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FarmLink Research Report 2019

GRDC Northern Pulse Check – Local Extension and Communication for Profitable Pulse Production

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Trial Site Location Liverpool Plains, Central and Southern NSW

Introduction

Northern Pulse Check is a GRDC-funded program that FarmLink have been running in central and southern NSW since September 2018, in partnership with Pulse Australia. It is part of a larger project running in the GRDC northern region, which also covers Central and Southern Qld, Northern NSW and Coastal NSW and Queensland. The purpose of the investment is to give farmers and advisors confidence in growing and managing pulse crops in these regions. It also aims for expansion of high-value pulses (in particular, chickpea, lentils and faba beans) into new areas, and sustainable intensification of all pulses in existing areas. By expanding the capacity of growers and advisors to deal with these crops, the entire value chain 'paddock-to-plate' benefits at a time when there is increasing interest in plant-based human diets and use of plant proteins for stock feed, pet food and aquaculture use.

This program is achieved by running Pulse Check discussion groups. FarmLink manages 12 groups in five regions (Liverpool Plains, Central East NSW, Central West NSW, South East NSW and South West NSW). Each group has a dedicated facilitator that co-ordinates and delivers activities that best meet the needs of growers and advisors in each group. A discussion group structure with extension activities was selected as the best way to engage growers, as the structure and activities are directed by the group members themselves. Groups meet three times per year, with meetings facilitated by an agronomist or farming systems group extension officer. Guest presenters are included (marketers, researchers, experienced growers etc.) on an as-needs basis, as identified by group members. This will seek to build the group members' capacity in pulse production, in turn increasing production in the region serviced. Pulse Check Group facilitators have been trained by Jeanette Long, a well-known agricultural communicator, so they can establish, maintain and evaluate groups effectively. They receive ongoing technical support from FarmLink and Pulse Australia to ensure the pulse information being presented is current and accurate.

In general, the programs have been well-run and engagement with local groups has had positive outcomes. However many of the groups are situated in areas that have been drought-affected for the past two years, so there have not always been crops or trial plots to look at in the region. Facilitators have had to look at alternative ways to bring the groups together. Activities have included field days, crop walks, newsletters, seminars and webinars across agronomy and marketing sectors. All extension, web links and social media platforms have been used to distribute information. It has been challenging, to say the least, but it has been well handled, and GRDC have been supportive of these efforts in a couple of tough seasons. The program will run through to April 2020, so it is hoped that groups will have at least one season to show the potential for pulses in all areas.

Project Partners



Funding Partners



Project code - Liverpool Plains NSW (project code FLR1809-002SAX), Central West NSW (FLR1809-003SAX), Central East NSW (FLR1809-004SAX), South West NSW (FLR1809-005SAX), South East NSW (FLR1809-006SAX)



Northern Pulse Check

This extension program was initiated in mid-2018 in all cropping areas of the GRDC northern region. FarmLink manages five regions in central and southern NSW, and on the Liverpool Plains; Independent Crop Consultants/PulseAg run five regions in northern NSW, Darling Downs and Central Queensland; and Soy Australia runs three groups on the coastal areas of Queensland and northern NSW. All these groups partnered with Pulse Australia to provide links across the pulse value chain.

FarmLink co-ordinates 12 Pulse Check groups in the five regions: in Liverpool Plains (with Heuston Agronomy); Central East NSW (with NSW Local Land Services and Heuston Agronomy); Central West NSW (with Central West Farming Systems and Heuston Agronomy); South East NSW (with Riverine Plains LLS); and South West NSW (with Irrigated Cropping Council, Southern Growers and the Irrigation Research and Extension Committee).

Activities that have been run by or for the groups have included field days, crop walks, information

sessions, seminars and webinars, newsletters and technical information distribution by email and social media (Facebook, Twitter and YouTube). They have covered a full range of topics in agronomy, grain storage and market updates.

