Understanding Ants in Berry Fields: Practical Advice for Growers

Abby Davis, Lena Alice Schmidt, Pia Malm, Jelena Preradovic and Romina Rader, School of Environmental and Rural Sciences, University of New England;

Jessie Moyses & Ayesha Tulloch, School of Biology and Environmental Science, Queensland University of Technology; Cameron Spurr & Raylea Rowbottom, seedPurity;

Marie-France Courtois, Brad Hocking & Bar Shermeister, Costa Group Exchange

MT22007: Expansion of flies as berry crop pollinators

- Ants can provide unexpected benefits, including aiding pollination when other pollinators are limited, removing excess nectar from flowers, and deterring certain pests
- Ants can also cause problems by protecting damaging sap-sucking insects and disrupting irrigation systems or crop covers through their nesting behaviours

Ants are among the most common and abundant insects found around the world. With more than 13,000 known species, ants thrive in a wide range of environments including agricultural landscapes. Ants are very diverse functionally and can be predators, scavengers, seed dispersers, and nutrient cyclers. Although ants are often seen as pests – nesting in plant rows, scavenging fallen berries, or biting unprotected hands – they also play important roles in berry farms, particularly when they interact with flowers.

Ants are **closely related to bees**, as both belong to the insect order ***Hymenoptera***. This means that ants and bees share similar traits, like a strong attraction to sugary flower nectar. While ants lack wings in their worker stage and do not fly like bees, they regularly visit flowers in search of food. Typical foods sought by ants include nectar, pollen, seeds, insects, fungi, and fruit. However, their diet varies between species, and because most ants cannot be reliably identified by sight alone, it can be difficult to determine what different ants are feeding on in the field.

When ants are visiting flowers in search of food, they can transfer pollen and influence pollination outcomes depending on the berry crop, flower structure, and number and types of other pollinators visiting flowers. During peak bloom, ants may provide unexpected benefits for fruit set and quality, challenging the common perception that their presence is mostly harmful.

Acknowledging ants as part-time pollinators

Ants can support pollination under the right conditions, especially in crops with flowers that produce both pollen and seed in the same flower. A recent study on a commercial red raspberry farm near Coffs Harbour, NSW, investigated whether ants contribute to pollination. Visitation surveys showed that when ants were seen on raspberry plants, they were the most frequent visitors to raspberry flowers, outnumbering European honey bees, native stingless bees, and flies.

Seven different ant species were observed visiting raspberry flowers. Of these, the three most common species were tested and found to carry raspberry pollen on their bodies. While the remaining four

species were not assessed, they may also contribute to pollen movement. Flowers visited by ants produced heavier, higher-quality fruit compared to flowers where all insects were excluded, suggesting ants can positively impact fruit development.

Although the heaviest fruits still came from open-pollinated flowers visited by a mix of insect pollinators, these findings show that ants can be effective supplementary pollinators. Their activity may also help extend the pollination window of berry crops, as ants can visit flowers when weather is unfavourable for flying insects. More research is underway to understand possible drawbacks – like whether ants interfere with other pollinators – but these early results suggest ants could play a helpful role in pollination and farm productivity if managed as part of a broader, inclusive approach to supporting pollinators in berry systems.

When Ants Help on the Farm

Ants may not be traditional pollinators like bees or flies, but they can act as **supplementary pollinators** in cropping systems where other insects are scarce, flowers are less attractive to bees, and when flying insects are less active due to weather conditions. In these cases, ants visiting flowers – even while simply foraging – can help transfer pollen within or between flowers, supplementing pollination when other options are limited.

Ants may also act as **floral bouncers**, influencing which pollinators stay on flowers and which leave. Studies from raspberry and blackberry farms on the NSW Mid North Coast found that when honey bees or native stingless bees landed on flowers already occupied by ants, the bees often left quickly, while flies tended to stay longer. Interestingly, the ants rarely left. These interactions suggest that ants may affect how long other pollinators spend on flowers. While this study did not directly test how ants affect pollination, other research has found that when ants are present on flowers, flying pollinators like bees tend to move between flowers more often, potentially increasing overall flower visits and improving pollination.

Ants also function as **nectar cleaners** (Figure 1). Crops like red raspberry produce abundant nectar – often more than pollinators consume. If this excess nectar builds up, it can attract pests or create ideal conditions for fungal pathogens. Ants are attracted to sugar and will frequently forage on flower nectar, clearing excess nectar and consequently improving flower health and reducing disease pressure during bloom.

Finally, ants can be **natural enemies of pests**. Many ant species are territorial and will patrol the area around their nests, protecting nearby plants from pests like caterpillars, aphids, beetle larvae, and fruit fly maggots. Some ants actively attack and remove pests, while others simply disrupt pest activity through their constant movement. On berry farms, ants have even been seen guarding developing fruit, reducing insect damage and potentially lowering the need for chemical sprays.

