Lentil rolling

The aim of this trial was to investigate the best bet time for rolling lentils. This is to ensure that the paddock surface is in a state suitable for harvest whilst minimising the impact of the rolling operation on the crop.

Summary

Lentil rolling is a relatively common practice in Wimmera/Mallee districts. Although several management techniques are advised when rolling lentils, after 2 years (2001 and 2003) of BCG trial work there seems to be no adverse affect on lentil growth or no yield reduction when rolling lentils at any stage of growth.

Background

Lentil harvest can be extremely difficult as lentils generally display short crop height and are prone to lodging, therefore paddock preparation is important. The practice of rolling, usually with a rubber-tyred roller, creates a smoother paddock surface for increased ease of harvest. Rolling can take place either before or after crop emergence. The Canadians commonly roll their crops after emergence and under their conditions no yield penalty has resulted. This trial has been repeated from the 2001 season to see if results hold. In 2001 highest yields were achieved just prior to the coleoptile emerging from the soil. Rolling at the 2 leaf stage and immediately after sowing in 2001 caused the greatest yield decline.

Methods

This trial was conducted using a fully replicated (x4) randomised block design at the Murtoa site.

Digger lentils were sown at 50kg/ha on May 30with 60kg/ha EzyZinc. Triflur 480® was applied prior to sowing at 0.8L/ha and Broadstrike® at 20g/ha and Brodal® at 100ml/ha were applied on August 19. Verdict® was applied at 75ml/ha and Uptake at 0.5% on September 4 and chlorothalonil at 500ml/ha on October 28.

Lentils were rolled according to Table 1, with crop emergence monitored and all plots harvested to establish yield for each treatment.

Results

The time of rolling had no significant impact on the yield of lentils

Table 1. Time of rolling and the effect on lentils yield.

Time of rolling	Yield (t/ha)
Control	1.3
PSPE	1.5
3 node	1.3
6 node	1.6
9 node	1.5
LSD (5%)	NS

PSPE = Post sowing pre emergent

Interpretation

There was no difference in yield between the five lentil rolling treatments. The lentil crop was sown on May 30 which was a reasonably dry sowing. The highest yield was 1.6t/ha, rolled at the 6 node stage. This is a similar finding to the lentil rolling demonstration plot conducted by the BCG in 2001. In this trial the results of rolling late (at 8 leaf stage) were quite promising with no yield reduction. However results in this trial also suggest that rolling just after sowing also produced good results (1.47t/ha). To date there is no consistent finding of when is the best time for rolling lentils. There seems to be no yield reduction or adverse affect on the crop whenever you roll. However some important management techniques should be followed when rolling, these are listed below.

Commercial Practice

Rolling lentils is a relatively common practice. It is important to consider soil surface conditions when making a decision to roll a lentil paddock. If the soil is too dry, rolling will make the soil surface very susceptible to wind erosion and possibly crop damage from blasting. If rolled when too wet, soil will build up on the roller and create a cloddy, rough surface rather than a smooth paddock.

Lentil Rolling before Emergence

Rolling lentil paddocks at seeding or just after appears safe; however there are a number of points to consider.

- Rolling should take place within a couple of days post sowing. There could be stem damage in crops rolled once the plant has started growing, particularly in lighter (fluffy) soils.
- It is preferable to roll before spraying any post sow pre-emergent (PSPE) chemicals.
- If the soil is prone to blowing or crusting post emergence rolling will be a safer option.

Lentil Rolling Post Emergence

In Australia, post-emergence rolling to level paddocks has been undertaken by a number of lentil growers in the past couple of years. From BCG results there seems to be no obvious adverse effects in crops having been rolled post-emergence. The Canadians commonly roll their lentil crops post-emergence.

A guide in understanding lentil plant growth stages is available at the BCG office.

.