

### Callum started

The project now has its first employee – trainee Callum Craigie. He will complete a Cert III in Conservation and Land Management whilst working on the project.

“So I started on the 30<sup>th</sup> of October 2019. It is an amazing workplace at the Plant Breeding Institute. This is a good career choice for a young Indigenous Australian. I really like it here; at first I didn’t care about plants before I came to PBI, now I really like learning and caring about plants and learning about what my people use to eat or use this plant for to help the sick or cure. It is a good career choice here at PBI, I’m learning so much.”

### DigiFarm sub-project update

The Sydney Institute of Agriculture’s DigiFarm project is connecting farmers to best practice digital agricultural methods through field-scale research and demonstrations at Llara farm and 10 satellite demonstration farms in NW NSW. As mentioned last newsletter, one sub-project is to assess three methods of producing economic, cultural and environmental benefit from native grasslands, and compare these to best practice cropping and livestock enterprises.

We have purchased the seed and marked the treatment areas for two 10 ha sites – one on Llara farm and the other at Moree AgSkills College with TAFE NSW. We are waiting for the drought to break for the Llara site to be planted and fenced, however the Moree site preparations are in full swing.

Through an evolving and exciting partnership TAFE NSW, a field has been set aside at the Moree AgSkills College for teaching, research and community engagement. It will meet the aims of DigiFarm community engagement and research, plus the mandate of TAFE NSW for teaching, and allow both parties to benefit from the experience and connections of the other.



A large number of students who take courses at the Moree AgSkills College are Aboriginal people, thus further connecting the project with Aboriginal communities.

In November Callum and John began irrigating the 10 hectare field. We joke that it is now growing an excellent crop of weeds! Some of the “weeds” e.g. pigweed, local name *dhamu*, are actually important food species. We have already collected seed for data and research purposes.

The field is being sprayed and will be sown with grassland species when the weather is right. It will then be split into three treatments as a second replicate to the trial at Llara – Native grains only, grains + grazing and grains + pasture cropping.

## Paddock-to-plate project update

This multi-discipline project aims to perform a complete one-year paddock-to-plate simulation of a native grains enterprise, funded by the Sydney Institute of Agriculture.

In late January, Shauna Phillips visited Narrabri to obtain data for the economic modelling. This will feed into a decision model which will determine the likely farm-gate price that a land holder needs to receive to make native grains the enterprise profitable in its own right (aka excluding cultural or ecosystem benefits), and also what price point would incite the decision to produce native grains instead of cattle, cropping or other possible option for the same land. Report is due in a few months.

A back of the envelope model													
traditional farm activities					native grain production				native grain marketing				
	dryland	improved dryland	chick										
	cotton1	weaners1	pasture	wheat1	pea1	NG a	NG b	NG c	NG d	Ngseed	Ngfood market		
1 ha	100 hd	1 ha	1 ha	1 ha	1 ha	1 ha	1 ha	1 ha	1 ha	kg	kg	kg	kg
GM	200	0.24	0	400	400	0	0	0	100	30	0	0	0
	1,000	542.24	-320	500	450	-226	-226	-226	-417	26500	6,000	245	1,386,224
ha	arable land	1		1	1								1000 le
ha	non-arable land		1			1	1	1	1				100 le
ha	non-a hilly land					1	1	1	1				100 le
hours	Summer labour	0.3			0.05								90 le
	Autumn labour		2		0.05								25 le
	Winter labour		0.3		0.32	0.5	0.1	0.1					128 le
	Spring labour	0.1			0.1				0.55				115 le
tonnes	LSM summer	4300	-28			-21	-21	-21	-21				-1075.1 le
	LSM Autumn	4790	-22			-16.5	-16.5	-16.5	-16.5				-508.32 le
	LSM Winter	3990	-13	0.06		-9.75	-9.75	-9.75	-9.75				2.25-15 le
	LSM Spring	3770	-19	0.62		-14.25	-14.25	-14.25	-14.25				-278.44 le
tonnes	Seed pool					-0.2	-0.2	-0.2	-0.3	1	1		3.66-15 le
tonnes	Faba bean pool					-1							1 le
rain	not 1		1	-1									0 eq
	not 2												0 eq
	not 3	2			-1								0 eq



Bec and Callum at Wee Waa

Bec Cross visited Narrabri and Wee Waa the same week to speak to elders and community members about their aspirations as a community, and whether enterprises involving native foods may be part of their plans. We felt very privileged to have such great turnout from both the Narrabri and Wee Waa communities with over 20 people attending, and we look forward to working together on their ideas going forward. This will include connecting them with other people in the University who are experts in the things they mentioned.

