

Group 2 herbicide tolerant pulse crops

Gol Gol 2021

Key Findings

- Grain yields of all species (lentil, field pea, faba bean and chickpea) at this site were very low and generally less than 0.5 t/ha. Seasonal conditions were very dry during autumn and winter before favourable spring growing conditions (rainfall and relatively cool maximum temperature during September and October) provided for some yield recovery.
- Triasulfuron (e.g. Logran, sulfonyleurea herbicide Group 2) residues and the in-crop application of Intercept® (imazamox + imazapyr, an imidazoline herbicide Group 2) resulted in total crop failure in the conventional (non-herbicide tolerant) varieties of all four species.
- The presence of Intercept® residue did not affect the grain yield of the conventional field pea variety (PBA Wharton[®]) or conventional faba bean variety (PBA Samira[®]). However, Intercept® residues completely killed the conventional lentil variety PBA Bolt[®] and reduced yield by two-thirds in the conventional chickpea variety CBA Captain[®].
- PBA Highland XT[®] (imidazolinone tolerant) showed good tolerance to Group 2 herbicide treatments, including where triasulfuron residues were simulated.
- Triasulfuron residues suppressed the yield of the imidazolinone tolerant faba bean (PBA Bendoc[®]), field pea (GIA2005P) and chickpea (D16218). However, yield was not affected by the post-emergent application of Intercept® and Broadstrike®.
- Always read and follow product label thoroughly.



Figure 34: Group 2 herbicide tolerance pulse trial at Gol Gol in 2021.

Trial Details

Table 38: Sowing date, starter fertiliser and treatments (pre- and post-emergent herbicides and simulated Group 2 residue) applied to lentil, field pea, faba bean and chickpea trials at Gol Gol in 2021.

Management		
Sowing date	Sown into marginal moisture conditions on 31 May	
Starter fertiliser	50 kg/ha Granulock Z (11% nitrogen, 21.8% phosphorus, 4% sulphur, 1% zinc)	
Species	Variety – conventional	Variety – imidazolinone tolerant
Lentils	PBA Bolt [Ⓛ]	PBA Highland XT [Ⓛ]
Field peas	PBA Wharton [Ⓛ]	GIA2005P
Faba beans	PBA Samira [Ⓛ]	PBA Bendoc [Ⓛ]
Chickpeas	CBA Captain [Ⓛ]	D16218
Herbicide treatments		
Pre-emergent herbicide	Simulated Group 2 residue*	Group 2 post-emergent herbicide
Nil	Nil	Nil
Diuron 550 g/ha+ Trifluralin 1.25 L/ha	Nil	Nil
Diuron 550 g/ha+ Trifluralin 1.25 L/ha	Nil	Broadstrike® 25 g/ha
Diuron 550 g/ha+ Trifluralin 1.25 L/ha	Nil	Intercept® 750 ml/ha
Diuron 550 g/ha+ Trifluralin 1.25 L/ha	Intercept® 750 mL/ha	Nil
Diuron 550 g/ha+ Trifluralin 1.25 L/ha	Triasulfuron 35 g/ha	Nil

* Treatments applied pre-sowing and incorporated by sowing.

Note: diuron 900 g/kg; trifluralin 480 g/L; triasulfuron 750 g/kg; Intercept® = 33 g/L Imazamox + 15 g/L Imazapyr; Broadstrike® = 800 g/kg flumetsulam.

