

COMPATIBILITY OF AXIAL WITH VARIOUS BROADLEAF HERBICIDES FOR EARLY WILD OAT AND WILD RADISH CONTROL IN WHEAT



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AIM

The objective of this demonstration was to evaluate the biological compatibility and crop safety of Axial compared with Achieve or Wildcat, when applied alone or in mixtures with common broadleaf herbicides for early wild oat and wild radish control in wheat.

BACKGROUND

Growers are increasingly looking for one pass options to control both grass and broadleaf weeds. However, grass herbicide efficacy is often compromised when mixed with common broadleaf herbicides. This trial was conducted to demonstrate the crop safety of Axial when mixed with various broadleaf herbicides when compared to other similar group A grass selectives.

AXIAL is a Group A grass selective herbicide, its active ingredient is Pinoxaden. Unlike Achieve which is a group A DIM and Wildcat, a group A FOP, Axial is part of the sub group DEN's. AXIAL is strong on wild oats and will control FOP resistant wild oats, at appropriate rates it provides similar levels of control to Achieve on susceptible and DIM resistant ryegrass populations.

To ensure adequate population of target species canola and domestic oats were topdressed to the site prior to seeding to simulate radish and wild oats respectively.

TRIAL DETAILS

Property	McIlroy Family, Pithara
Plot size & replication	18m x 1.25m unreplicated demonstration
Soil type	Sandy Loam
Sowing date	06/06/09
Seeding rate	70 kg/ha Westonia
Fertiliser (kg/ha)	06/06/09: 75 kg/ha DAP drilled at seeding
Paddock rotation	2008 = Lupins, 2007 = Wheat
Herbicides	06/06/09: 2 L/ha Spray.Seed pre seeding 22/07/09: Spray treatments applied with water volume of 80 L/ha with Hardi flat fan 110001 nozzles.
Growing Season Rainfall	201mm

RESULTS

Table 1. Herbicide efficacy (44 days after treatment) of various grass and broadleaf sprays.

Efficacy rated on 0-100 scale where 0 = no effect and 100 = full death/brownout.

Crop Phytotoxicity 0 = no crop effect 100 = crop death.

Treatment	Rate	Crop Phytotoxicity	Radish	Oats
Untreated	--	0	0	0
AXIAL® + Adigor®	150 mL + 0.5%	0	0	100
AXIAL® + Adigor®	200 mL + 0.5%	0	0	100

