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**RD&E
investment
April-June
2019**



**RD&E
investment
2018/19**



**RD&E
investment
committed
from 1 July
2019**

Upcoming events

12 Aug

AgriFutures™ Honey Bee and Pollination Program Preliminary Research Proposal Open Call (opens)

31 Aug

Australian Rural Leadership Program applications close

11 Sept

Rural Women's Award Gala Dinner, Canberra ACT

28 Oct

AgriFutures™ Honey Bee and Pollination Advisory Panel meeting, WA

**18-19
Feb**

evoke^{AG}. 2020, Melbourne VIC

Advisory Panel

- Dr Doug Somerville (Chair)
- Danny Le Feuvre
- Sam Malfroy
- Dr Diana Leemon
- Ashley Zamek
- Prof Saul Cunningham
- James Kershaw
- Annelies McGaw (AgriFutures Australia Manager, Research)

Final reports and updates

Recent AgriFutures™ Honey Bee and Pollination Program final reports

- Australian Propolis Market and Production Potential
- Review of the Honey Bee Industry Levies and Fees
- Review of Chemistry Associated with Honey
- AgriFutures™ Honey Bee and Pollination 2019 Snapshot

To view publications and updates visit

agrifutures.com.au/honey-bee-pollination

Project spotlight: Probiotic development for bees: analysing gut bacteria in healthy bees

Project ID: PRJ-010825

Principal investigator: Adjunct Associate Professor Murali Nayudu

Research Organisation: University of Canberra

Preliminary trials have shown there to be a direct correlation between gut bacterial numbers in honeybees and the overall health of hives suggesting high levels of gut bacteria in honeybees could mean healthier and more productive hives. While further testing needs to be carried out, the new methodology shows promise in preventing and minimising the impact of chalkbrood, a fungal disease that affects hive health and honey yields.

These preliminary trial results build on previous research that found bacteria could be reintroduced into the gut of diseased bees through probiotics and show promise for the development a probiotic product from Australian bee gut bacteria for the apiary industry.

As a first step to assess the use of probiotics in bees, the research team needed to obtain more data on the natural variation of bee gut bacteria numbers in healthy bees over the four seasons. They set up two apiaries near Bega and Tharwa in New South Wales, with six hives in total, and consistently monitored these healthy hives for bacterial numbers.

Associate Professor Nayudu and the team have developed specific methodologies for this project, which involves sampling multiple bees from each hive per time point, isolating bacteria from the bee gut and conducting analysing bacterial numbers for individual bees. From this information, the health state of the bee hive can be determined.

This particular method has assisted in determining whether bees had healthy bacterial numbers (10E6 per gram) or low (<10E5) bacterial numbers, with the latter seen in bees from diseased chalkbrood-infected hives. Sampling the gut bacteria of bees from a higher number of hives can determine the overall health of an apiary, helping to predicting disease before any visual symptoms appear.

With more sampling to be done over winter, the recent, positive results mean that the research team will now begin the second phase of the project ahead of time; experiments involving chalkbrood control using probiotics. The research team are currently gathering a large number of chalkbrood-infected hives to set up different probiotic treatment groups, with the experiments to hopefully commence this spring.

Read more agrifutures.com.au/honey-bee-pollination

Current projects

Project ID	Project Name	Finish	Principal Investigator	Research Organisation
PRJ-009904	Selection and development of Australian hygienic honey bee lines	14/02/2019	Gerdts, Jody	Bee Scientifics
PRJ-011742	Development of the Honey Bee and Pollination Program 2019-2024 five year RD&E plan	1/06/2019	Spicer, Murray	Edward Murray Spicer
PRJ-009186	Active Australian Leptospermum honey: new sources and their bioactivity	28/10/2019	Harry, Elizabeth	University of Technology, Sydney
PRJ-011925	Strategic industry workshop - Improving floral access for beekeepers	13/12/2019	Paradice, Sarah	Australian Honey Bee Industry Council
PRJ-010818	Improving the health of hives used in pollination	15/07/2020	Hogendoorn, Katja	The University of Adelaide
PRJ-010825	Probiotic development for bees: analysing gut bacteria in healthy bees	29/02/2020	Nayudu, Murali	University Of Canberra
PRJ-011704	Facilitation of Honey Bee and Pollination RD&E five year plan workshop	31/05/2019	Cameron, John	Independent Consultants Australia
PRJ-010226	Improving biosecurity resources and better understanding bee health in Australia	30/07/2019	Turner, Rodney	Plant Health Australia Limited
PRJ-010313	Development of honeybee products from a biodiversity hotspot	30/09/2019	Hammer, Kate	University of Western Australia
PRJ-010257	Progressing implementation of genetic selection in Australian honey bees	9/10/2019	Banks, Robert	University of New England
PRJ-011385	Honey bee and pollination program communications 2018-2020	29/05/2020	Pirie, Justine	Cox Inall Communications
PRJ-010815	Investigating factors that influence chalkbrood outbreaks in Australia	30/11/2020	Roberts, John	CSIRO Ecosystem Sciences
PRJ-010879	Increasing the value of Australian honey as a health food	1/08/2021	Cokcetin, Nural	University of Technology, Sydney
PRJ-010987	Participants agreement - CRC for honey bee products	31/12/2021	Barbour (CRC), Liz	CRC for Honey Bee Products Limited

Emerging leaders in ag

Applications are now open for the Australian Rural Leadership Program (ARLP). The ARLP is a 15-month leadership development program that takes place over five sessions across Australia and Vietnam.

Over 30 \$50,000 scholarships are available for people working in or wanting to contribute to the development of rural, regional and remote Australia. AgriFutures Australia is pleased

to sponsor a ARLP recipient in Course 27 and welcomes applications from the honey bee and pollination industry. If you're interested in putting forward an application please speak with Annelies (annelies.mcgaw@agrifutures.com.au).

Read more about ARLP agrifutures.com.au/ARLP

Apply now rural-leaders.org.au