Pulse Point 10

Windrowing lupins

Windrowing lupins is a useful harvest management tool for both narrow-leafed and albus lupins. Windrowing enables growers to:

- avoid pod shatter and drop in narrow-leafed lupin crops resulting in increased harvest yield;
- avoid problems where the header reel gets in the way of tall crops during harvest;
- avoid green material such as late weeds which can contaminate the grain and cause problems during storage due to high moisture;
- manage very slow and unevenly ripening crops in mild seasons; and
- increase header efficiency.

Windrowing should be used as an optional management tool and not an essential part of growing lupins.

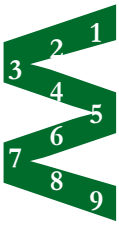
Windrowing for weed management

Windrowing can be used to help reduce seed set of weeds such as annual ryegrass, saffron thistle and wild radish. Growers must be aware that some weed seed may be mature before the lupin crop is mature. Crops windrowed to maximise weed control generally incur a yield penalty. Alternatively, an additional form of control following harvest can be used to effectively manage weeds. Options include use of a knockdown herbicide post harvest, and the removal of straw spreaders from headers followed by burning header tracks with a hot burn. When windrowing a very weedy crop, windrowing should be delayed as long as possible to reduce the risk of regrowth causing problems in the windrows.

Windrowing a narrow-leafed lupin crop at Milbrulong.

Paddock sampling

To properly judge the crop maturity sample from a number of sites within the paddock. The best way is to use the 'W' method outlined in the following diagram collecting samples at each numbered site.



Walk a 'W' path through the crop, checking 10 plants half way along each length and at each point, giving 9 sampling points.

When to windrow

Correct windrow timing is essential. If lupins are windrowed too early, yield will be sacrificed and quality will be reduced due to a high number of shrivelled seeds. Leaving it too late will result in a high risk of pod shattering, and pods being knocked off during the windrowing operation.

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Windrowing should take place when the top pods, those last to mature, are past physiological maturity and are in the dry-down phase. The lowest, most mature pods, those on the primary or main spike will be close to ripe and have a seed moisture content of approximately 40%. At this stage the average seed moisture for the whole plant will be about 60%. The cotyledons (the part of the seed that can be seen when the seed coat is removed) will be turning from bright, fleshy green to yellow (see Figures 1 and 2).

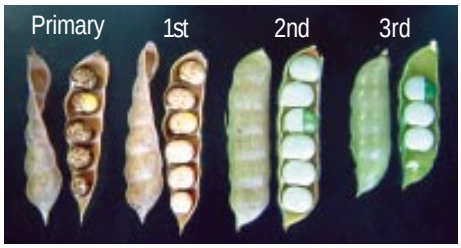

Figure 1 Pod wall, seed coat and cotyledon colour of narrow-leafed lupins at the correct stage of maturity to windrow

Determining maturity

Pods should be removed from plants branch by branch, keeping pods from each branch separate. Check the least mature top pods first.

Remove seeds from pods, and peel the seed coat to reveal the cotyledons. On the primary or main spike which flowers first, they should be light green to yellow, and from the first order lateral branches they should be light green. Cotyledons from second and third order lateral branches should be dark green, but past the bright watery green stage (see Figure 2, right hand seed).

The window for windrowing lupins is quite large compared to canola, and is of the order of 7 to 14 days depending on seasonal conditions and the rate of dry down.

Harvesting windrowed lupins

Windrowed lupins mature in a similar time as a standing crop and are ready to harvest 10 to 30 days after windrowing. They dry out following

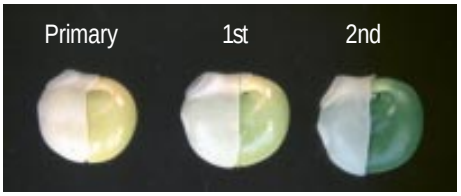

Figure 2 Seed coat and cotyledon colour of albus lupins at the earliest stage at which they should be windrowed.

rain as long as the windrows are not too big. If harvest is very wet there is little difference in the likelihood of seed sprouting between windrowed and standing lupins.

Windrows are best harvested with a pickup front which increases harvest speed and reduces losses (see Figure 3).

Notes for albus lupin crops

When windrowing albus lupins it is important not to start too early as immature seeds will become shrivelled when dry. These reduce quality and can cause problems meeting delivery standards. Windrowing can be delayed as long as pods are not going to be lost during the windrow operation.

Notes for narrow-leafed lupin crops

Windrowing should not be delayed in narrow-leafed lupins as they have a tendency to drop pods, especially as the cutter bar of a header or windrower hits them. If dry conditions prevail, windrow at night or in the early morning when dew will help to minimise shattering.

Figure 3 Harvesting narrow-leafed lupins using a pickup front

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Pulse Points are available on the NSW Agriculture web site: www.agric.nsw.gov.au

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