Results

Grain yield

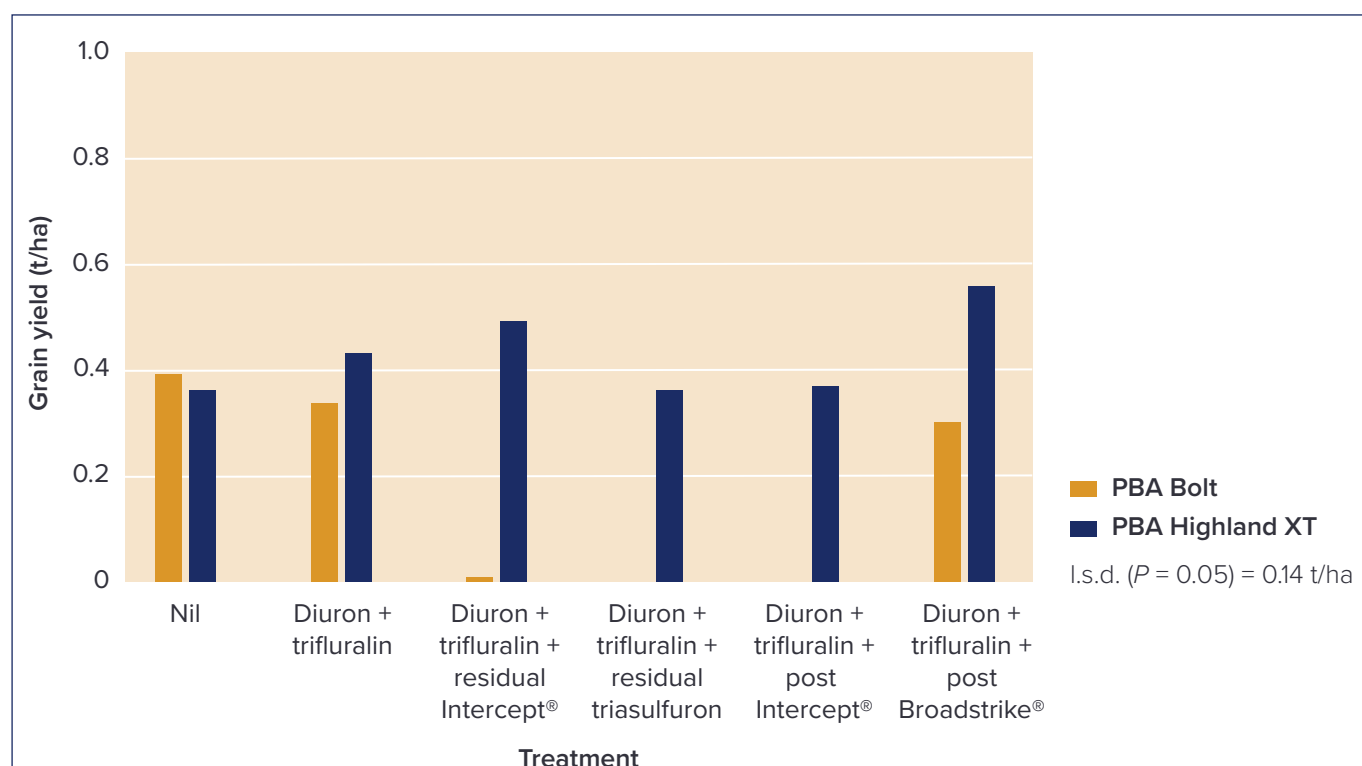


Figure 35: Grain yield of conventional (PBA Bolt[Ⓛ]) and Group 2 imidazolinone tolerant (PBA Highland XT[Ⓛ]) lentil varieties in response to herbicide treatment at Gol Gol in 2021.

