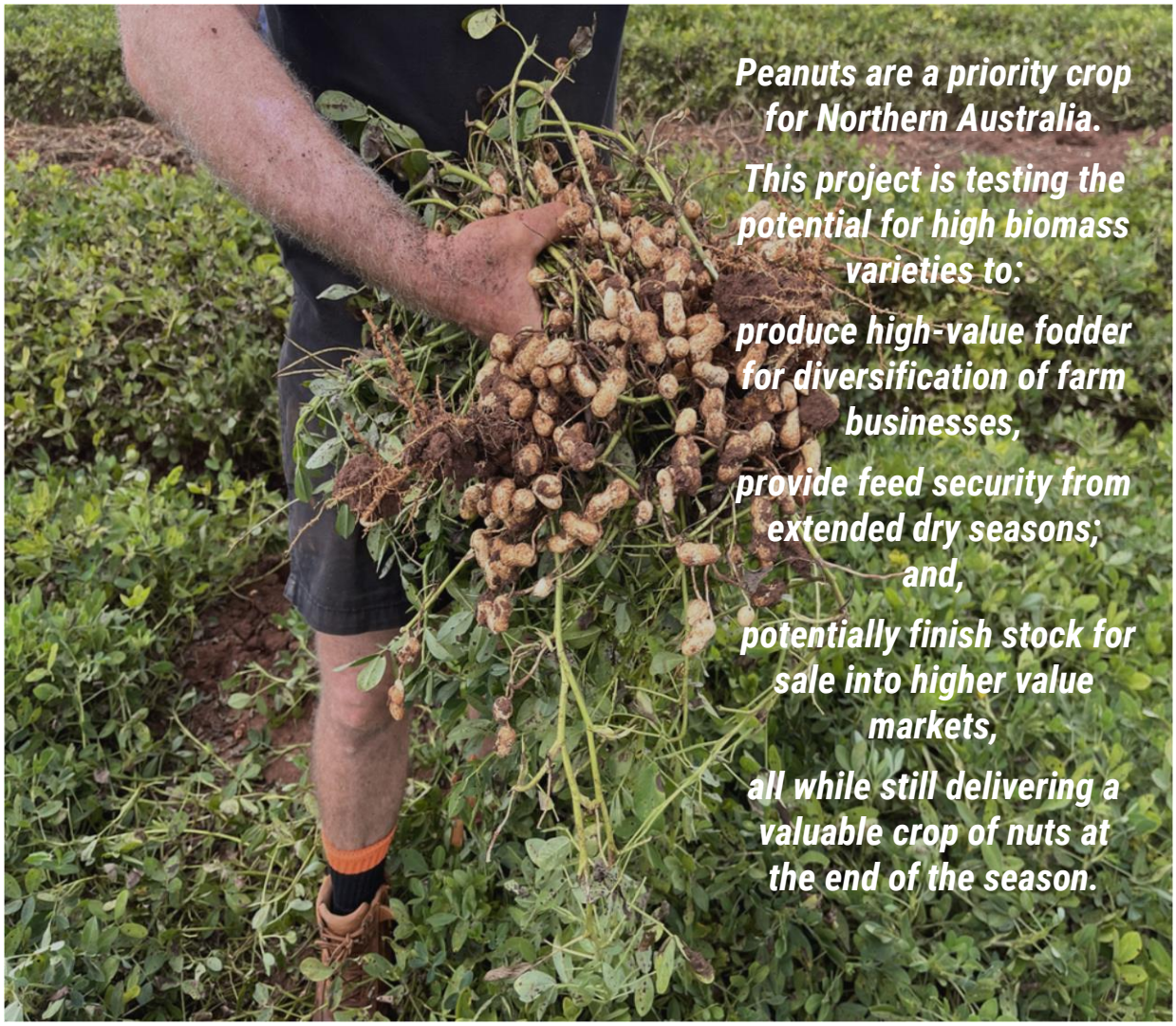
DUAL-PURPOSE PEANUTS: FORAGE AND NUT YIELDS FOR KAIRI, ALLOWAY & HOLT

GRAIN & GRAZE FOR THREE BITES OF THE PROFIT CHERRY



Dual-purpose peanut varieties could hold the key to diversifying grazing operations across Northern Australia by providing both high-value fodder, as well as financial returns from the sale of peanuts.

Preliminary results indicate that peanuts can provide up to 1.5-2.5 tonnes per hectare of dry matter biomass from an in-season cut for cattle fodder, without significantly compromising end-of-season nut yields.

