

CWFS PULSE VARIETY TRIAL

Commercial partners for current pulse varieties

Variety	State of release	End-point royalty	Commercial Partner	Telephone
Chickpeas—desi				
Flipper [Ⓛ]	NSW	yes	AWB Seeds	0428 122 465
Genesis™ 508	Vic	yes	Australian Agricultural Crop Technologies	(02) 6795 3050
Genesis™ 509	Vic	yes	Australian Agricultural Crop Technologies	(02) 6795 3050
Howzat [Ⓛ]	NSW	no	Australian Agricultural Crop Technologies	(02) 6795 3050
Jimbour [Ⓛ]	Qld	no	Mt Tyson Seeds	(07) 4693 7166
Yorker [Ⓛ]	NSW	yes	AWB Seeds	0428 122 465
Chickpea—kabuli				
Almaz [Ⓛ]	WA	yes	AWB Seeds	0428 122 465
Genesis™ 090	Vic	yes	Australian Agricultural Crop Technologies	(02) 6795 3050
Genesis™ 425	NSW/Vic	yes	Australian Agricultural Crop Technologies	(02) 6795 3050
Nafice [Ⓛ]	WA	yes	AWB Seeds	0428 122 465
Faba beans				
Cairo [Ⓛ]	NSW	yes	ABB Seeds (PlantTech)	1800 112 400
Farah [Ⓛ]	SA	yes	PlantTech	1800 112 400
Fiesta VF [Ⓛ]	SA	no	PlantTech	1800 112 400
Manafest	SA	yes	AWB Seeds	0428 122 465
Nura [Ⓛ]	SA	yes	AWB Seeds	0428 122 465
Field peas				
Bundi [Ⓛ]	Vic	no	Premier Seeds (Auswest Seeds)	(02) 6852 1500
Excell [Ⓛ]	Vic	no	n/a	
Kaspa [Ⓛ]	NSW/Vic	yes	AWB Seeds	0428 122 465
Morgan [Ⓛ]	NSW	no	Hart Bros. Seeds	(02) 6924 7206
Parafield [Ⓛ]	SA	no	PlantTech	1800 112 400
Snowpeak [Ⓛ]	Vic	no	n/a	
Sturt [Ⓛ]	Vic	no	Premier Seeds (Auswest Seeds)	(02) 6852 1500
SW Celine [Ⓛ]		yes	Cropcare Seed Technologies	0427 023 629
Yarrum [Ⓛ]	NSW	yes	Australian Grain Technologies	(02) 6881 6210
Lentils				
Aldinga		no	Australian Field Crop Association	(08) 8522 3973
Boomer [Ⓛ]	Vic	yes	AWB Seeds	0428 122 465
Cassab	WA	no	Pea Growers Cooperative	(03) 5497 1766
Digger	Vic	no	n/a	
Matilda	Vic	no	n/a	
Nipper [Ⓛ]	Vic	yes	AWB Seeds	0428 122 465
Northfield [Ⓛ]	SA	no	Australian Field Crop Association	(08) 8522 3973
Nugget	Vic	yes	PlantTech	1800 112 400
Lupins—narrow-leaf				
Jindalee [Ⓛ]	NSW	yes	AWB Seeds	0428 122 465
Mandelup [Ⓛ]	National	yes	ABB Seeds (PlantTech)	1800 112 400
Quilnock [Ⓛ]	National	no	PlantTech	1800 112 400
Wonga [Ⓛ]	National	no	Premier Seeds (Auswest Seeds)	(02) 6852 1500
Lupins—albus				
Kiev-mutant	National	no	Certified seed growers	
Ultra	National	no	Certified seed growers	
Luxor [Ⓛ]	NSW	yes	ABB Seeds	(02) 9925 0570
Rosetta [Ⓛ]	NSW	yes	ABB Seeds	(02) 9925 0570

Ⓛ Plant Breeders Rights (PBR)

Any unauthorised commercial propagation or sale, conditioning, export, import or stocking of propagation material of a variety protected by PBR is an infringement under the Plant Breeders Rights Act 1994.

End-Point Royalties (EPR)

Many varieties attract an end-point royalty which must be paid upon sale of grain. Growers should check with the rural merchant or seed company when purchasing seed if an end point royalty exists and how it needs to be paid.