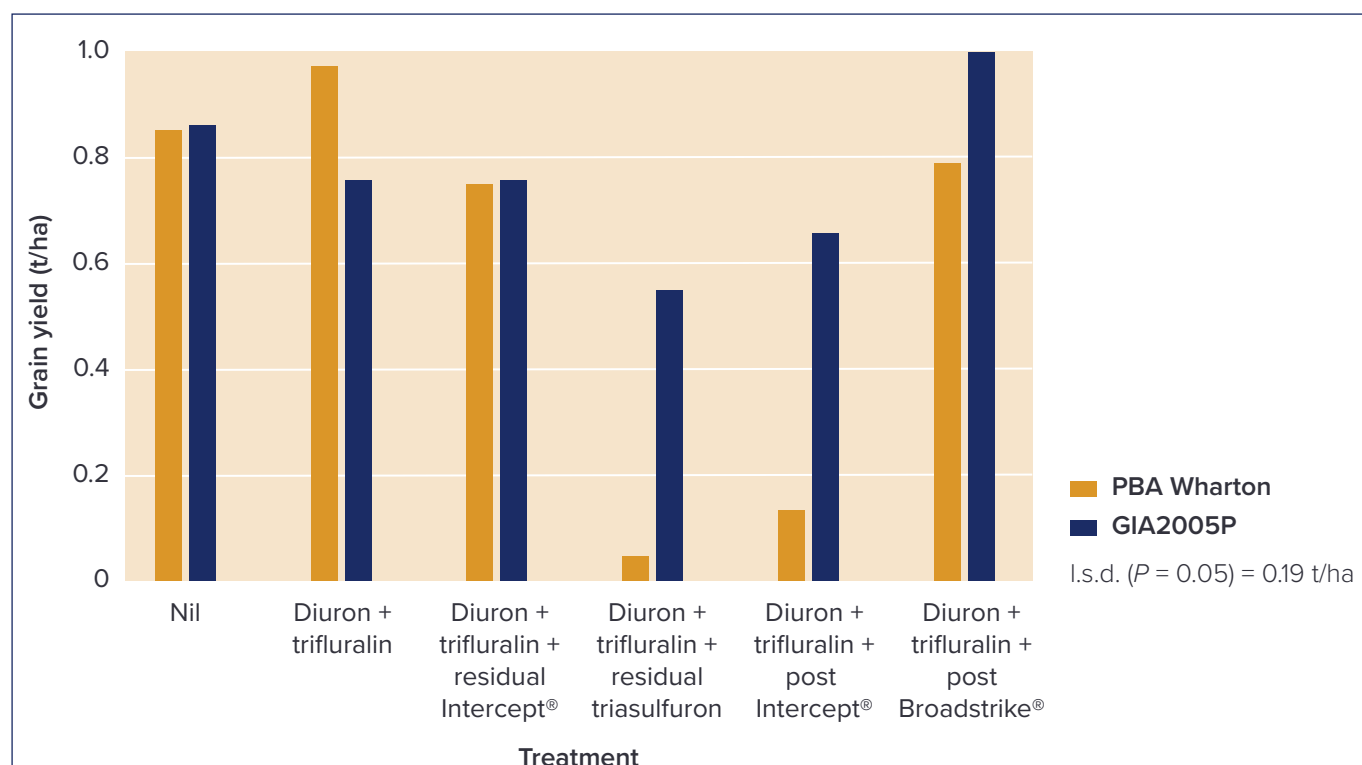


Figure 36: Grain yield of conventional (PBA Wharton[®]) and Group 2 imidazolinone tolerant (GIA2005P) field pea varieties in response to herbicide treatment at Gol Gol in 2021.