Treatment	Rate	Crop Phytotoxicity	Radish	Oats
AXIAL® + MCPA LVE 500 + Adigor®	200 mL + 500 mL + 0.5%	0	80	100
AXIAL® + Tigrex+ Adigor®	200 mL + 750 mL + 0.5%	0	95	100
AXIAL® + Jaguar+ Adigor®	200 mL + 1.0 L + 0.5%	0	95	100
AXIAL® + Bromicide 200 + Adigor®	200 mL + 2.1 L + 0.5%	0	100	60
AXIAL + Bromicide MA + Adigor®	200 mL + 1.4 L + 0.5%	0	90	70
AXIAL® + Paragon + Adigor®	200 mL + 250 mL + 0.5%	0	90	100
AXIAL® + Velocity + Adigor®	200 mL + 500 mL + 0.5%	0	90	90
AXIAL® + Precept + Adigor®	200 mL + 2.0 L + 0.5%	0	100	100
AXIAL® + Precept® + MCPA LVE + Adigor®	200 mL + 1.0 L + 500 mL + 0.5%	0	95	100
AXIAL® + Logran® + MCPA LVE + Adigor	200 mL + 15 g + 500 mL + 0.5%	0	70	70
AXIAL® + Paragon + Bromicide MA + Adigor®	200 mL + 150mL + 750mL + 0.5%	0	90	95
Untreated	--	0	0	0
Achieve® WG + Supercharge®	380 g + 0.75%	0	0	100
Achieve® + MCPA LVE 500 + Supercharge®	380 g + 500 mL + 0.75%	0	75	100
Achieve® + Tigrex+ Supercharge®	380 g + 750 mL + 0.75%	0	95	100
Achieve® + Jaguar+ Supercharge®	380 g + 1.0 L + 0.75%	0	85	95
Achieve® + Bromicide® 200 + Supercharge®	380 g + 2.1 L + 0.75%	0	80	90
Achieve® + Bromicide® MA + Supercharge®	380 g + 1.4 L + 0.75%	0	80	100
Achieve® + Paragon® + Supercharge®	380 g + 250 mL + 0.75%	0	70	100
Achieve® + Velocity® + Supercharge®	380 g + 500 mL + 0.75%	0	60	50
Achieve® + Precept® + Supercharge®	380 g + 2.0 L + 0.75%	0	95	100
Achieve® + Precept® + MCPA LVE + Supercharge®	380 g + 1.0 L + 500 mL + 0.75%	0	100	95
Achieve® + Logran® + MCPA LVE + Supercharge®	380 g + 15 g + 500 mL + 0.75%	0	95	40
Achieve® + Paragon® + Bromicide® MA + Adigor®	380 g + 150 mL + 750 mL + 0.75%	0	100	60
Untreated	--	0	0	0
Wildcat® + Adigor®	300 mL + 0.5%	0	0	100
Wildcat® + MCPA LVE 500 + Adigor®	300 mL + 500 mL + 0.5%	0	80	95
Wildcat® + Tigrex® + Adigor®	300 mL + 750 mL + 0.5%	0	90	100
Wildcat® + Jaguar® + Adigor®	300 mL + 1.0 L + 0.5%	0	100	75
Wildcat® + Bromicide® 200 + Adigor®	300 mL + 2.1 L + 0.5%	0	60	70
Wildcat® + Bromicide® MA + Adigor®	300 mL + 1.4 L + 0.5%	0	90	80
Wildcat® + Paragon® + Adigor®	300 mL + 250 mL + 0.5%	0	90	90
Wildcat® + Velocity® + Adigor®	300 mL + 500 mL + 0.5%	0	100	100
Wildcat® + Precept® + Adigor®	300 mL + 2.0 L + 0.5%	0	100	90
Wildcat® + Precept® + MCPA LVE® + Adigor®	300 mL + 1.0 L + 500 mL + 0.5%	0	90	80
Wildcat® + Logran® + MCPA LVE + Adigor®	300 mL + 15 g + 500 mL + 0.5%	0	80	60
Wildcat® + Paragon® + Bromicide® MA+ Adigor®	300 mL + 150 mL + 750 mL + 0.5%	0	85	70

COMMENTS

- **Note:** This trial was an unreplicated demonstration with observations/assessments based on one plot per treatment only, and as such results may not be definitive.
- Crop phytotoxicity was similar between all three grass selective herbicides. Consistent, low levels of phytotoxicity were observed in mixes containing Tigrex®, Jaguar® and Paragon® when assessed at 7 and 13 days after treatment (DAT). No crop effects were visible by the final assessment timing (44DAT).
- Axial® and Achieve® provided the greatest level of oat control. Oat control with Wildcat® was generally 10% poorer than Axial® or Achieve® at 44 DAT.
- Broadleaf herbicides containing or mixed with Bromoxynil generally had a reduced effect on wild oat control regardless of the grass selective partner (Axial®, Achieve® or Wildcat®). Mixes with Logran® and MCPA also gave very poor oat control.
- Although the trial did not set out to evaluate ryegrass control, there were significant natural levels of ryegrass in the trial plots and so observations were made. It should be noted that the Axial® rate of 200mL is below the recommended label rate for ryegrass control (250 to 300mL). Axial® at 200 mL/ha generally performed similarly or slightly better than Achieve® at 380 g/ha for control of ryegrass. The overall level of control at 44 DAT was only 50% which in part would reflect the low application rate but may also be expected due to background level of group A resistant ryegrass. Wildcat was poorer again than Axial® or Achieve® for ryegrass control, presumably due to a dominant FOP resistant ryegrass population
- Most broadleaf and grass mix treatments provided high levels of radish control at 44 DAT. Mixes containing MCPA LVE and MCPA LVE + Logran® were generally less effective, however this may be due more to the resistance status of the radish than any antagonism between the grass selectives and broadleaf herbicides.
- At 13 DAT and 44 DAT Velocity® and Precept® provided very good crop safety and similar levels of radish control compared with Jaguar® and Tigrex® when in mixes, regardless of the grass selective partner. The Precept grass selective mixes did appear to be slightly weaker than the similar Tigrex® mixes when assessed 7 DAT.

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