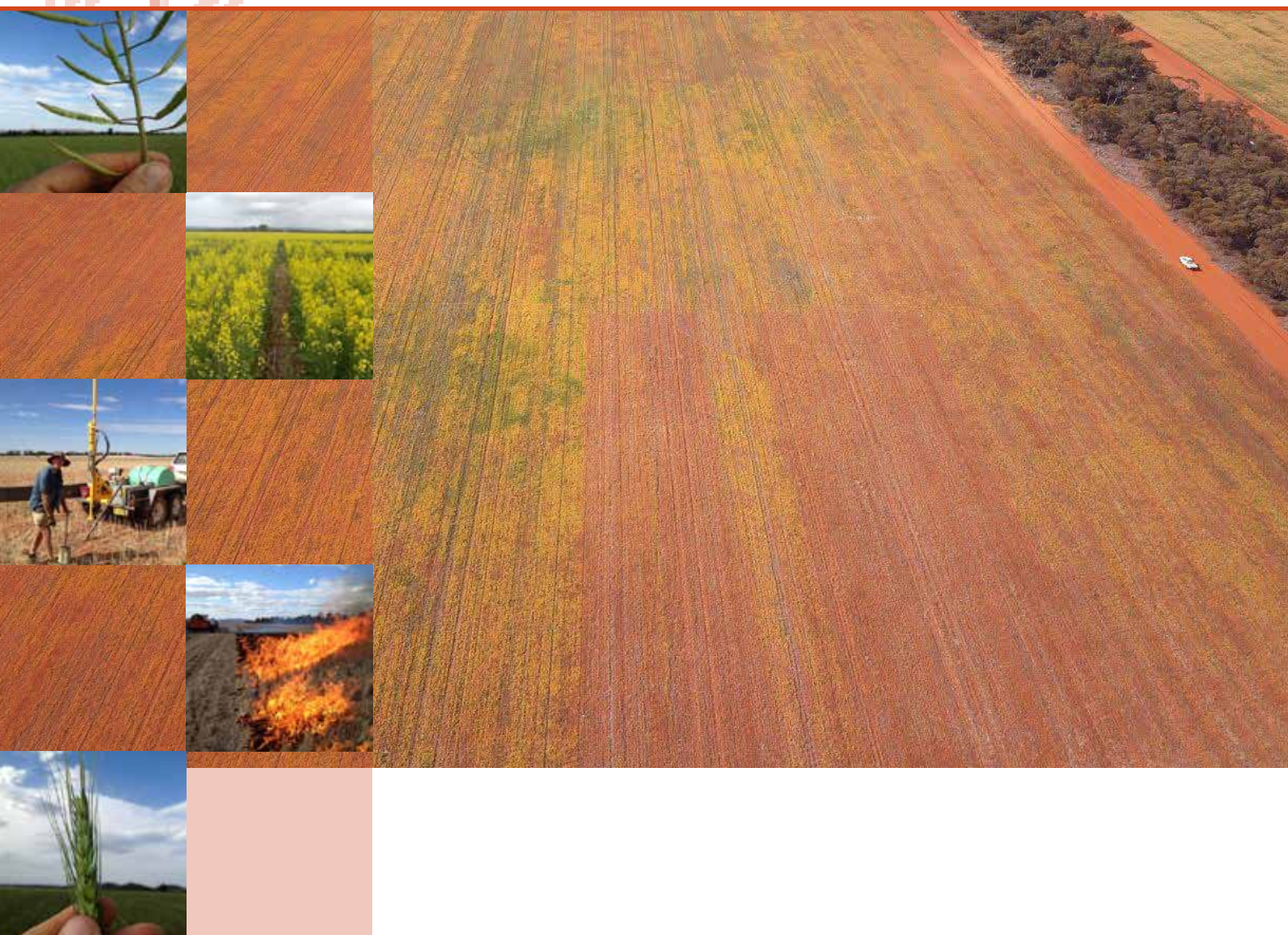




# AgGrow

AGRONOMY + RESEARCH



## LENTIL DESICCATION DEMO

Griffith region 2017

## KEY POINTS

- Lentils are an emerging crop in western Riverina and in 2017 contributed to over 12,500ha within our client base.
- Options of products to desiccate with are limited due to registration and minimum crop residue limits.
- Effective desiccation can significantly reduce pre- harvest and harvest losses through more timely harvest.
- \* The added benefit of minimising weed seed set can not be ignored.
- \* In this demo, mixing gramoxone and reglone together was a standout treatment.

