

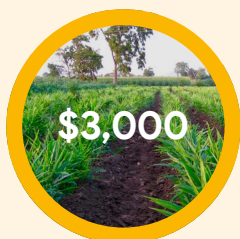
January - March 2019



AgriFutures™ Industry update



4
Current
projects



\$3,000
Invested
in RD&E
January -
March 2019



\$505,969
Forecast
investment
from 1 January
2019 onwards

Upcoming events

14 Jun 2020 Nuffield Scholarship applications close

4 July Australian Ginger Industry Association Field Day

AgriFutures™ Ginger Advisory Panel

- Nicole Christolodou (Chair)
- Ric Stevens
- Shane Templeton
- Scott Kirkwood
- Dr Mike Smith
- Jason Keating
- John Smith (AgriFutures Australia General Manager, Research)

Staff update

John Smith has commenced as General Manager, Research and will continue to backfill Manager, Research (Rice, Ginger, Export Fodder) until the role is filled.

See the AgriFutures Australia website agrifutures.com.au/our-people to view the organisation chart.



John Smith - General Manager, Research

Project spotlight: Site-specific weed control for ginger cropping systems

Project ID: PRJ-011627

Principal investigator: Michael Walsh

Research organisation: The University of Sydney

This project addresses the challenges of site-specific weed control through:

1. Weed detection and recognition
2. Site-specific delivery
3. Investigation of alternative control technologies.

The detection of weeds using machine learning algorithms requires thousands of training images to develop a consistent and accurate detection rate. Just like training a weed scientists, which requires extensive study and diverse observations in different environments, machine learning algorithms also need diversity in training. Images for the dataset will be collected, from growers across the region, during the four-month critical weed free period. This method will help capture differences in soil surface, sunlight, shadows and plant characteristics. Once

collected the images will be used to develop and compare performance of different machine learning detection algorithms, ensuring optimum accuracy and repeatability. These will continue to be refined with the addition of more images throughout the project. Once a weed has been identified and located, the control option (either herbicide or an alternative control) needs to be selectively applied directly to the weed. Part two will design and test an effective delivery mechanism for weed control treatments. A range of site-specific delivery options will be evaluated including a delta arm, three-axis gantry system and a robotic arm. and subsequently, a full scale, test-stand mounted unit. Parts one and two of the project will be integrated on a commercially available autonomous platform for field tests. The third part of the project investigates alternative methods for weed control in ginger (e.g. lasers and electrical weeding). These preliminary evaluations will define alternate weed control technologies suitable for autonomous, site-specific use.

Contracting projects

| Project ID | Project Name | Start | Finish | Principal Investigator | Research Organisation |
|------------|---|-----------|-----------|------------------------|-------------------------------------|
| PRJ-011849 | Chemical Minor Use Permit Research | 28/8/2019 | 28/7/2022 | Nicholls, Zane | QDAF |
| PRJ-011522 | Ginger Ninja: Automating disease detection in seed ginger stock | 28/7/2019 | 18/6/2020 | Dunbabin, Matthew | Queensland University of Technology |
| PRJ-011627 | Site-specific weed control for ginger cropping systems | 28/7/2019 | 31/7/2022 | Walsh, Michael | The University of Sydney |

Current projects

| Project ID | Project Name | Start | Finish | Principal Investigator | Research Organisation |
|------------|---|------------|------------|------------------------|----------------------------------|
| PRJ-008308 | Improved tissue culture production of ginger clean planting material | 30/11/2018 | 30/5/2019 | Sharon Hamill | QDAF |
| PRJ-010755 | Ginger Development and Extension | 1/7/2018 | 31/07/2019 | Zane Nicholls | QDAF |
| PRJ-011612 | Improving ginger to future proof the industry against pests and disease | 22/11/2017 | 29/11/2019 | David Lee | University of the Sunshine Coast |
| PRJ-010862 | Review of the Biosecurity Plan for the Ginger Industry | 1/6/2014 | 31/03/2023 | Rodney Turner | Plant Health Australia Ltd |

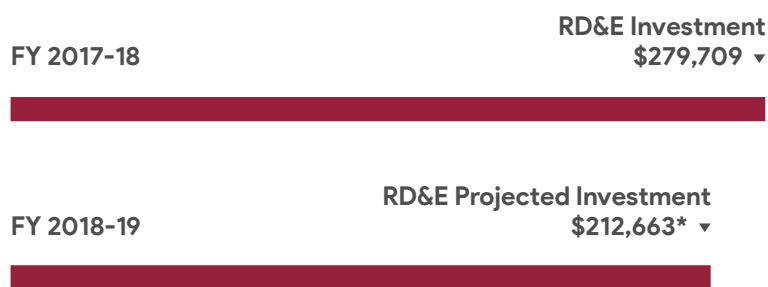
Ginger levy



Australian primary industries that choose to invest in the levies system prescribe the amount of levy or charge applied to a commodity under the Primary Industries (Customs) Charges Act 1999, Primary Industries (Excise) Levies Act 1999, National Residue Survey (Customs) Levy Act 1998 and the National Residue Survey (Excise) Levy Act 1998.

Levy and charge revenue can be directed to biosecurity preparedness and emergency plant pest and animal disease responses, residue testing, marketing and research and development. It is the decision of a primary

Investment



* Accurate as at 1 February 2019 and subject to change.

industry to determine the proportion of how a levy or charge is directed to each of these activities.

AgriFutures Australia receives the Research & Development levy allocation to invest in line with the industry objectives of the Five Year Research & Development Plan. Up to half of program expenditure, including R&D expenditure, is matched by the Australian Government at up to 0.5% of industry GVP. The graphs below represent the levy breakdown and the annual Program investment inclusive of levy, government and any third party contributions.

The Levy is collected and distributed via the Department of Agriculture and Water Resources. For more information, visit the DAWR website.