A look at the effect of herbicide residues on conventional and imi tolerant lentil production at Hart in 2025 – utilising the 2024 herbicide tolerance demo.

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Location – Hart Field Site

Key Messages

- Rainfall in 2024 at the Hart field site was low, however there appeared to be limited impact of most herbicides on lentil performance in 2025 in an unreplicated demonstration.
- Clopyralid herbicide applied in 2024 showed severe reduction in plant establishment, vigour and caused significant herbicide symptoms.
- PBA Jumbo2 showed a reduction in biomass compared to GIA Thunder with the Intercept residue, however this was not the case for the Spinnaker and Sentry treatments which is unusual.

Why do the trial?

Lentil is becoming a more common crop in the Mid North and it is sensitive to many herbicides. The Hart Herbicide Tolerance demonstration has been going for more than 40 years and it provided an opportunity to look at lentil production under each of the treatments in a low rainfall season.

How was it done?

The herbicides were applied to the Herbicide Tolerance demo in 2024 according to the dates listed below. The trial was sown across the direction of herbicide treatments with a range of crop types as a demonstration. The trial was later desiccated and left over summer as fallow. On 8th May 2025 the trial was sown with PBA Jumbo 2 and GIA Thunder lentil, three rows of each out of a six row plot seeder on 250mm spacing with knife points and press-wheels.

The demonstration was assessed for herbicide symptoms, crop vigour as GreenSeeker NDVI on the individual varieties and bulk grain yield for each treatment as the varieties were not able to be separated at harvest.

Data has been presented as PBA Jumbo2 NDVI as a percentage of GIA Thunder to assess the differences between the conventional lentil and the imi tolerant lentil.

As this is an unreplicated demonstration no statistical analysis has been performed.

2024 herbicide application dates:	**IBS**	July 3	
	PSPE	July 3	
	3-4 node	August 14	
	5-6 node	August 22	
	Post emergent spike	August 22	
	12th May 2025	**Fertiliser:**	Granulock Zn 56 kg/ha
2025 Sowing date:			
Variety:	Thunder lentil @ 45 kg/ha PBA Jumbo2 @ 55 kg/ha	**2025 Herbicides:**	2025 Herbicides Reflex 700 ml/ha Ultro 1.5 kg/ha Brodal 120 mL/ha
Row spacing:	250 mm		

Results and Discussion

Rainfall at Hart in the 2024 season was low with a total of only 240mm for the year and only 175mm for the period after the first application in 2024 to resowing with lentil in 2025.

As this was an unreplicated demonstration and results should be treated with caution.

Herbicide scores (data not presented) were conducted 10th July and again 22nd September. On both occasions the only treatment that showed visible treatment affects was the Clopyralid600 150mL/ha. The lentils in this treatment were visually low in population and had twisted and distorted shoots consistent with Group 4 herbicide damage. The herbicide effects were severe and should be a reminder of why herbicide plant back requirements should be obeyed.

The other part of the assessment involved comparing the conventional PBA Jumbo2 and imidazoline tolerant GIA Thunder. GIA Thunder lentil is more tolerant to Group 2 imidazoline herbicides as well has having improved tolerance to Group 2 sulfonylurea herbicide residues compared to conventional lentils.

The Intercept treatment produced the greatest relative NDVI reduction in the 2025 lentil crops, indicating a greater sensitivity to imazamox and/or imazapyr (Figure 1). However, the other imidazoline herbicides Spinnaker (imazethapyr) and Sentry (imazapyr and imazapic) did not show the same level of sensivity. This is supprising as imazapic and imazapyr are more frequently associated with herbicide residue problems for non imi tolerant crops.

The other Group 2 herbicides including Ally (metsulfuron-methyl), Paradigm and Saracen (flurasulam) and Rexade (pyroxsulam). There did not appear to be any more changes in relative performance between the two lentil varieties for these herbicides.

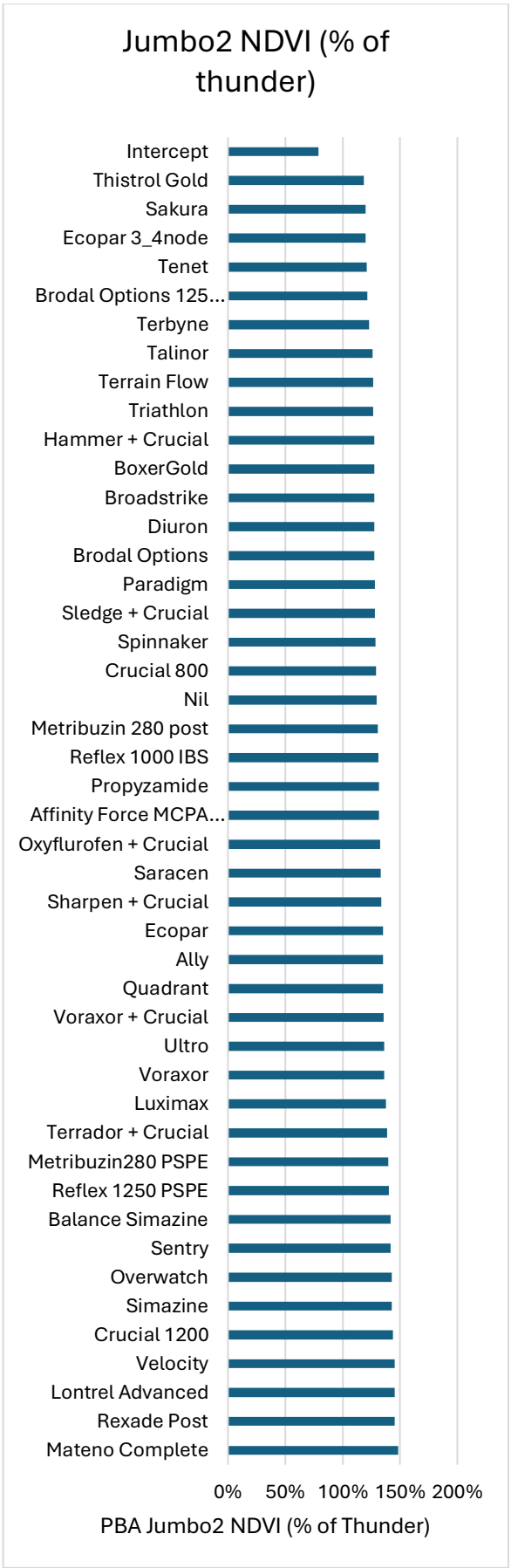


Figure 1. NDVI of lentil expressed as PBA Jumbo2 NDVI as a percentage of NDVI of Thunder.

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