## BACKGROUND

Lentils are an emerging crop in the western region of the western Riverina. Following successful trials of lentils in the region there has been a major uptake by growers in the last two years. The high value legumes give growers another pulse option in crop rotation, which has been predominantly held by field peas and lupins.

Lentils have proven to be quite hard to desiccate, especially when the plants are still drawing on available moisture. Timely harvest is very important in lentils as they are very prone to pre- harvest shattering. Once the pods are ripe the stems of the plants can remain green for some time, creating harvest difficulties. Effective desiccation can reduce pre- harvest losses and downtime during harvest due to green crop.

## TRIAL DETAILS

The trial was conducted on Andy Ryan's farm located on Boorga road, approximately 30km north of Griffith towards Rankins Springs.

The aim of the trial was to evaluate various mixes of products registered for the desiccation of lentils, to provide information on the speed of dry down and level of weed control of the various herbicide mixes.

The paddock selected was PBA Ace lentils, sown the first week of May. The site had some annual rye grass escapes, along with large milk thistle, rough poppy and prickly lettuce. The site of the trial was on the greener side of being ready to desiccate, which ensured that the effectiveness of the herbicide treatments was really tested.

Treatments were applied to the trial on the 27th of October 2017 at approximately 4pm. The herbicide treatments were boom sprayed, using a 6m wide boom mounted onto an ATV. They were applied at 8 km/hr,

with a water volume of 80 L/ha.

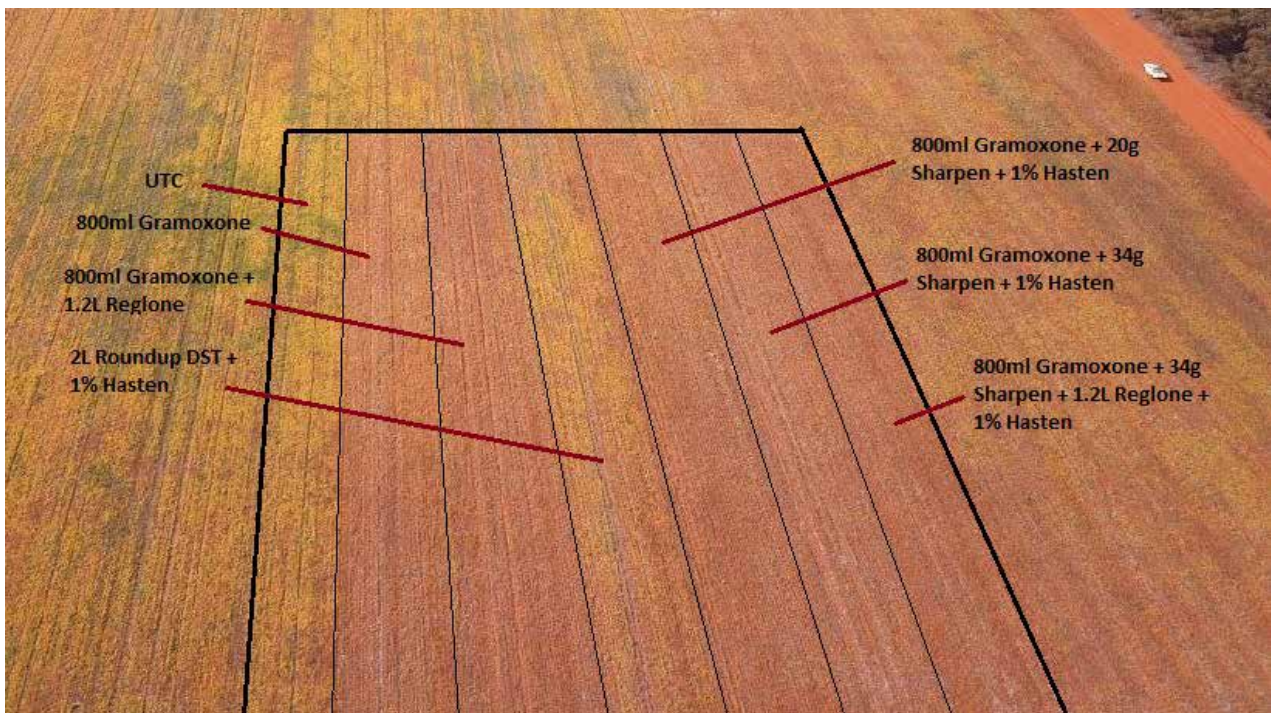
The environmental conditions at the time of application were temperature 28°C, cloud cover of 0%, relative humidity 27% and wind NNW at 15km/hr.