For further information contact

Peter Matthews, NSW DPI, Temora
Phone 02 6977 3333

Pulse Points, individual trial data and further information are available on the NSW DPI web site:
www.dpi.nsw.gov.au

Acknowledgment

The Crop Evaluation Unit operators who conducted the variety evaluation trials that provided the yield data, and NSW DPI biometricians who analysed the data.

Photos by Ray Cowley (page 2), Di Holding (page 4) and the authors.

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2008 Department of Primary Industries
ISSN 1441-2233

DISCLAIMER

The information contained in this publication is based on knowledge and understanding at the time of writing, April 2008. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up-to-date and to check currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.

Written by Peter Matthews, District Agronomist, NSW Department of Primary Industries Temora, Eric Armstrong, Research Agronomist and David Lockett, Lupin Breeder, NSW Department of Primary Industries Wagga Wagga.



NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Brad Davis
Central West Farming Systems

Key Messages

- In 2009, field peas were the only pulse crop to produce measurable yields in the trials run at Condobolin and Euabalong.
- All field pea varieties produced similar yields at Condobolin.
- Harvest was difficult due to stunted plant height and lodging.
- Sowing pulse crops early is essential to maximise yield

Why was it done?

There has been little interest in pulses over the past few years from CWFS grower members due to poor performance and many crop failures caused by recent droughts.

However, pulses provide a vital role in cropping systems, and may be more relevant to growers in the coming seasons. They provide cereal cropping systems with a disease break, which are becoming more prevalent in the Central West, in particular, Crown Rot. They also can fix nitrogen in the soil, benefiting following cereal or canola crops.

This trial was set up to provide growers with information about break crop options available to them. As season and market conditions change, this information will become increasingly important.

New pulse varieties are constantly being released, promoting a variety of benefits. Some National Variety Trials are conducted in the Central West region but there was a call for more sites from local growers.

How was it done?

A replicated and randomised small plot trial was sown at Condobolin, containing several pulse species and varieties. A similar trial was established at Euabalong to which a few additional alternate crop options were added at the request of our members in that area. Due to a poor finish to the season and a late break at Euabalong, only the field peas were harvested. Similarly at Condobolin, only the field peas gave recordable results.

Background

Euabalong Site

Hosts Ian & John Kemp
Location "Derrida"
Paddock history Barley Stubble

Soil Type Red Clay Loam
Soil fertility pH (1:5 water) 5.9
Colwell P 35 mg/kg
Nitrate Nitrogen 25 mg/kg
Sulphate Sulphur 3.7 mg/kg
Zinc (DTPA) 0.35 mg/kg
Sowing Date 11th June 2009
Harvest Date 13th November 2009
Plot Size 13m x 1.8m
Seeding rate Field peas 110 kg/ha
Chickpeas 80 kg/ha
Albus lupins 100 kg/ha
Narrow leaf lupins 65 kg/ha
Lentils 45 kg/ha
Fertiliser rate MAP at 66 kg/ha
Herbicide Site treated with 2 L/ha Roundup 450 2 weeks prior to sowing, 1.5 L/ha Roundup 450 and 1.5 L/ha Triflur Xcel at sowing.
Design Block design with three replications and fully randomised
Measurements Establishment, vigour, yield,

Condobolin ARAS

Host Condobolin Agricultural Research and Advisory Station (ARAS)
Location Trundle Rd
Paddock history Wheat Stubble
Soil Type Red Clay Loam
Soil fertility pH (1:5 water) 5.6
Colwell P 22 mg/kg
Nitrate Nitrogen 37 mg/kg
Sulphate Sulphur 3.6 mg/kg
Zinc (DTPA) 0.4 mg/kg
Sowing Date 15th June 2009
Harvest Date 11th November 2009
Plot Size 13m x 1.8m
Seeding rate 110 kg/ha for field peas
Fertiliser rate MAP at 66kg/ha
Herbicide Site treated with 2L/ha Roundup 450 2 weeks prior to sowing, 1.5L/ha Roundup 450 and 1.5L/ha Triflur Xcel at sowing.
Design Block design with three replications and fully randomised
Measurements Establishment, vigour, yield,

What Happened?

At the Condobolin site the trial was sown on good moisture. Establishment and plant numbers were even across all field pea varieties. Early vigour was strongest in the OZP lines 601 and 602 and Bundi.