Nutritional testing will commence this month for 13 grassland species. The aim is to create a nutritional panel as seen on the back of a food packet for all the species, plus a few extra bits for the non-grasses e.g. fatty acid profile of purslane, and make various products to compare the properties of bread, biscuits, cereal, boiled grains, etc, etc. This will feed into market research on end products performed by Henry Leung.



Callum threshing kangaroo grass with honours student Anna Drake

The first presentation of results from this project will be at the *Conservation Agriculture in 2030 Conference*, 22-23 June in Sydney.

<https://farminstitute.worldsecuringsystems.com/events/conservation-agriculture-in-2030-conference>

The final report will be released at an event for farmers and Aboriginal people in Narrabri, date TBC.

## Community engagement



*Kamilaroi ladies Robyn and Theresa with summer program students in Sydney  
Pic: Matty Williams*

We were privileged to provide kangaroo grass flour for the Wingara Mura Bunga Barrabugu Summer Program with over 200 Indigenous high school students. Wee Waa ladies Teresa and Robyn flew down for the event (their first on a plane!) and spoke to the kids about their country. Joanna and the team designed a pancake recipe to incorporate the kangaroo grass, which we hear was a big hit! Big thank you and congratulations to Joanna and the team for their work!

A video based on the Johnny Cake Day was shown at the event. It designed to help Indigenous kids consider studying science at Uni, but also is a bit of an overview of the native grains project. it is available at <https://www.youtube.com/watch?v=h9ZzBuhDosc>

## Threshing

We are investigating the potential for over 8 species from NW NSW. One common problem to almost all species has been separating the grains from trash to a food-grade level. Here is an update from Callum:

“It is very hard to thresh some native grasses. Sometimes it is very difficult, sometimes it works for some species and others... don't even attempt trying! There are many ways to thresh (see some examples below). If there is anyone out there or any elder that has a way to thresh native grass let me know. I would love to know the way of the elders who have done threshing it's a long process but you just got to stick to it and get it done.”



When the drought and dangerous conditions ease, we plan to try burning windrows at a field scale, as described by journals of early pastoralists who observed the practice. However we would much prefer to learn from Aboriginal elders who may have seen or heard this practice described; if you know someone who may be willing to chat, please let us know.

### **An update from Bruce Pascoe and team**

Bruce Pascoe and his commercial partners were on a panel at the Grainz conference late last year. The session can be viewed at <https://www.youtube.com/watch?v=x9-W8vG0mY>.

I highly recommend watching this if you are interested in the progress being made in industry. It is slower than many people realise, but there's plenty of passion and desire to work together. The momentum continues to build.

### **A Good Read**

John Newton has just published a follow up to 'The Oldest Foods on Earth' called 'Cooking with the Oldest Foods on Earth.' It is a practical book with recipes and suppliers – no one has any excuses for not using native foods in their everyday life! He has mentioned this project too. Thanks John.

### **Higher education**

Two honours students completed their projects at the end of last year:

- *Tamlyn Huyhn* – BFAB (Hons), The nutritional profile of purslane (*Portulaca oleracea*) and its drought-resistant mechanisms
- *Marc Manzoni* – BFAB (Hons), Increasing the germination potential of native Australian plants

We have five honours students working on various native grain projects at the moment, covering field, lab and marketing topics.

### **Final word**

It has been a privilege to connect with so many people from curious kids up to Aboriginal communities, commercial industry, farmers, bakers and environmental scientists. Thanks to all who reach out and we hope to continue the momentum to move this from the realm of research into a commercial reality for people and the planet! If you have any thoughts, feel free to contact us [angela.pattison@sydney.edu.au](mailto:angela.pattison@sydney.edu.au) or 0404 159 568.

Cheers,

The IFRP team



*Freshly ground kangaroo grass flour*