Observations were taken at 5DAA and 10DAA and included a 0-10 rating for harvest readiness (10 = ready) and observations on level of weed control.

Treatments:

- 1) Untreated
- 2) 800ml gramoxone
- 3) 800ml gramoxone + 1.2L reglone
- 4) 2L DST + 1% hasten
- 5) 800ml gramoxone + 20g sharpen + 1% hasten
- 6) 800ml gramoxone + 34g sharpen + 1% hasten
- 7) 800ml gramoxone + 1.2l reglone + 34g sharpen + 1% hasten

Figure 1: Trial layout, photo taken 5 days after application (daa).



## RESULTS AND DISCUSSION

The growing season in the Griffith region was a dry one, with only 160mm of rain falling in the growing season. 60mm of this fell in October, which allowed later crops to fill grain well. This also meant that pulse crops that were still green at this time, held on quite well with the available moisture.

The treatments were scored on a rating of 0-10 for readiness to harvest on 5DAA and 10DAA. The standard practice for pulse desiccation in the region is 800ml of gramoxone 250. Adding 1.2L of reglone to this mix aided in crop dry down and increased the score from 6 to 9 at the 5daa timing and from 9 to 10 at 10daa. The difference was in the amount of green left still in the stem of the plant. 2L of raze was the slowest to dry down, with a score of only 3 and 7 at 5 and 10daa respectively with areas of green leaf and still green stems. This shows the importance of coming back to double knock for even desiccation if glyphosate is necessary for weed control.

The gramoxone and sharpen treatments provided a similar but slightly slower dry down to gramoxone and reglone. Increasing sharpen rates from 20g to 34g/ha proved ineffective in hastening crop dry down. Treatment 7 provided the fastest dry down, which was ripe for harvest 5Daa, however 7 day harvest WHP would hold this back. This treatment was the most expensive mix and would usually be uneconomical to use in a marginal dryland farming situation.

At 10daa, the untreated plot was just beginning to senesce leaf, however pods were all dry and some shattering had started. This shows the importance of timely and effective desiccation. Treatment 2 had some level of weed control with burning of prickly lettuce, flea bane and milk thistle. The annual rye grass had 40% viable panicles, due to re growth. Treatment

3 had much better control of rye grass, however some plants had re tillered from the base. Milk thistle and prickly lettuce had also reshot from the base of the stem.

In treatment 4, there was some leaf senescence occurring in all weeds. The only weed that looked like it would survive the glyphosate was flea bane, which had a yellow growing tip, but the rest of the plant was still very green. Adding sharpen to the gramoxone resulted in a similar level of weed control on the broad leaf weeds as adding reglone. There was still regrowth of all key weeds from the base at both rates of sharpen. Rye grass control was not increased by adding sharpen.

