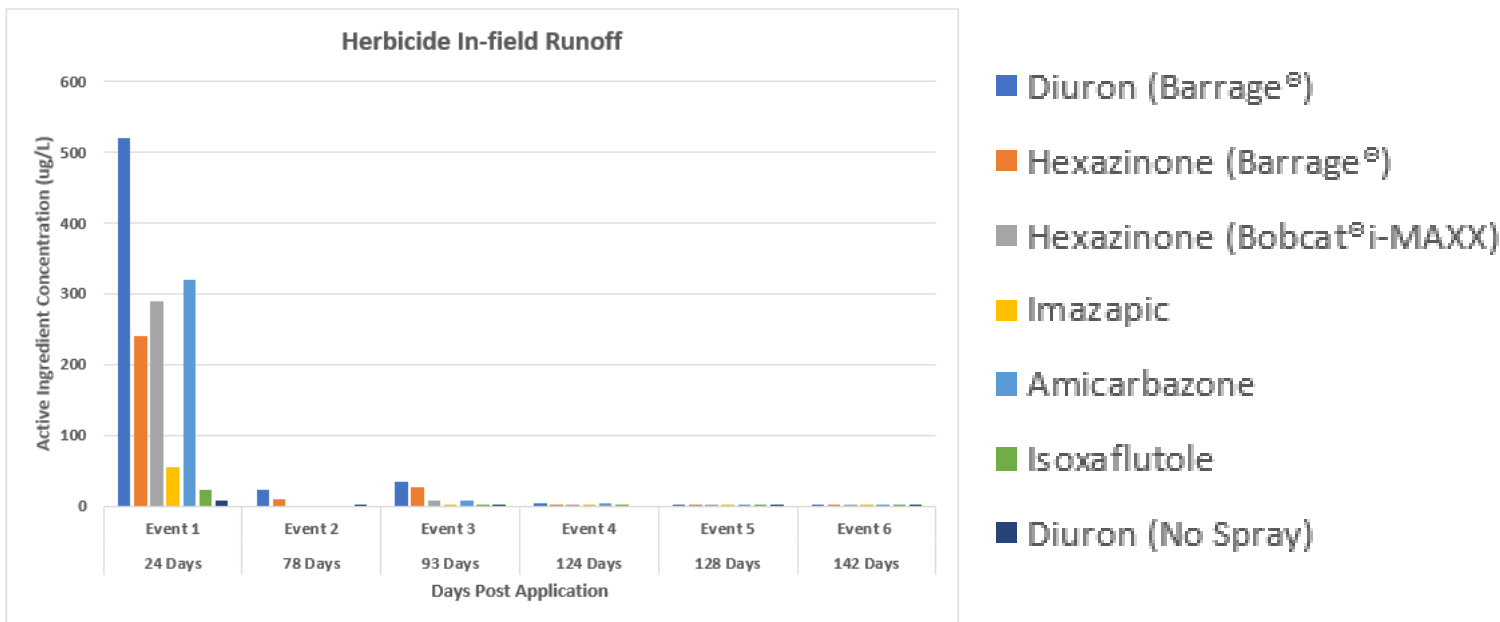


Fig 2. Treatments 6 weeks post-application. L-R: T1 Barrage, T2 Amitron + Balance, T3 Bobcat i-MAXX and T4 No Spray



Barrage

Amitron + Balance

Bobcat i-MAXX

No Spray