



Edition #2 – 20 January 2023

NSW soybean expansion project activities 2022-23

The NSW DPI-GRDC project “*Expansion of soybean production in the high rainfall zone of northern NSW*” is pleased to present the second newsletter for soybean growers and agronomists in Northern NSW.

In this edition we include a round-up of project activities that are underway this season, links to crop gross margin results from last season and highlights from a visit in June last year with the QDAF soybean expansion project to soybean production regions in the Burdekin and Mackay.

As always, please contact the project team if you have soybean enquiries or ideas on how we can help to grow your industry.

Thank you,

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1. Soybean gross margin results 2021-22

Full gross margin analysis was completed on four crops of new soybean variety Gwydir in the 2021-22 season:

- i) Mark & Beverly North, Nunderi
- ii) Paul & Joe Fleming, Codrington
- iii) Brad & Kyron Schwark, Oakwood
- iv) Nathan Anderson, Balfour's Peak



Mark & Beverly North

Location: Nunderi, NSW

Farming system: 3 rows @ 50 cm spacing on raised bed, controlled traffic, sugar cane farming system

Varieties: Gwydir

Planted: 6 September 2021

Harvested: 11 February 2022

Yield: 4.91 t/ha **Protein:** 44% DMB

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Many thanks to the growers and agronomists who hosted the crops and shared their information for this project.

The complete gross margin analyses are published in the NSW DPI Northern Region Research Results:

North, Nunderi

<https://www.dpi.nsw.gov.au/?a=1431828>

Fleming, Codrington

<https://www.dpi.nsw.gov.au/?a=1431826>

Schwark, Oakwood

<https://www.dpi.nsw.gov.au/?a=1431830>

Anderson, Balfour's Peak

<https://www.dpi.nsw.gov.au/?a=1431827>

To receive NSW DPI Research Results for Northern NSW by email contact Penny Heuston:

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A Gwydir Factsheet is available at:

http://www.australianoilseeds.com/soy_australia/licensed_varieties#Gwydir

2022-23 crop gross margin analysis

This season three soybean crops in northern NSW are being analysed for gross margin:

- i) **Tim and Ben McMahon, Harwood Island.**
Evaluation of spring planted soybean variety Gwydir. The potential to boost yield and income by completing two soybean crops in the spring-summer sugar cane 'fallow' period will also be assessed.

Ben McMahon (right) in the crop of Gwydir that was planted on 11 September 2022. Photo taken 24 November 2022, 73 days after planting.



Nathan Anderson

Location: Balfour's Peak, Nth of Delungra

Farming system: double cropping soybean and barley, wide row (75 cm)

Variety: Gwydir

Planting date: 14 December 2021, delayed due to late barley harvest

Variety: Gwydir

Harvest: 5 May 2022, delayed due to wet weather (142 days)

Yield: 2 t/ha **Protein:** 42% DMB

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- ii) **Jason Sommerville, Clovass**
Evaluation of spring-planted Gwydir. This crop was planted on 10 October 2022 and included in a field day for North Coast soybean growers (right).

The NSW North Coast experienced wetter than average early spring conditions, however, dry conditions during late spring and summer have reduced crop biomass.



- iii) **David La Fontaine, Balfour's Peak, north of Delungra**
Evaluation of potassium (K) fertiliser rates on low K cropping soils with variety New Bunya.

In collaboration with McGregor Gourlay agronomists Marty Conroy-Jaeger and Alice Jorgensen, the economic benefit of potassium fertiliser will be assessed. Dry conditions in December and January have reduced growth of the crop, however, plants were healthy on 18 January, 2022 (right).



2. Soiling your undies!

In collaboration with Dr Oliver Knox from University of New England at Armidale, soybean growers are assessing their soil biology by burying cotton underpants in the soil for 8 weeks. Degradation of the cellulose in cotton material gives an indication of soil microbial activity. This exercise has been used as a soil health tool in the cotton industry. The more the cotton has deteriorated the better the soil microbial activity. The underpants will be dug up after 8 weeks and results presented at up coming project events. Dr Knox presented this topic at a recent GRDC webinar: <https://grdc.com.au/events/past-events/2022/december/grdc-grains-research-update-online-nsw-dpi-grdc-soybean-pre-season-update?videoid=6317178835112>



3. Herbicide demonstration sites

In collaboration with the GRDC-ICAN Rural project '*Improved weed control in coastal NSW grain production*', sites to demonstrate best practice weed control options for both broadleaf and grass weeds have been established this season.

It is envisaged that after the flooding events and prolonged waterlogging of cropping soils in 2022, that even crop establishment and weed competition will be very challenging this season.