All of these groups have had opportunities to link into the webinars run by Birchip Cropping Group: Pulse marketing with Paul Lange (Centre State Exports); and Avoiding header fires when harvesting pulses with Ben White (Kondinin Group), with YouTube videos by Cindy Benjamin (Pulse Australia).

Many of the GRDC research programs run by NSW DPI (pulse breeding, agronomy, inoculation) and CSIRO (crop adaptation, farming systems) are dependent on linking with the Pulse Check groups to get the extension messages out, and the traders and processors that are members of Pulse Australia interact with these groups.

<http://www.farmlink.com.au/project/northern-pulse-check>

South East NSW

Riverine Plains have had an extensive program covering a wide range of topics, with good responses from locals wanting to learn more about the different pulses. The group is based at Rand near Corowa. Topics that were of interest to the group include:

- Inoculation, with Dan Zinga (New Age Microbials)
- Value adding, paddock to plate, with Garry Drew (Lupins for Life)
- Harvest techniques to avoid fires, with James Madden (Independent agronomist/contractor)
- Crop topping pulses, with Chris Toohey (Elders)
- New varieties including Amberley, Marne and Bendoc Faba beans, with Mark Richards (NSW DPI)
- Disease management and phosphorus trial results, with Ian Menz and Graeme Sandral (NSW DPI)
- Pulses in the rotation, with John Stevenson and Brad Chant (Warrakirri)
- The Pulse Adaptation Project, with Allan Peake (CSIRO)
- Grain storage to prevent insects and maintain quality, with Chris Warrick (Primary Business)
- The forecast for Australian pulse production, with Ben McClusky (Market Check)

The group checked faba beans, chickpeas and lentils sown side-by-side. There was also a discussion around phosphorus placement and liming acid soils to avoid problems.

FarmLink have a group based at Marrar near Wagga Wagga and local farmers and advisors have shown interest in different pulses and how they fit into the farming system. There are several innovative farmers here that are willing to try different methods in their farming systems. Some of the changes include spring-sown chickpeas to avoid cool conditions at flowering and using pulses in a companion cropping mix with other crops (faba beans and cereals or peas and canola). Checking these crops has enabled the group to learn about different crop sequences and the catalyst for discussion about alternate systems.

Some of the topics this group have been interested in include:

- Planning for profitable pulses, how pulses fit in the rotation and how to avoid crop damage from residuals, with Greg Condon (Grassroots Agronomy)
- The challenges and considerations in choosing what to grow for your next rotation, as well as what has grown well in the area, with Rob Hart (Hart Bros Seeds)
- Varieties, sowing, seed treatment, soil constraints, with Kurt Lindbeck, Helen Burns and Mark Richards (NSW DPI) and Geoff Minchin (Riverina LLS)
- Grain storage to prevent insects and maintain quality, with Chris Warrick (Primary Business)
- Marketing opportunities locally, with Damian Maloney (Croker Grain)
- Marketing conditions for both domestic and international trade, with Phil Bowden (Pulse Australia)

South Western NSW

Northern Pulse Check groups in this region are predominately irrigation farmers who had become dryland farmers, with low allocations during this drought. The priority for many of these farmers are summer crops like cotton, maize and rice, and they have been interested how the winter pulses fit into these rotations.

Irrigated Cropping Council (Barham), Southern Growers (Finley) and Irrigation Research and Extension Council (Griffith) all run Pulse Check groups. One aspect of this program they have found difficult is that there were no trials showing how pulse crops fit into an irrigated cropping regime that use the same principles of water use that they would use on their farms for other crops. All the trials done by NSW DPI or CSIRO in the region are basically dryland trials that have had some irrigation to either get them started or to supplement the rainfall, rather than specifically looking at best management practices in an irrigation area.