Table 1: Treatment costs and results. Note desiccation score at 5 and 10 days after application (daa), where 0 = not ripe, 10 = ready to harvest.

Treatment	Brew	Cost \$/ha	Can keep seed for sowing	Desiccation score	
				5DAA	10DAA
1	Untreated	-	Yes	0	1
2	800ml Gramoxone	\$3.20	Yes	6	9
3	800ml Gramoxone + 1.2L Reglone	\$20.00	Yes	9	10
4	2L Roundup DST + 1% Hasten	\$13.64	No	3	7
5	800ml Gramoxone + 20g Sharpen + 1% Hasten	\$17.42	No	8	10
6	800ml Gramoxone + 34g Sharpen + 1% Hasten	\$24.41	No	8	10
7	800ml Gramoxone + 34g Sharpen + 1.2L Reglone + 1% Hasten	\$41.21	No	10	10

## CONCLUSION

Desiccation of lentils is an extremely important process to ensure timely harvest. By maximising the effectiveness of the desiccation we can reduce pre harvest losses, by having the header in the paddock in a timely manner. The addition of adding 1.2L/ha reglone and 800ml/ha of gramoxone to the tank mix ensured a much faster dry down than gramoxone alone. This mix should be considered if lentils are able to keep growing due to soft finish, and aren't naturally senescing.

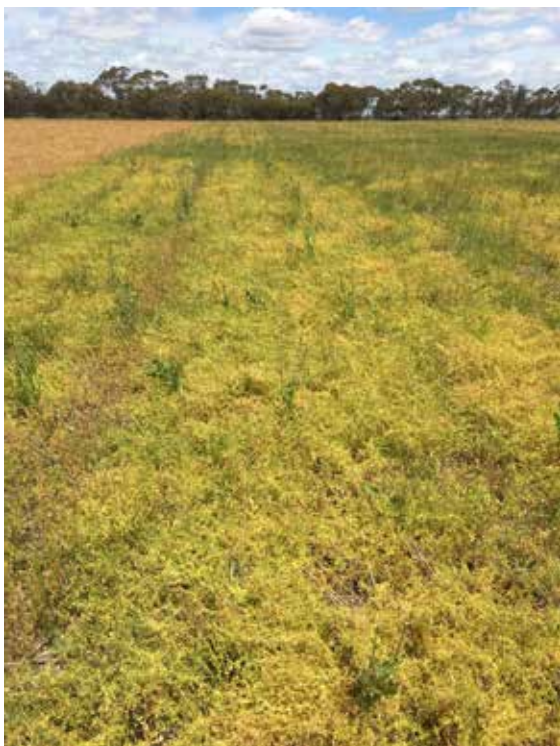
Adding 20g/ha of sharpen with 800ml/ha of gramoxone also had a benefit of drying down the lentils. This brew should definitely be considered in the presence of radish. Increasing sharpen rates from 20g to 34g/ha proved no benefit in this trial.

2L/ha of roundup had a slow dry down and to ensure timely harvest a follow up with 800ml of gramoxone and possibly reglone should be considered.

In all cases, the desiccation treatment did not provide adequate control of fleabane, and a separate pass of Roundup and 2,4-D was required after harvest in this paddock.

Ryegrass panicles however were affected, and it is estimated atleast 80-90% of ryegrass seed set was reduced as a result of most treatments, with the exception of Roundup DST.

TRT 1 - UNTREATED 5DAA



TRT 2 - 800 GRAMOXONE 5DAA



TRT 3 - 800 GRAMOXONE +  
1.2 REGLONE 5DAA



TRT 4 - 2L RUP DST 5DAA



TRT 5 - 800 GRAMOXONE +  
20G SHARPEN 5DAA



TRT 6 - 800 GRAMOXONE +  
34G SHARPEN 5DAA



TRT 7 - 800 GRAMOXONE +  
1.2 REGLONE + 34G SHARPEN  
5DAA

