

Lentil Herbicide Tolerance

Aim:

To evaluate lentil tolerance to a range of herbicide treatments in a sandy loam soil environment.

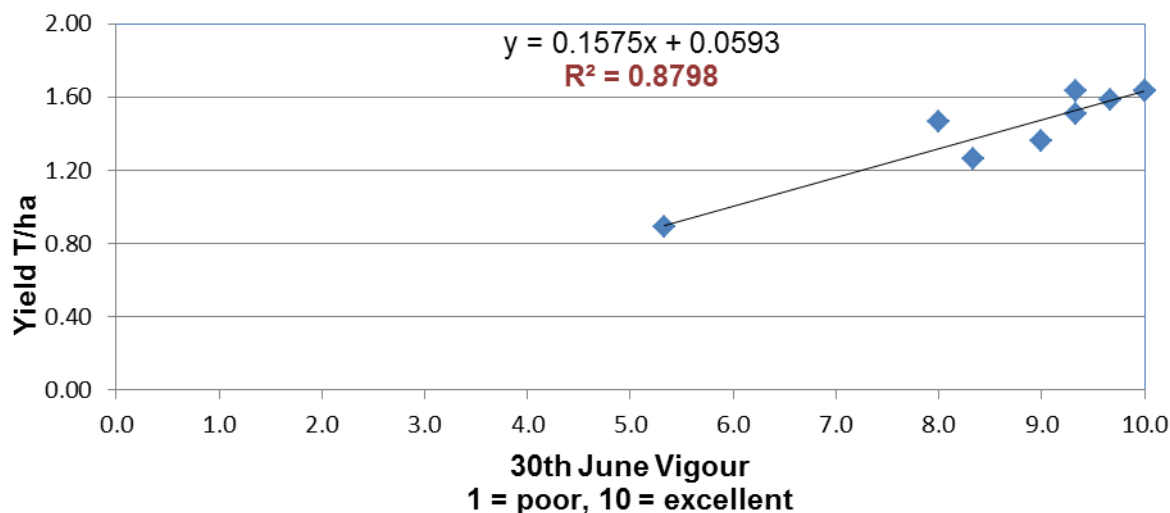
Background:

With lentils being the break crop of choice for many farmers on Yorke Peninsula, reliance of herbicides for broadleaf weed control is paramount. Lighter sandy loam soils of the Northern YP are often result in reduced crop tolerance to commonly used herbicides. This trial aims to observe crop effect

Table 1. Summary of assessments.

Treatment	IBS Treatment	PSPE Treatment	Post-em Treatment	Vigour (1-10) 30th June	Average Yield (T/Ha)	Average Yield (% of UTC)
1	UTC			10.0 a	1.64 a	100
2	Metribuzin 120g	Metribuzin 60g		9.7 ab	1.59 ab	97
3	Metribuzin 120g			9.3 abc	1.51 abc	92
4	Metribuzin 120g		Brodal 180mL	8.3 bc	1.26 c	77
5	UTC			10.0 a	1.64 a	100
6	Terbyne 1kg			8.0 c	1.46 abc	90
7	Terbyne 1kg	Terbyne 0.7kg		5.3 d	0.89 d	54
8			Brodal 240mL	9.0 abc	1.36 bc	83
9	EXP 1L			9.3 abc	1.64 a	100
Co-efficient Of Variation				10%	10%	
LSD 5%				1.6	0.25	

Graph 1. Early Season Vigour vs Yield



Discussion:

This trial was sown into moist soil. There were a couple of issues that led to less than desired establishment of the trial. These were low level mice damage and issues with residual stubble causing some poor germination in parts. To address the lumpy nature of the plots post sowing, a light finger tyne harrow was dragged over the trial which would have caused some herbicide to move back into the furrow, the trial was then rolled with a steel roller.

Rainfall through winter was average followed by a prolonged dry spell from August 22nd until late September. October and early November had relatively cool ripening conditions however, the establishment issues meant that yields were not quite as good as they could have been with the season finish. Weed levels were quite low in the trial, thus no observations were taken. There was little effect on crop yield from those that were present.



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A number of treatments caused herbicide damage to the lentils which is apparent when observing the vigour scores taken on the 30th June. All pre-sow Metribuzin treatments caused some slight effect. This is likely due to the damp soil conditions; 19mm fell in the 3 days prior to planting with another 12mm falling 10 days post planting. It is likely that there was some Metribuzin that moved into the seeding furrow, particularly following the harrowing. Terbyne was certainly more damaging to lentils compared to Metribuzin. Split rate application of Terbyne had a huge negative impact on crop yield. Graph 1 shows that early vigour is important to resulting crop yields with lentils

Foliar application of Brodal did cause some discolouration of the lentils and the high rate of 240ml/ha saw a significant yield penalty. The use of the experimental product showed good levels of crop safety.

Take Home Messages:

- Early crop vigour is closely related to resulting yield with lentils.
- Soil type and moisture conditions can affect the way herbicides impact emerging crops.
- When applying chemicals like Metribuzin & Terbyne up-front (IBS), never level the surface with harrows or similar. This results in severe crop damage as the chemical is dragged back into close proximity to the seed.
- Different lentil varieties have different herbicide tolerance levels, check planting guides.
- Understand your soil limitations in regards to rates and types of herbicides applicable.
- Brodal will sometimes, but not always, have an impact on crop yield if conditions aren't suitable for the crop to recover (i.e. dry Spring).



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