However, they have all run discussion groups, field

days or information forums about high-value pulses for their region. This created interest in different pulse crops than had not previously been grown, or in crops that had not previously been successful, in particular, faba beans. The farming community here was able to see the potential of this crop for high-value human consumption, pet food and/or the aquaculture industries. For this region, faba beans will be one of the major winter pulse crops in the future, as demand is high in both the export and domestic markets. Faba beans are the preferred irrigated pulse, especially under a centre pivot or lateral move sprinkler system. They tolerate wet conditions better than other pulses, yield well and they have enjoyed high prices in recent times. With increased interest in faba beans, it's imperative that the new varieties are trialled in this region. ICC have trials on the range of pulse varieties, using supplementary irrigation and pulse agronomy that includes the use of growth regulators to get better harvest index in faba beans, but it needs to be expanded across the region.

Topics of interest for these groups have included:

- Varieties, disease and nutrient management, with Ian Menz, Tony Napier and Don McCaffery (NSW DPI)
- Market updates, with Trevor Bray (UniGrain)
- Chickpea, lentil and faba bean trials, with Damian Jones (ICC)
- Export market update, with Phil Bowden (Pulse Australia)
- Grain storage to prevent insect infestation and maintain quality, with Chris Warrick (Primary Business)
- Mung bean agronomy and marketing, with Paul McIntosh and Mark Schmidt (Australian Mungbean Association)

Central West NSW

Three Northern Pulse Check groups are run in this region at Condobolin (CWFS), West Wyalong (FarmLink) and Lake Cargelligo (Heuston Agronomy). All these groups are in regions badly affected by the drought, and in all cases, the conditions here

deteriorated as the season progressed. Very few commercial crops were sown in these areas and the ones that were had been grazed or baled for stock feed when rain didn't arrive in spring. With the poor season, pulse crops were not considered in many cases. They were considered too high a risk or it was too expensive to find seed, but there were several chickpea crops that showed how resilient this crop is under tough conditions.

In general, although farmers are interested in learning about new pulse crops, it was not a good year to see anything in the ground. Numbers at the activities run by the groups varied depending on how busy farmers were feeding livestock, and the area of pulses sown (and other crops) was small compared to other years. Facilitators used a variety of extension methods to engage the groups when many farmers were reluctant to attend group meetings. All groups ran discussion groups or forums, conducted crop walks or visited the local field trial sites being run by NSW DPI or CSIRO.

CWFS ran field days, crop walks and forums with guest speakers, including:

- Belinda Hackney (NSW DPI) Inoculating legumes
- Tony Swan (CSIRO) Farming system trials
- Ewan Leighton and Richard McCallum (NSW DPI) on lentil and chickpea phenology trials
- Paul McIntosh and Mark Schmidt (Australian Mungbean Assn) on Mung bean agronomy and marketing
- Chris Warrick (Primary Business) on grain storage to prevent insect infestation and maintain quality
- Cheryl Kalish-Gordon (RaboBank) on global pulse markets
- Phil Bowden (Pulse Australia) on the domestic market update

The CWFS/AGnVET field day at Condobolin was also used to promote Pulse Check with lentil, chickpea and field pea trials and a market update from Phil Bowden (Pulse Australia). CWFS have distributed written material to the group including the GRDC Ute Guides for lentils and faba beans, and the NSW DPI Pulses in Acid Soils bulletin.

Heuston Agronomy ran crop walks and forums for the group at Lake Cargelligo, looking at chickpeas, field peas and lupins on local farms. Topics of interest for this group were:

- General pulse agronomy, with Ian Menz (NSW DPI)

The feedback shows this was a small but enthusiastic discussion group, led by experienced agronomists Penny Heuston and Andrew McFadyen. There was good engagement and an eagerness to learn about the range of new pulse crops.

FarmLink ran the group based at Talimba (West Wyalong) with an enthusiastic response. Guest speakers and topics have included:

- Graeme Sandral and Eshan Tavakkoli (NSW DPI) on phosphorus responses in pulses and soil constraints
- Chris Warrick (Primary Business) on grain storage to prevent insect infestation and maintain quality.