The Condobolin Field Day was held on 30 September. By then all crops were showing severe moisture stress. The lentils, narrow leaf lupins, albus lupins and chick peas were short with very few pods forming. For most of these pulses they were sown too late and ran out of moisture. As a result, they all failed. However, field peas had sufficient biomass to produce a number of pods.

The Euabalong site gave a similar result. There was even establishment and good plant numbers across the field pea varieties in the trial. The Spring Field Day at Euabalong was held earlier on 18 September. At this stage many of the pulses were flowering and starting to develop pods. There were early signs of moisture stress and many of the pulses were short with little biomass.

At harvest, only the field peas gave a recordable yield. The lentils, narrow leaf lupins, albus lupins and chick peas all failed.

Results

Table 1. CWFS 2009 Field Pea yields

Condobolin		Euabalong	
Variety	Yield (t/ha)	Variety	Yield (t/ha)
Bundi	0.729		
FP 602	0.692		
FP 601	0.688		
Celine	0.513	Celine	0.306
Kaspa	0.466		
Excel	0.405	Excel	0.206
Maki	0.371	Morgan	0.233

What does this mean?

Many of the pulse species were sown outside their optimal window due to the late break. Lupins are recommended for sowing in late April to early May, chickpeas mid May to Early June, and lentils generally aren't grown in the Central West due to their higher moisture requirements and preference for alkaline soils. These pulses did not yield and therefore no results were collected beyond establishment, plant counts and early vigour observations. In this season field peas produced grain while other pulse species did not. The field peas were also sown two weeks later than recommended but still produced grain.

As a result of these factors yields were low and variable. Statistically there was no difference in yield between any of the field pea varieties at either site.

Continued research on pulses needs to be conducted in our low rainfall environments. It is important to have break crop options to control both disease and weeds. Pulses may also play a greater role in the future as grain markets shift and if the cost of bagged nitrogen increases further.

Acknowledgements

Thanks to all the co-operators, hosts, district agronomists, seed and product suppliers and CWFS staff for assistance with our trials throughout the year.



Lupin row spacing trial

Merriwagga 2010

Barry Haskins

District Agronomist, Hillston

Dr Peter Martin

Research Agronomist, Wagga Wagga

February 2011

Key Points

- Row spacing had a large effect on established plant population and crop vigour, where wider rows decreased plant numbers and vigour.
- Yield declined as row spacing increased, however this may have been affected by lower plant numbers in wider rows.
- There was a difference in yield between varieties, where Kiev_Mutant and Rosetta yielded the highest.

Trial aim

Measure the influence of three row spacing's (25, 50 and 75cm) and six lupin varieties on grain yield.

Trial details

Location: Merriwagga, south-west NSW

Soil type: red clay loam

Soil test: 0 – 10 cm: pH = 4.9, Al% = 0.18

CEC = 8.9 meq/100g

Colwell P = 17 mg/kg

Rainfall: 496 mm (January to October 2010)

316 mm growing season rainfall (April to October)

Previous crop: field peas

Trial management

Sowing date: 15 May (re-sown as first sowing was destroyed by locusts).

Emergence: even.

Fertiliser: 60 kg/ha DAP at sowing – all treatments

Herbicides: 1.5 l/ha Roundup 450 + 1.5 l/ha Avadex Xtra + 1.5 l/ha Triflur X IBS

1kg/ha Simazine 900DF PSPE

Insecticides: Nil

Fungicides: 1 l/ha Bayleton on 13 August by air (as trial was in wheat field).

Harvest date: 14 November

Treatments

Varieties: Albus lupin – Kiev_Mutant; Luxor; Rosetta

Narrow-leafed lupin – Jenabillup; Jindalee; Mandelup

Row spacing: 25, 50 and 75 cm.

Seasonal review

As a result of a very wet summer, the trial paddock had good moisture to depth. An early autumn break, allowed a sowing opportunity in late April.

Locusts were an issue at/after emergence however did not worry the lupins as much as other crop types. After an insecticide application the trial grew well.

Above average rainfall fell during most of the growing season. The exception was a short period in early October, where temperatures rose and the trial began to show early signs of moisture stress.

However, an 80 mm rainfall event on 13 October prevented loss of yield potential.

The trial was harvested before rain in November and December could cause any significant quality downgrades.

Variety Specific
AGRONOMY
Packages

GRDC-supported research project in south/central NSW to develop agronomic information for new varieties of wheat, lupins and winter oilseeds.