

KEY FEATURES

- Luxor[®] is a new albus lupin variety with long term yields greater than Kiev Mutant and Ultra.
- Pleiochaeta root rot resistance in Luxor allows it to be grown where disease pressure could be high – although it is not immune, good rotations and agronomy remain important.
- Luxor[®] has 100% sweet (low-alkaloid) seed, with no bitter contamination present.
- Seed size and protein content are similar to Kiev Mutant and Ultra, enabling continued access to human consumption and livestock markets.

Breeding and Development:

Luxor[®] (tested as WK142) was bred by Dr David Lockett and the Lupin Breeding Team from the NSW Department of Primary Industries at Wagga Wagga. It was produced from a cross between Kiev Mutant and Lucky-1 (a selected line from a French variety Lucky, which originated from a Portuguese population).

Variety Characteristics:

Luxor[®] is a sweet albus lupin that has consistently achieved higher yields than both Kiev Mutant and Ultra. It was selected for its Pleiochaeta root rot resistance. Luxor[®] is a little taller than both Kiev Mutant and Ultra, and flowers four days later than Kiev Mutant after a mid-May sowing. Grain quality is similar to both Kiev Mutant and Ultra (seed colour, size and protein). The seed shape is flat and not too rounded, and is suitable for all existing human consumption and livestock markets.



Agronomic and Disease Features of Albus Lupin Varieties

Variety	Plant height	Flowering time	Lodging	Seed colour	Seed size (g/100)	Brown leaf spot	Pleiochaeta Root Rot	CMV seed transmission	Anthraxnose	Phomopsis Stem & seed	Phomopsis Pods & seed
Luxor[®]	Med-Tall	Early	R	White	35	R	R	Immune	VS	R	MS
Kiev Mutant	Medium	Very early	R	White	35	R	VS	Immune	VS	R	S
Ultra	Short	Very early	R	White	35	R	S	Immune	VS	R	S
Rosetta [®]	Tall	Mid	R	White	35	R	MR	Immune	VS	R	MR

Key: **VS** = very susceptible, **S** = susceptible, **MS** = moderately susceptible, **MR** = moderately resistant, **R** = resistant.

Long-term Relative Grain Yield of Luxor as a percentage % of other varieties

Variety	NSW Long Season 2000-2008	Trial No.	NSW Short Season 2000-2008	Trial No.	SA 2001-2006**	Trial No.	Vic 2001-2006**	Trial No.
Luxor[®]	100	45	100	50	100	9	100	7
Kiev Mutant	89	47	90	52	96	9	98	7
Ultra	90	47	91	52	-	-	-	-
Rosetta [®]	101	47	102	52	104	9	107	7
Luxor [®] yield	2.05 t/ha		1.40 t/ha		2.12 t/ha		1.20 t/ha	

Key: * = BLUP figure; ** = simple average

Grain Quality:

Alkaloid levels of Luxor[®] are low and meet the food standards set for albus for human consumption. Contamination with bitter (high alkaloid seeds) threatens export and domestic markets in albus lupins. Contamination of current commercial varieties is widespread, and can raise the average alkaloid level of the seed lot so that it may exceed the Food Standard (0.02% alkaloid content). Export Standards define a limit of two bitter lupin seeds per 200g (about 0.35% on average). For seed sown in 2009 the threshold for bitterness contamination has been lowered to zero.

The protein level of Luxor[®] is greater than 35%, making it very suitable as a feed or ingredient for ruminants such as cattle, sheep, and horses. Albus can also be suitable for poultry and in pig diets at 10-15% of the ration.

Management Package

(Consult local grower guides for more detailed information)

Areas of adaptation:

Luxor[®] is:

- Recommended for low and medium rainfall areas of NSW, and is also suited to some regions in SA and Victoria.
- Being slightly taller, Luxor[®] should be easier to harvest in low rainfall seasons.
- Suited to high rainfall areas where there is a possible risk of Pleiochaeta root rot.
- Ideally sow Luxor[®] as the only albus variety on the farm.
- **NOT** recommended for Western Australia, as it is very susceptible to anthracnose.

Avoiding bitterness:

Luxor[®] is 100% sweet, so keep it that way. Bitterness (high alkaloid seeds) threatens export and domestic markets.

- Avoid any physical contamination. Prevent outcrossing by keeping a 1 km isolation zone from other albus crops.
- Do not grow bitter Lupini Bean crops in sweet albus areas.
- Test albus seed annually at NSW DPI Wagga Wagga (this is a free test – phone 02 6938 1999 for details).

Seeding:

Sowing times and sowing rates for Luxor[®] are the same as for Kiev Mutant and Ultra:

- Mid April until mid May in low rainfall areas,
- Third week of April until end-May in high-rainfall areas.
- Establish 35 plants/m² for early sowing and 45 plants/m² for later sowings.
- Sowing rates can range from 150 to 200 kg/ha to achieve optimum plant population.

Weed control:

Use similar guidelines and strategies as for other albus lupin varieties. New lupin cultivar screening conducted at Wagga has shown no significant difference between Luxor, Kiev Mutant and Ultra in reaction to herbicides commonly used in albus lupins.

Disease management:

Luxor's[®] resistance to Pleiochaeta root rot ensures a decreased risk of seedling death and yield loss in areas of disease incidence. If Pleiochaeta disease pressure may be high then consider the additional protection of a seed dressing and avoid shortening rotations in this situation.

Manage Luxor[®] for Phomopsis, and Bean Yellow Mosaic Virus (BYMV) similar to other albus varieties. Anthracnose is not present in NSW and Victorian lupin crops, so observe all quarantine restrictions and import regulations. Do not grow ornamental Russell Lupins in the farm garden.

Insects:

Follow the same guidelines as for other albus varieties. Monitoring and control of native budworm is essential for premium human consumption markets.

Harvesting:

Maximise grain quality by harvesting on time, and consider the use of windrowing or desiccation.

Ensure the header is adjusted correctly for the large-seeded lupins, and harvest at the coolest times to avoid shattering.

Seed Availability:

Luxor[®] has been commercialised under licence to Viterra, it is protected under Plant Breeders' Rights and has an end-point royalty of \$2.80/t to be paid on delivery. Grain may be sold, kept for feed, or kept as own seed, but under the PBR Act it is an offence to knowingly sell or give grain to others for seed purposes.

ph: 1800 018 205
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Other reading: For albus lupin management guidelines, see:

- I&I NSW publications (www.dpi.nsw.gov.au): [Winter Crop Variety Sowing Guide 2009](#) ; [Germination Testing & Seed Rate Calculation](#) [Weed Control in Winter Crops 2009](#) ; [Insect & Mite Control in Field Crops 2009](#) ; [Windrowing Lupins](#) ; [Albus Lupins](#) ; [Testing Albus Lupins for Bitter Seeds](#)
- Vic DPI (www.dpi.vic.gov.au) "Winter Crop Summary 2007"
- Pulse Australia (www.pulseaus.com.au) Bulletin "Test the bitterness in albus lupin seed"

Disclaimer: Recommendations have been made from information available to date and considered reliable, and will be updated as further information comes to hand. Readers who act on this information do so at their own risk. No liability or responsibility is accepted for any actions or outcomes arising from use of the material contained in this publication.

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