Pulse literature including GRDC and NSW DPI publications (Ute Guides, BMP Guides) was distributed.

Central East NSW

Northern Pulse Check groups at Canowindra/Cowra (NSW LLS) and Gilgandra/Armatree (Heuston Agronomy) have had good progress, with all meetings and activities on schedule and good engagement with each community. This was in spite of drought conditions for the past 12 months, especially in the Gilgandra/Armatree region. In early April, Armatree and surrounds was fortunate enough to receive up to 100 mm of rain. This caused severe damage in places, but overall was a very welcome event. Several pulse crops were sown (lupins, faba beans and chickpeas), so the group were based around Armatree mainly to check these crops.

LLS group have generally engaged around 15-45 participants and the Heuston Agronomy numbers have varied a little more from 15-50. It is difficult to gauge how many hectares of pulses are represented by this group, as there are very few crops sown in this region as a result of the drought (only around 5-10% of the usual area).

Both groups ran mid-season crop walks at NSW DPI Pulse trial sites and Kalyx NVT sites (Canowindra, Cudal, Armatree, Gilgandra and Trangie). Guest speakers included:

- Col McMaster (NSW DPI) on local pulse trials, soil conditions, treatments, aims, and a practical nodule rating exercise
- Kurt Lindbeck (NSW DPI) on key management options for managing disease in pulses
- Belinda Hackney (NSW DPI) on best practice for inoculation in pulses
- Phil Bowden with market updates for domestic and export

NSW DPI Field day at Cudal included presentations by:

- Jason Condon and Helen Burns (NSW DPI Wagga) on soil constraints for pulses
- Col McMaster (NSW DPI Orange) on pulse agronomy trials
- Belinda Hackney (NSW DPI) on best practice for inoculation in pulses
- Brad Howard and Scott Ceeney (Viridis) on their lime incorporation methods

Armatree group had field days, crop walks and forums with topics including:

- Managing ascochyta in dry years, with Kevin Moore (NSW DPI)
- General pulse agronomy with Chris Cooke (Elders Dubbo) and Jamie Taylor (Landmark Dubbo)
- Viruses in pulse crops with Stuart Marshman (NSW DPI Tamworth)
- Domestic marketing update with Gary Lane (Lane Grain, Trangie)

The group also attended the NSW DPI and Kalyx NVT field days at Gilgandra and Trangie.

Liverpool Plains

Of all the Northern Pulse Check groups managed by FarmLink, the Liverpool Plains area was the hardest hit by the drought conditions. The conditions for many of the local towns in this region was unprecedented, with low rainfall and in-flow into storage dams. There was less than half the long-term average rainfall and, more importantly, there were a limited number of crops planted (mainly low-risk cereal crops). There were virtually no pulses or canola. This made it very difficult to engage the two local groups to talk pulses as there were no crops to check. Even the NSW DPI research trials at Breeza had limited access to irrigation water. Prospects for summer crops were also not good as the local dams (Keepit, Pindari, Copeton) remained close to empty. This left many of the local rural businesses that employ young agronomists with no choice but to reduce staff. As a result, the Pulse Check group facilitator, Penny Heuston, had a tough time engaging the local communities in the usual extension activities. Instead social media activities played a role, along with the distribution of technical material and newsletters, and the DPI field days at Breeza. The Australian Mung Bean Association conducted seminars to encourage entry into this summer crop.

Topics of interest to the groups included:

- Managing ascochyta in dry years, with Kevin Moore (NSW DPI)
- Pulse agronomy, with Andrew Verrell (NSW DPI)
- Chickpea breeding, with Kristy Hobson (NSW DPI)
- Mungbean agronomy and marketing, with Paul McIntosh and Mark Schmidt (Australian Mungbean Association)
- Cold tolerance research in chickpea, with Annie Warren and Nerolie Graham (NSW DPI)
- Pulse market update, with Stuart Dobell