

Farmer scale trials of novel crops

Background

Some farmers were keen to experiment with novel crops in 2009, wanting to see first hand how such crops performed on their own patch of dirt.

What was done

Rodney and Judie Bell, along with sons Travis and Lachie, grew an array of wheat types:

- Tamoroi durum for pasta
- Barham soft wheat for making biscuits and cakes
- Binnu noodle wheat for noodles and,
- Mace, the new milling wheat, used for making bread.

The yields and gross margins for each of these varieties can be found in Table 1 along with the comparison

against the commonly grown milling wheat Wyalkatchem.

It is important to point out that the trial was conducted on faba bean stubble meaning there was likely to have been some nitrogen carry over assisting in producing the phenomenal yields. Mace, Wyalkatchem and Tamaroi durum received a total of 150 kg/ha of urea, whilst Barham and Binnu received only 75 kg/ha urea.

Whilst Binnu noodle wheat had the highest gross margins in this trial, in SA it can only be received as AGP, hence the two grades and prices for this variety in Table 1. Despite the low application rate of urea on Barham, its protein exceeded the Soft1 (SFE1) threshold, which must be below 9.5%. As a result, Barham was downgraded to Soft2 (SFE2) equating to \$18/t price penalty.

TABLE 1 The Bell family trial of different wheat varieties

*Input costs taken from 2009 Farm Gross Margin Guide and adjusted according to quantity of urea applied. ¹Prices correct 21/01/10 www.abb.com.au, net of GST and receival fees. ²Freight at \$53/t (\$10 on island cartage, \$43 off island cartage). ³Fremantle (WA) delivery.

Variety	Yield	Test	Protein	Grade	\$/tonne ¹	Input	Freight ²	Gross
	(t/ha)	weight	%			costs* (/ha)	(/ha)	margin (/ha)
Binnu noodle wheat	6.8	77.4	9.7	ANW1 ³ (WA)	222	\$267	\$360	\$882
<i>Binnu noodle wheat</i>	<i>6.8</i>	<i>77.4</i>	<i>9.7</i>	<i>AGP1 (SA)</i>	<i>180</i>	<i>\$267</i>	<i>\$360</i>	<i>\$597</i>
Wyalkatchem wheat	6.88	79.4	12.4	APW1	200	\$309	\$365	\$702
Barham soft wheat	5.99	75.6	10.4	SFE2	209	\$267	\$317	\$667
Mace wheat	6.11	78.6	12.1	APW1	200	\$309	\$324	\$589
Tamaroi durum	5.04	77.6	14.6	DR1	230	\$309	\$267	\$583

The Pontifexs experimented with growing a selection of pulse crops including Nura faba beans, Nugget (mid maturity) lentils, chickpeas and Luxor albus lupins. Faba beans were included in the trial after the Japanese expressed interest in sourcing faba beans from Kangaroo Island. The other crops, lentils, chickpeas and albus lupins all fit into the category of high value, low volume crops.

The trial was conducted on East West Two formerly owned by Phil Tonkin with soil texture: sand, $\text{pH}_{\text{CaCl}_2}$ 5.2 (0-10 cm) and 6.7 (30 + cm), which is not typical of the ironstone soils on the plateau.

The chickpeas were found to be delicious to wildlife and unfortunately few survived. Faba beans, being a waterlogging tolerant plant did quite well when sown on 20 inch row

spacings yielding around 2 t/ha. However, those on 10 inch spacings failed to yield bringing the average back to 1.5 t/ha over the 60 ha sown. Unlike faba beans, the lentils were not tolerant to waterlogging, inferring that site selection is critical to their success. The lentils growing on drained soil thrived, yielding up to 2.18 t/ha in patches. However, the weaker wetter patches brought the average yield for the 11 ha sown to 1.09 t/ha. In addition, areas of

regenerating clover out-competed the lentils, also detracting from the tonnages reapt.

The luxor albus lupins were much like lentils in that they were not tolerant to waterlogging and unfortunately the site they were grown on offered little respite such that with the exception of 0.4 of the 54 ha sown, the rest were a washout

TABLE 2 The Pontifex family trial of different pulse varieties

*Input costs taken from 2009 Farm Gross Margin Guide ¹Prices correct 21/01/2010 www.abb.com.au, net of GST and receival fees. ²Freight at \$53/t (\$10 on island cartage, \$43 off Island cartage).

Variety	Yield (t/ha)	\$/tonne ¹	Input*costs (/ha)	Freight ² (/ha)	Gross Margin(/ha)
Nura faba beans	1.5	250	\$338	\$80	-\$43
Nugget lentils	1.09	950	\$277	\$58	\$701
Albus luxor lupins	0	0	\$205	\$0	-\$205
Chickpeas	0	500	\$277	\$0	-\$277

Shane Edwards dabbled in growing Nipper (mid-late maturity) lentils in McGillivray, yielding 0.9 t/ha. The heat at the beginning of November cooked what was still green, more than likely curtailing yield.

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- Shane Edwards

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