



Harvestability of lupins

Reuben and Yasmine Smith, Warrego Farms, Lake Grace, WA.

L-R: Ellis, Yasmine, Poppy, Claudia and Reuben Smith.

Introduction

Reuben and Yasmine farm alongside Rueben's parents Terry and Colleen farm a total of 5,100ha, in the Lake Grace region of WA. Reuben is a fourth generation farmer whose family history in farming spans back to the 1920's.

He returned back to farm in 2013 and then in 2025, the farm transitioned to total cropping, with one-fifth of the area allocated to a legume or a chemical fallow.

Growing Legumes

Machinery Cost

The Smiths crop over 5,000ha, up from 2,500ha in four years. With the expansion of cropping area comes machinery expenses, in particular harvest gear. Reuben said that blowing the legumes out and brown manuring has been a consideration.

Grain Storage

Transitioning out of sheep, into total cropping has seen short term challenges with grain storage. Lupin yield can be hard to predict with bulky crops often yielding less than thinner ones he explains. **"I've got 680ha of lupins in this year I'm trying to source a cost effective way to store them,"** Reuben said.

"Ideally we would store them on farm, then backload them with lime or gypsum."

He is looking into alternative storage options such as repurposing fertiliser storage sheds. Reuben expects this to be relatively short term problem but the variability of lupin yield adds to the complexity.

Varieties

The Smiths started with Barlock lupins, moved into Jurien, and are now trialling Rosemount.

"Jurien was easier to harvest, it stood up a bit taller, but it shattered badly," Reuben said.

"We're hoping Rosemount holds together better."

Field peas have also been part of the mix.

"We've gone from Gunya into Butler. They've been easier to harvest, but that might just be the seasons we've had," he notes.

"The pod casing is leathery, not brittle like lupins. That helps."

Weed control

Reuben said he always desiccates his lupins with 800ml/ha of paraquat with high water rates as their main purpose in the rotation is to reduce weed numbers in paddocks.

Nitrogen Decisions Following Legumes

Reuben's nitrogen decisions have shifted with experience. **"We used to follow lupins with wheat or barley and not feed them much," he said.** **"But in a dry start, you don't get the tillering or biomass."**

Now, he applies 30 units of nitrogen at seeding to support early vigour. **"After that, the legume nitrogen release happens slowly, as needed and if the season is favorable we will apply more," he explained.**

He also factors in biomass and grain removal when planning the following years fertiliser. Canola now often follows legumes in his rotation where nitrogen is not reduced.

Harvesting legumes

Reuben has two John Deere headers (S680 & S670) with 640D fronts. **He said "the John Deere front is okay for harvesting lupins, the turbo drum has really helped to feed lupins in".**

While the turbo drum is mainly intended for more efficient canola harvest, Reuben said it certainly has helped with other crops like lupins. It has more retractable fingers, more space for bulk and a more aggressive pattern which feeds the crop in better.

While previous header fronts have had crop lifters fitted, Reuben explained that the newer fronts have come a long way and even though his front isn't a flex front it still has the ability to follow the contours of the land making it "good enough" for legume harvest. He said that a flex front would be the ultimate for legume harvest but with that comes additional maintenance as there are more moving parts. Reuben added that a hinged draper or a tin front would also be good.

Key Players

This project was conducted with the following partners:

- LIFT- local grower group leading the trial
- Grower Group Alliance (GGA) – project management
- Department of Primary Industries and Regional Development (DPIRD) – technical support and funding partner.

Harvest tips

Reuben harvests lupins when conditions are cool or at night to reduce losses. For field peas, they are left until last in the harvest program as they don't have the shatter risk and prefer a hot harvest.

"The main issue with harvesting lupins is shattering and for field peas its lodging and inconsistent header feeding on tram lines or areas of poor establishment," Rueben said.



Highlights

- **Enhanced nitrogen levels:** legumes add valuable nitrogen to the soil important for early crop growth.
- **Expanding cropping area means more legume area:** transitioning out of sheep into total cropping has increased the Smiths are of legumes. Brown manuring the legumes to gain better weed control while still maximising nitrogen fixation remains an option to the Smiths.
- **Grain storage:** more on-farm grain storage is being sort to deal with the increased tonnage due to the extra area being cropped and for years with higher yields.