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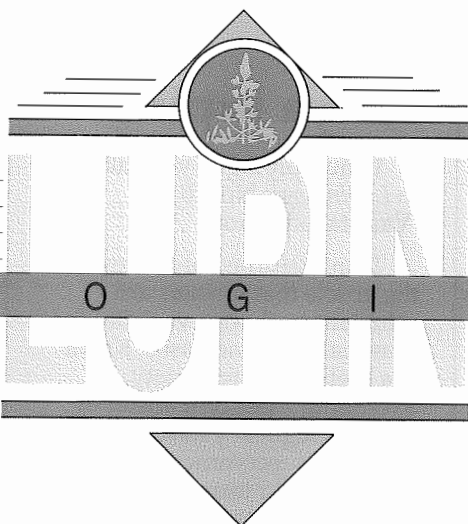
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Understanding Plant Breeders Rights

Peter Portmann, Principal Plant Breeder

To understand Plant Breeders Rights (PBR) it is important to understand the difference between seed and grain. Seed is used to sow the crop. Grain is harvested from the sown crop and delivered to CBH for export or fed to livestock.

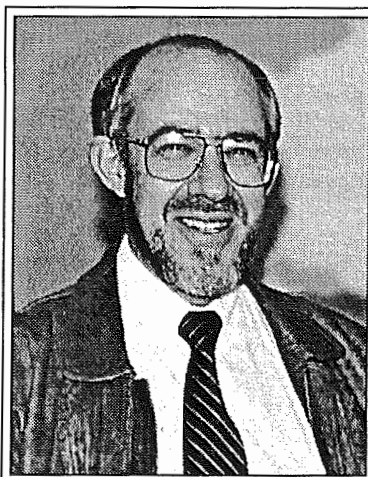
PBR currently relates to seed but may in the future also cover grain. Unless you are the holder of PBR on a variety or you are licensed by the holder of the PBR you may not:

1. Produce or reproduce seed.
2. Condition seed for sowing a seed crop.
3. Offer seed for sale.
4. Sell seed.
5. Import seed.
6. Export seed.
7. Stock seed for the above purposes.

Once farmers have legitimately purchased seed of a PBR protected variety and grow a crop from that purchased seed, they have the right to retain the seed from that crop and subsequent crops for their future cropping requirements.

Under the new PBR Act (1994) grain of a PBR variety produced by a farmer and delivered off farm may, however, be subject to a delivery royalty payable back to the breeding organisation. This potentially has far reaching

ramifications for the future of cropping with PBR varieties.



Peter Portmann

Crop breeding has in the past, and will continue in the future to make a significant contribution to the profitability of the grains industry by developing higher yielding varieties with quality suited for particular end uses. In 1996 the Western Australian breeding programs released four new wheats, two milling oats, one feed barley and one lupin. Other better varieties are in the pipeline.

New technologies such as Marker Assisted Selection, Haploid crossing and genetic engineering will also assist breeding programs to make continual advances.

The new PBR Act (1994) provides a mechanism for generating funds to better resource breeding programs. It is important that farmers participate in discussions of PBR and the implications on the future of breeding programs.

Lupin prices

The Grain Pool indicator price for lupins has been set at \$208.50/t, a \$1.50/t reduction on the previous estimate.

The minor fluctuation reflects tough competition into European protein markets. There is increasing competition from cheaper alternative protein sources such as corn gluten, palm expeller, copra expellers, rapemeal and citrus pellets.

Field peas have also felt the pressure with the Canadian sales to western Europe already showing signs of faltering.

Most of these protein grains are used in the European stock feed industry where demand has weakened considerably due to mad cow disease.

While the outlook for lupins currently appears bearish growers are still being offered a good price for lupins. Prices have remained stable on the back of strong Asian demand.

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Continued overleaf...

Immature seeds

Growers in the north-eastern and eastern areas have experienced some difficulty in delivering lupins which are above the limit for green immature seeds.

