

Demonstrating the Benefit of Mandelup Lupin for Croptopping

Aim: To compare the effect of croptopping on Mandelup with other currently grown lupin varieties.

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Location: Liebe Main Trial Site

Background: The new lupin variety Mandelup is as early maturing as Belara and, from past experience, should give opportunities for effective croptopping. Croptopping can be defined as the non-selective control of weed seed set in a crop following the substantial completion of grain filling of that crop. This process typically involves the use of a non-selective herbicide such as gramoxone or glyphosate. The general experience is that gramoxone does less damage to the lupins.

Croptopping ryegrass in lupins reduces the number of ryegrass seeds that may have grown through a selective herbicide application in the lupin year. This reduces the amount of herbicide resistant ryegrass seed returning to the soil and potentially improves the viability of the lupin-wheat rotation. Croptopping effectively reduces the pressure placed on selective herbicides in future phases of the rotation and can prolong the useful life of these selective herbicides for ryegrass control in continuous cropping rotations.

Early maturing varieties should provide a greater croptopping window while minimising damage to the lupin crop. The earlier the timing of the gramoxone spray the better the chance that the target grass will be at the optimum time for seed kill.

The aim of the trial was to demonstrate that the new variety Mandelup (tested as WALAN2141) would suffer less from damage as a result of croptopping than currently grown varieties when sprayed with Gramoxone herbicide.

Trial Details:

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| Plot size and replication | Each plot 3.1m x 10m |
| Soil type | Sandy loam |
| Sowing date | 13 th May 2004 |
| Conditions at sowing | Moist, 18mm in the previous 2 days. |
| Machinery | Cone seeder knife points press wheels (250mm spacing) |
| Seeding rate | Range of 77 -100 kg/ha for the different varieties to achieve 52 plants/m ² |
| Fertiliser | 85kg/ha Big Phos and Mn deep banded |
| Herbicides and Insecticides | 1.1kg Simagranz, 0.8 L/ha Sprayseed 250, 100 mL/ha Talstar PSPE 24 th June 150mL Brodal. |
| Paddock History | 2003 = wheat, 2002 = wheat, 2001= lupins |

The trial had a low, uneven population of ryegrass and wildoats.

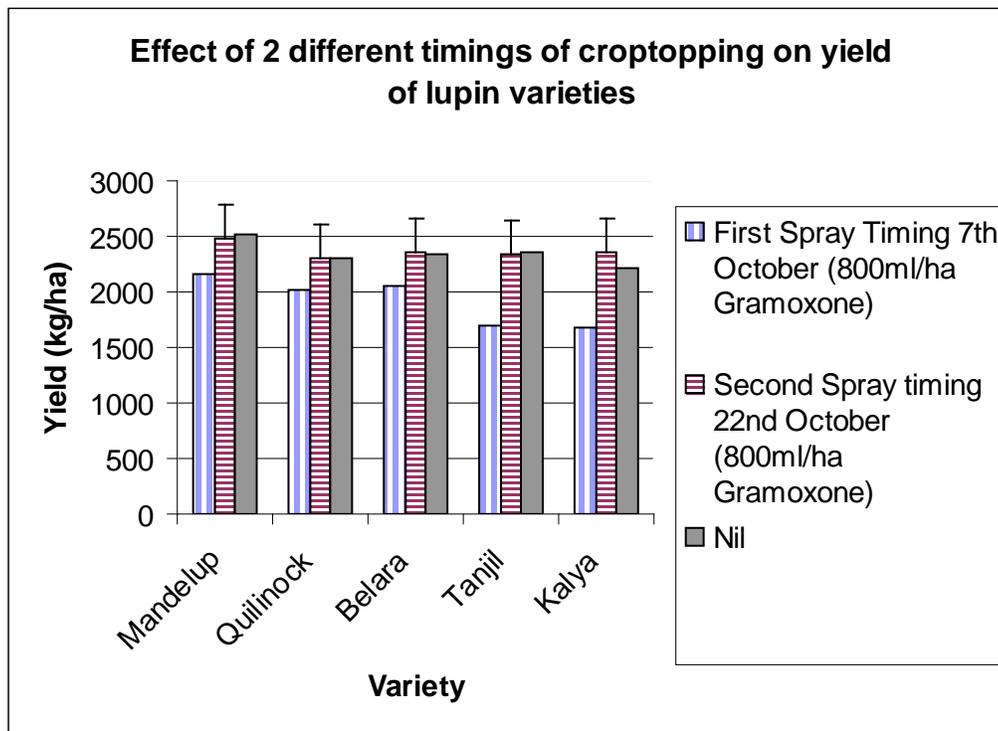
First spray timing of 800mL gramoxone 7th October 2004. No leaf drop, pods turning from green to yellow. Seeds still sappy.

Second spray timing of 800mL gramoxone 22nd October 2004 70% leaf drop. Most pods yellow, seeds fully formed in all varieties.

The times of spraying were chosen to ensure that there is sufficient differentiation in the tolerances of the lupin varieties to the gramoxone spray.

Results:

The first spray application had the greatest effect on yield, the second timing did not significantly affect yield of any variety. At the first timing, the yield of Mandelup was depressed by the gramoxone application but not as much as for Tanjil and Kalya. There was no significant effect of the first spray on the yield of Quilinoock or Tanjil.



Summary:

- The early maturity of Quilinoock and Belara allowed these varieties to avoid significant crop loss from the first gramoxone croptopping treatment.
- Mandelup was affected by the first gramoxone treatment but not as much as Tanjil and Kalya.
- The competitive yield performance of Mandelup was also demonstrated.

Technically reviewed by: Bob French