DEVELOPING NORTHERN AUSTRALIA

Dual-Purpose Peanuts

Forage & nut yields for Alloway and Kairi

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.

Peanuts have been identified as a priority crop for expanded production in Northern Australia for their suitability to climate and soil types.

The Grain & Graze North research project led by CQUniversity, in partnership with the Peanut Farming Services team at the Bega Group, and principal co-investment from the CRC for Developing Northern Australia (CRCNA), is testing the concept of dual-purpose peanut production in trials across Queensland and the Northern Territory.



Key points:

- Biomass is cut at flowering stage (70% groundcover) providing revenue through sale of fodder for livestock.
- Biomass then regrows and nuts set underground as normal.
- Nut yields not compromised with biomass removal for early planted crop but are slightly lower for late planted crops.
- Crop biomass can also be sold as fodder after nut harvest.
- Cost: benefit of the strategy is being analysed to ascertain the economic benefits of fodder harvesting.

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Research objectives

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 (at flowering when 70% canopy cover occurs) biomass cutting and the consequent impacts on nut yield, nut quality and harvest timing.

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



Results

Preliminary results indicate that peanuts can provide up to 1- 2.7 ton per hectare of dry matter biomass from an in-season cut providing cattle fodder without significantly compromising end of season nut yields.

The impact on yields and the volume of biomass harvested varied from site to site.

Nut yields were comparable in plots that were cut for hay, but the yield loss was only noted where late season planting, and soil moisture stress occurred after the in-season biomass cut occurred.

The peanut plants recovered well after the in-season biomass cut, and they typically produced similar amounts of dry matter as the uncut plots at the end of the season of approximately 2t/ha.

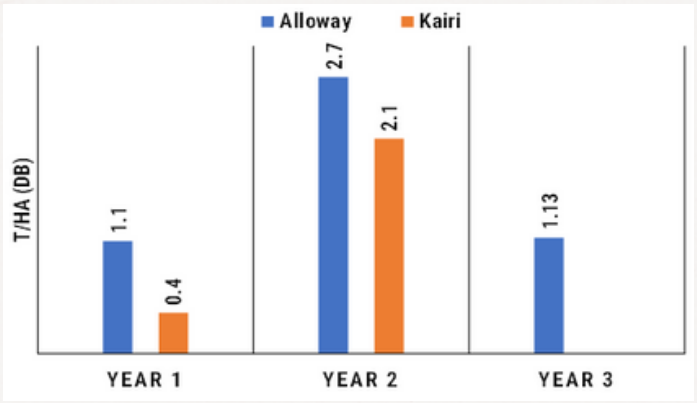


Figure 1: Potential in-season hay yield (t/ha) measured through biomass removal at Emerald over three years.

Results cont.



Peanut hay cut and baled at Emerald containing 23% protein and 71.8% fibre.

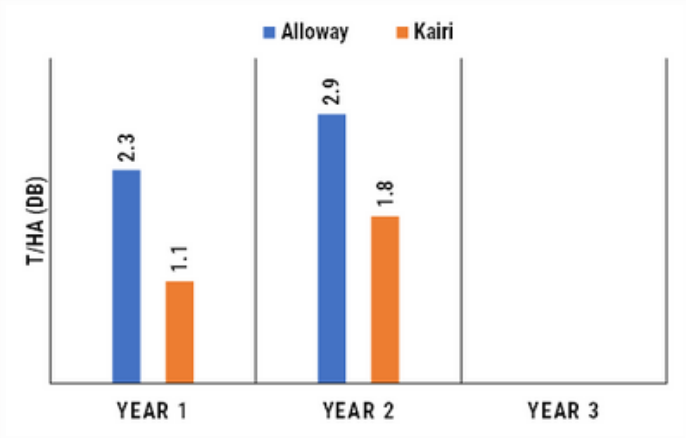


Figure 2: Potential after harvest hay yield (t/ha) measured through biomass removal at Emerald over two years. Year three in progress.

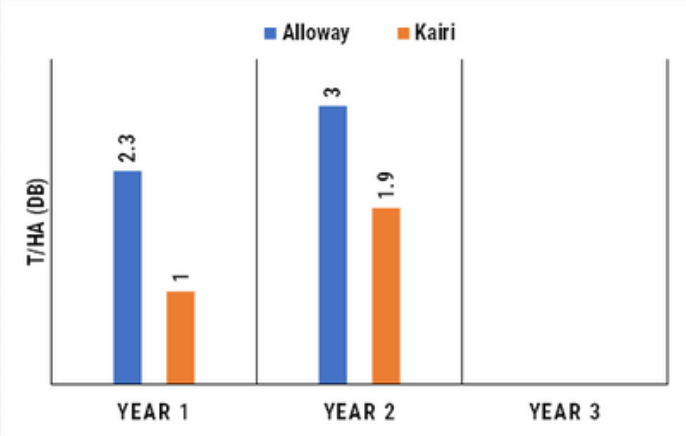


Figure 3: Peanut in shell yield (t/ha) over two years. Year three in progress.

Growing Peanuts

Inoculation: Group P inoculant such as NoduleNTM Peat.

Plant density: 160,000 to 180,000 plants / ha. Seed rate varies with seed size and is about 120 kg/ha.

Weed control: Pre-planting: Trifluralin 2.8 L/ha, Pre-emergence: Dual Gold 2.0 L/ha, Post-emergence: Spinnaker 100 grams/ha, Blazer 2.0 L/ha, Flame 0.4 L/ha.

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

Sowing time: November to December, peanuts will mature in around 18 to 24 weeks depending on temperature and variety.

Irrigation: Peanut crops require 2-6 ML/ha of irrigation depending on rainfall and soil type. Peanuts can be irrigated using Center Pivots, or flood irrigation.

Pest Control: Heliothis, Methomyl 1.5 – 2.0 L/ha and Vivus/Max 150 ml/ha). Jassids, Dimethoate 350 mls/ha.

Disease control: Rust & Leafspot, Bravo 720 1.8L L/ha, Folicur 0.44 L / ha, Amistar Xtra 0.75 L/ ha.

Soil types: Well-drained soils. Sandy loam, silty loam, friable clay loam.

Fertilizer: Phosphorus 100-300 kg/ha, Potassium (Muriate of Potash) 200 kg/ha, Calcium 0.5-1 t/ha (Natural Gypsum) applied at flowering, Boron 5 kg/ha (Solubor Foliar Spray), Trace Elements (Foliar Spray) up to 4kg/ha of Zinc Sulphate, Copper Sulphate, Magnesium Sulphate and Manganese Sulphate. Sodium Molybdate 200- 400 grams/ha.

Harvest

Peanut hay: Mechanised in-season hay harvest was completed successfully in 2024 using a disc forage mower.

Once cut the peanut hay was windrowed for drying with a traditional rotary rake. When moisture was below 14%, peanut hay was square bailed using with a traditional small square hay bailer.

There are two harvest points for peanut hay: a first cut at 75 -80% ground cover and a 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% and 16%, normally 4-10 days after digging.

Peanuts are a priority crop for Northern Australia.
High biomass varieties have potential as high-value fodder crops, supporting diversification of farm businesses, providing feed security from extended dry seasons and finishing of stock for sale into higher value markets -
all while still delivering a valuable crop of nuts at the end of the season.



Planting peanuts with John Deere eight-row precision planter at the Emerald trial site 2024.



Cutting peanut hay with a Newholland 617 disc forage mower at the Emerald trial site 2024.



Small peanut digger at the Tully site 2024.

More Information

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