Field walks will be occurring in March to observe the effects of different herbicide combinations on weed control. The photo above right, shows successful control of Fleabane in soybean crop near Delungra.



The ICAN Rural website is a vast resource on herbicide modes of action, mobility in soil and specific information on weed control in coastal grain crops:

<https://www.icanrural.com.au/coastalweeds.html>

4. Soybean agronomist training

In response to calls from the soybean industry for more training for soybean agronomists, GRDC has requested two additional activities for this project– i) pre-season workshops for new and new-to-soybean agronomists and ii) an update of the Australian Soybean Manual.

i) Pre-season workshops for new and new-to-soybean agronomists

In July 2022 two pre-season agronomist training meetings were conducted. Meetings were held in Inverell for all agronomists on the Northern Slopes and Tablelands regions and another in Grafton for new agronomists in the north coast and hinterland regions. Both meetings were well attended with topics covered including interaction of variety and time of sowing, weed control, IPM and nutrition. There were 33 action items developed from the two meetings all aimed at upskilling growers and agronomists in the region. Action items included setting up a WhatsApp group for agronomists to share information and ask questions of the project team, developing a 'one-pass' fertilizer blend for soybean and continued IPM training.



ii) Updating the Australian Soybean Manual

The NSW and QLD soybean expansion projects are undertaking a major update of the Australian Soybean Manual that was produced for Soy Australia in 2012. Each module is being updated with new information and additional links to technical resources. The soybean expansion projects are working with a range of experts including Agricultural Communications expert Cindy Benjamin who has recently updated the Australian Sunflower manual and other grains industry resources.

The manual will exist as a digital (on-line only) resource so that it can be more easily updated in future. It will form the basis of training workshops for growers and agronomists in time for the 2023-24 season. GRDC requested the current soybean expansion projects to take on this extra work in response to soybean industry calls for more training for agronomists and new soybean growers.

5. Planting date and population experiment for Gwydir



Since the field experiments at Grafton Primary Industries Institute (GPII) in 2020-21 evaluating soybean varieties for suitability to spring planting dates, grower interest in spring-planted soybean has increased along with queries on optimum plant population for spring-planted crops.

In response, an experiment with four planting dates (September, October, November and December) and four plant populations ranging from 150,000 to 500,000 plants/ha was established at GPII.

Unfortunately, a severe hail storm destroyed both the September and October planting dates (above).

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The project team successfully established four plant populations at the November and December planting dates (left). The results will be reported at project activities later in the year.

Experience with spring-planted soybean crops over the past two seasons has shown that the excessive plant height and biomass that was expected, did not eventuate. This is likely due to the cooler growing temperatures during spring resulting in slower growth and shorter plants. Initial concerns about lodging developing in spring-planted crops in coastal environments have been allayed. Although plant

height is shorter than expected, the cooler spring temperatures do not appear to adversely affect node development or yield of variety Gwydir.

6. Soybean production tour, Burdekin & Mackay, June 2022

To share information between the NSW and QLD soybean expansion projects, understand constraints facing soybean production on the Queensland coastline, and investigate potential new technologies to benefit NSW growers, a tour was taken by NSW project staff Nathan Ensbey, Sam Blanch and Ashley Moss and NSW soybean growers Paul Fleming (President of Soy Australia) and Mark North. QLD soybean expansion project leader, Carla Atkinson coordinated the tour.

The group travelled to the Burdekin, Bowen, Proserpine, Bloomsbury and Mackay growing regions, meeting with 28 growers and 16 agronomists and giving presentations at 4 shed meetings.

Discussions with growers focussed on soybean rotations in sugarcane farming systems, controlled traffic, time of sowing, benefits of soybean to the cane system, and issues with variety choice, nutrition, and management of weeds, insects and diseases.

Thanks again to the soybean growers that welcomed us onto their farms.

A list of observations and constraints were reported to GRDC and noted by the tour group with tour participant and Chairman of Soy Australia, Paul Fleming, to inform the new Soy Australia strategic plan.

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Grower Christian Lago and Farmacist Agronomist Evan Shannon (left) outlining to Soy Australia president Paul Fleming some of the constraints facing soybean growers in north Queensland.

Three recurring issues from growers in North Queensland included market access, high transport costs to southern processors and diseases.



Tweed soybean grower Mark North (left) discussing time of sowing and variety choice with Burdekin grower Christian Lago.

Christian has success growing the variety Kuranda achieving yields between 4-6 t/ha. However, he has had less success with NSW variety Hayman with it being apparently more susceptible to root and leaf diseases in this irrigated environment. This

may be attributed to Hayman producing a large vegetative biomass in this environment. Disease identification and development of management strategies will be critical to underpin winter and summer soybean production in this unique region.

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Contact the project team



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