The research project, led by CQUniversity in partnership with the Peanut Farming Services team at Bega Cheese Limited (Bega), and with investment from the CRC for Developing Northern Australia (CRCNA), is testing the concept of dual-purpose peanut production at trials across Queensland and the Northern

Bega GROUP

CRCNA DEVELOPING NORTHERN AUSTRALIA

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RESEARCH WITH IMPACT

KEY POINTS:

- **Biomass is cut at 50% flowering providing revenue through sale of fodder for livestock.**
- **Biomass regrows and nuts set underground as normal.**
- **Nut yields are resilient to biomass removal in early planted crops but are slightly lower in late-planted crops.**
- **Crop biomass can also be sold as fodder after nut harvest.**
- **A cost:benefit analysis of the strategy is underway to ascertain economic returns.**



Trials are underway in Emerald, Home Hill, Georgetown and Tully in Queensland, and Katherine in the NT. Above, an in-season biomass cut at the trial site at Georgetown.

WHAT WE'RE DOING

The 'Grain and Graze North' project is evaluating different peanut varieties and breeding lines from the Bega-GRDC peanut breeding program that are known to produce large volumes of foliage.

They are being tested for their suitability to a range of northern environments, as well as their response to in-season biomass cutting and the consequent impacts on nut yield, nut quality, harvest timing and profitability.

The Grain and Graze North research activities are being conducted in partnership with farmers, Queensland's Department of Agriculture and Fisheries (QDAF), the Northern Territory Department of Industry Tourism and Trade (NT DITT), TRAP Services Tully, the Burdekin Bowen Floodplain Management Advisory Committee (BBIFMAC), the Central Highlands Development Corporation (CHDC), Rockhampton Regional Council, the Central Highlands Cotton Growers and Irrigators Association, RDO Equipment Australia, and AgForce Queensland.

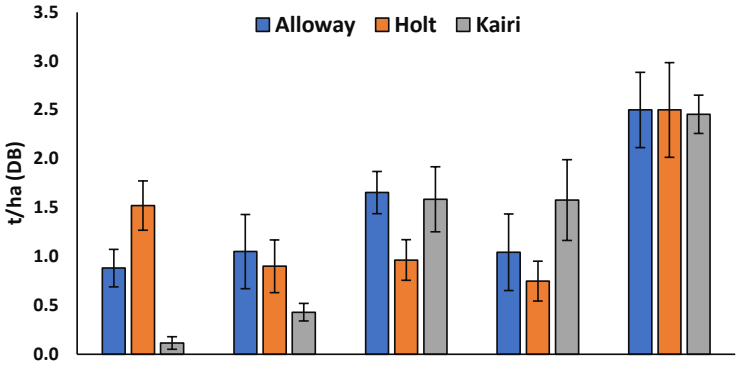
RESULTS SO FAR

Preliminary results indicate that peanuts can provide up to 1.5-2.5 tonnes per hectare of dry matter biomass from a hand-harvested in-season cut for cattle fodder, while still obtaining end-of-season nut yields.

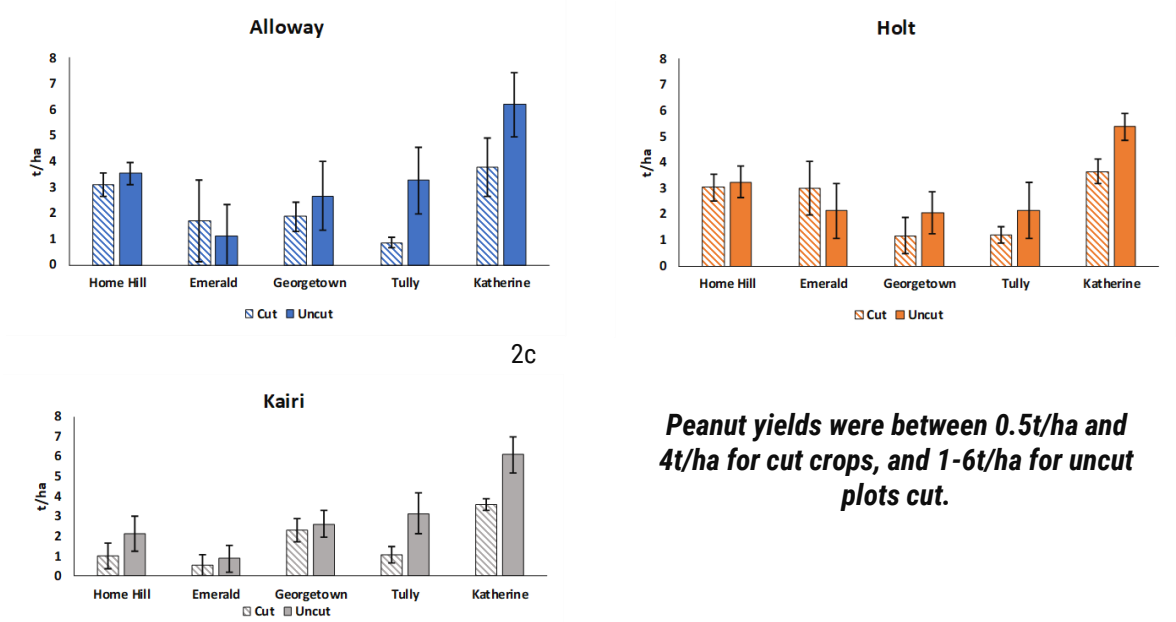
However, the impact on nut yields and the volume of biomass harvested varied from site to site.