Green seeds result from the water supply being cut off to the seeds before they are physiologically mature. This water deficit may be due to either there being no water available in the soil as the crop is maturing or to disease such as the phomopsis fungus killing the water transport system within the plant. This year it is the latter which is causing most of the problems.

Green seed is a significant problem in markets such as Japan and Korea, where the lupins are either steamed and flaked, or dehulled. The green appearance of the kernels, exposed by processing, is considered by the end users to be a quality fault.

Allocation of stocks to these markets will be difficult as the green immature lupins can only be accepted in combination with normal lupins, reducing the Grain Pool's options.

In order to speed up the testing procedure for green immature lupins, CBH were instructed to reduce the test sample to 5 measures (approximately 600 seeds), with a proportionately reduced limit.

Discoloured lupins are also a problem in some areas, and as this is a far more serious quality defect and segregated receival services were opened at various points.

Discolouration caused by phomopsis, if present in sufficient numbers, can prevent shiploading, as export standards are quite rigid.

Lupin Logic

Back copies available with folder and index.

Kalya lupins

I am replying to your article in *Lupin Logic* No. 76 on 'Varietal adoption'.

I am disturbed at the tone of the article that farmers are reluctant to change varieties for nominal yield increases. Kalya is a high yielding variety, averaging 7 per cent ahead of the next highest yielding variety where it is recommended. This order of yield improvement has not been seen since Gungurru replaced Danja in 1988. The extra yield is worth about \$16/ha at today's prices and State average yields, or an extra \$8000 per year for a grower with 500 ha of lupins.

We read in the article that disease resistance or ease of harvesting are needed to entice a change of variety. Kalya is the most aphid resistant of current lupin varieties, and only marginally different from Gungurru and Merrit with respect to phomopsis resistance (that is, it is very good). It is also slightly taller with slightly greater harvest height than these varieties. Kalya tends to drop some pods after maturity, but despite this has yielded more than Gungurru and Merrit in variety trials over the past five years. Given the marginal differences in most characters, the marketing strategy (as referred to in the article) has focussed on yield and aphid resistance.

After 15 years of investment in two lupin breeding programs on *L. angustifolius*, it is clear that many superior varieties will emerge over the next few years. Agriculture Western Australia does not withhold superior varieties once they are clearly identified. This may mean that a new variety is released every year for the next few years. Kalya is a superior variety that has been released as soon as enough seed was available in 1996. There will not be a perfect lupin variety for the whole State, and growers will have to

consider their choices carefully. But to withhold a new variety because of the potential release of future varieties is not the marketing strategy of this publicly-funded breeding program.

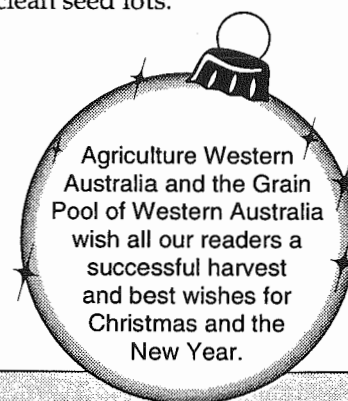
I am sure that the views expressed in *Lupin Logic* on the release of Kalya are held by very few farmers and that the majority have the wisdom to recognise and take advantage of this new release where appropriate. — *Wallace Cowling, Senior Plant Breeder, Agriculture Western Australia*

As you are aware I co-ordinate the registered seed scheme. Registered seed grower response to Kalya has all been positive. Comments such as It looks great, It is taller, Great yielder, and I'm all sold out; do not indicate that there is a problem with this variety. — *Liz Aravidis, Manager, Agwest Field Crops, Agriculture Western Australia*

Seed freight subsidy

The Grain Pool has offered growers a 50 per cent subsidy on freight, up to a maximum of \$15 a tonne, to transport clean seed from other areas of the State to areas that have been affected by the outbreak of anthracnose this season.

Clean seed, free of anthracnose is the only way to prevent this disease from causing economic loss and farmers in disease areas are urged to obtain clean seed lots.



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