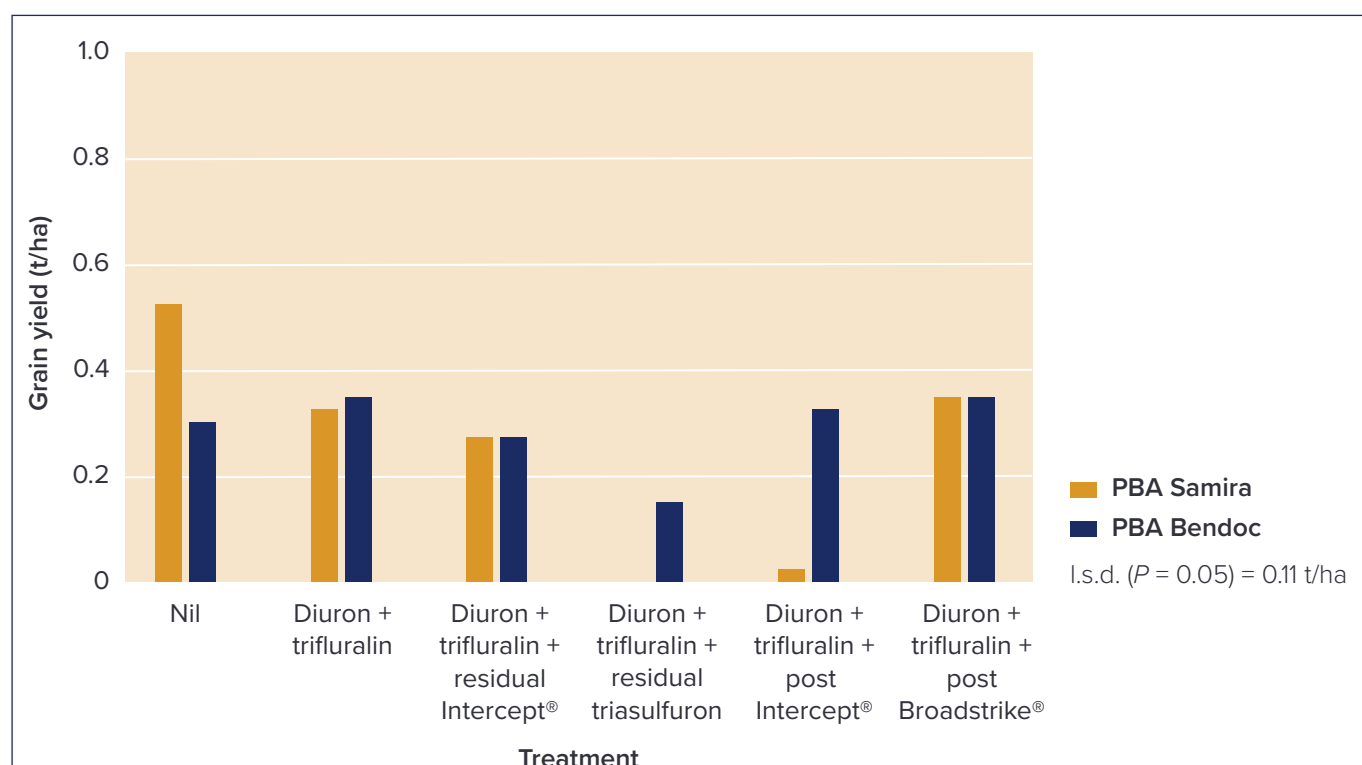


Figure 37: Grain yield of conventional (PBA Samira) and Group 2 Imidazolinone tolerant (PBA Bendoc) faba bean varieties in response to herbicide treatment at Gol Gol in 2021.

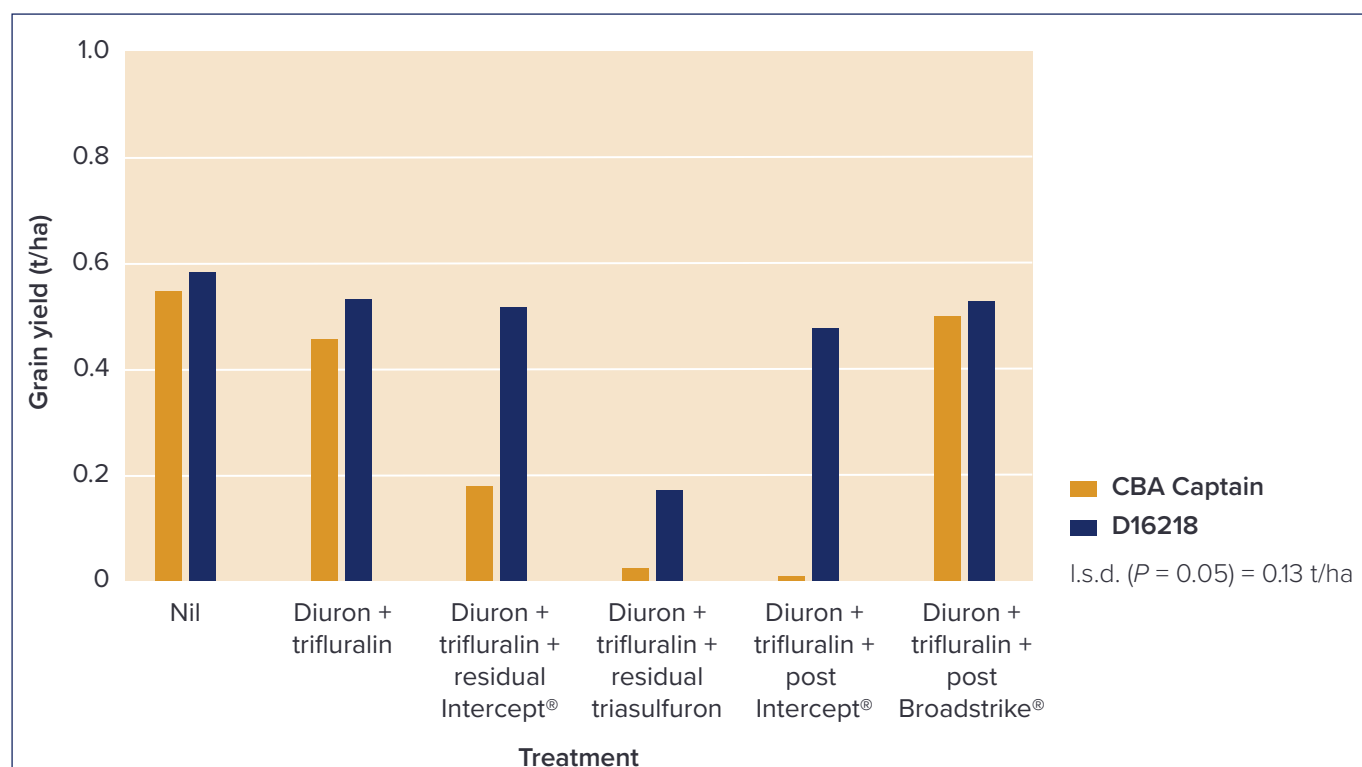


Figure 38: Grain yield of conventional (CBA Captain) and Group 2 Imidazolinone tolerant (D16218) chickpea varieties in response to herbicide treatment at Gol Gol in 2021.