Nut yields were generally comparable, except for late season plantings and crops which endured soil moisture stress after the in-season biomass cut occurred.

The peanut plants generally recovered well after the in-season biomass cut, and by season's end they typically produced similar amounts of dry matter as the uncut plots at approximately 2t/ha.



In-season biomass yield (t/ha) removed at 50% flowering in Home Hill, Tully, Georgetown and Emerald, and at 70% canopy cover in Katherine, NT in 2022.



Peanut yields were between 0.5t/ha and 4t/ha for cut crops, and 1-6t/ha for uncut plots cut.

Processed nut yield (t/ha) of three peanut varieties, Alloway, Holt, and Kairi, with and without in-season biomass cutting treatments.



As part of the second year of research activities, peanuts have been sown into a pasture paddock at Emerald to observe animal impacts on the crop and the plant response to grazing.

Growing Dual-Purpose Peanuts in Qld & NT

Inoculation: Group P inoculant such as NoduleN™ Peat.

Seed Rate: 160,000 to 180,000 plants/ha.

Weed Control: Pre-planting: Trifluralin 2.8l/ha. Pre-emergence: Dual Gold 2.0l/ha. Post-emergence: Spinnaker 100 g/ha, Blazer 2.0l/ha, Flame 0.4l/ha.

Paddock Preparation: Well prepared raised or flat seedbeds using 75cm, 90cm, or 100cm row spacings.

Sowing Time: November to December in Qld, and March to April in the NT. Peanuts mature in 18 to 24 weeks depending on temperature and variety.

Irrigation: 2-7ML/ha depending on rainfall and soil type. Peanuts can be irrigated using centre pivots, or flood irrigation.

Pest Control: Heliothis: Methomyl 1.5-2.0l/ha and Vivus/Max 150ml/ha. Jassids: Dimethoate 350 ml/ha.

Disease: Rust and leafspot: Bravo 720 1.8l/ha, Miravus 430SC 0.44l/ha, Amistar Xtra 0.75l/ha.

Soil Types: Well-drained soils including sandy or silty loams or friable clay loam.

Fertilizer: Depending on soil tests, typical nutrition is: Phosphorus as triple super phosphate 100-300kg/ha; Potassium (Muriate of Potash) up to 200kg/ha; Calcium 0.5-1t/ha (natural gypsum) at flowering; Boron 4kg/ha (Solubor foliar spray); trace elements (foliar spray) up to 4kg/ha of Zinc Sulphate, Copper Sulphate, Magnesium Sulphate and Manganese Sulphate; Sodium Molybdate 2-400g/ha. Crops may also need Sodium Molybdate up to 200-400g/ha.





Above: trial site at Emerald under channel irrigation; right: trial site at Katherine sowing peanuts with eight-row planter.

Harvest

Hay: Mechanised in-season hay harvesting has yet to be tested. The trial will assess the use of a rotary mower or oscillating sickle bar. Once cut the peanut hay can be windrowed for drying using any traditional system such as an eight-wheel V rake. Once dried to below 14% moisture, peanut hay will be baled using standard baling equipment, including square and round balers.

There are potentially two harvest points for peanut hay: a first cut at 50% flowering and second cut hay after threshing.

Peanuts: A peanut digger is used to dig and invert the peanut plants so that the peanuts are exposed to the air for drying. The peanuts are separated from the plant using a peanut thresher when the moisture is between 10% ad 16%, normally 4-10 days after digging.

MORE INFORMATION

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