Together, these roles of ants as supplementary pollinators, nectar cleaners and natural enemies highlight how they can be valuable allies to have around the farm in supporting pollination, reducing disease risks, and protecting crops.

The Dark Side of Ant Activity

While ants can provide benefits to farms, they can also cause a few headaches, especially when their behaviour starts interfering with pest management or farm infrastructure. In some cases, ants can be **troublemakers by "farming" pests**. Certain ant species form mutualistic relationships with sap-sucking bugs like aphids, mealybugs, and scale. These pests produce honeydew, a sugary substance that ants love. In return for this sweet reward, ants protect the pests from predators, allowing infestations to persist longer.

Not all ants protect pests like aphids, and we still do not know how many ant species do this kind of "farming". However, if you spot both ants and sap-sucking bugs on your plants, try disturbing the bugs and if ants quickly rush in, it is a good sign they are "farming" the pests. Not all ant species do this, but those that do can make pest control more difficult.

Finally, ants can act like **tiny construction workers**, sometimes in ways that cause infrastructure damage. In search of water, they may nest near or inside irrigation systems, bringing in soil and debris that can clog drip lines or emitters. These clogs often go unnoticed until plants begin to show water stress. Ants also build nests under plastic mulch, weed matting, or crop covers, which can lift or tear these materials and could create ongoing maintenance issues in polytunnels or field rows.

Understanding both the pros and cons of ants on farms is essential for deciding how to manage them as part of your broader crop management strategy.

Ants feeding on raspberry nectar in a commercial berry farm in the Mid North Coast of New South Wales
Photo credit: Abby E. Davis

Weighing Insecticide Use for Ant Management

If you are considering using insecticides to control ants, it is important to remember that ants are closely related to bees and many of the chemicals that kill ants can also harm bee pollinators. Some pesticides are systemic, meaning they are absorbed by the plant and can affect any insect that feeds on it, including beneficial pollinators foraging for pollen and nectar on flowers.

Given the potential risks to beneficial pollinators, it is important to approach ant control with care. While insecticides can be effective, their unintended effects on non-target insects may outweigh the benefits.

Safer alternatives for managing ants in fields include:

1. **Monitoring ant behaviour first:** There are many different species of ants that have different behaviours. Observe whether they are farming pests or simply foraging harmlessly.
2. **Target sap-sucking pests:** Reduce aphid, mealybug, or scale populations with gentle, bee-safe methods like horticultural oils, soaps, or targeted biological control. Without these pests to farm, ants are likely to leave on their own or simply revert to feeding on sugary flower nectar.
3. **Disrupt ant trails:** Regularly disturb ant trails or nests with water or a mild soap solution, discouraging the ants from nesting in the problem location.
4. **Use bait with caution:** If bait is needed, make sure they are located far away from honey bee hives.

Practical Implications of Ants In Your Fields

Ants are a natural part of farm ecosystems and, for better or worse, they are here to stay. While it is nearly impossible to eliminate ants entirely from berry orchards or other crop systems, understanding their behaviour can help growers make more informed management decisions.

Ants can offer surprising benefits, such as helping with pollination when other pollinators are scarce, cleaning excess nectar from flowers, and even deterring some pest insects. However, ants can also cause issues if they protect harmful sap-sucking pests and damage irrigation systems or crop covers through their nesting activity.

Since different ant species can be both helpful and harmful, it is important to consider both the pros and cons of having them in your fields. When possible, aim to reduce the impact of problematic ants while making room for the helpful ones. With a balanced strategy, ants can become one more tool in your integrated farm system rather than just another pest to control.

Acknowledgements

This project has been funded by Hort Innovation (MT22007), using the raspberry, blackberry, blueberry and vegetable research and development levies, and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

Further funding was awarded as part of Australian Research Council Future Fellowships to Romina Rader (FT210100851) and Ayesha Tulloch (FT210100655). The research is additionally supported by Future Food Systems CRC, Holsworth Research Endowment, Jill Landsberg Applied Ecology Award and the Conservation and Wildlife Research Trust.

We thank the berry growers who allowed us to use their crops for this research. We acknowledge the Gumbaynggirr people as the traditional owners of the land this research was conducted on and pay respect to Gumbaynggirr Elders past, present and future.

Hort Innovation

Future Food Systems

seed purity

2025 ANNUAL GENERAL MEETINGS

SCAN QR CODE FOR EVENT DETAILS

bit.ly/BA-Event-List

All meetings are being held online this year.

Please check the latest event details at the industry Event portal bit.ly/BA-Event-List

Strawberries Australia Inc

Wednesday 15 October

2pm-4pm AEST (Queensland)
3pm-5pm AEDT (NSW, Vic, ACT, Tas)
2.30pm-4.30pm ACDT (Adelaide)
12pm-2pm AWST (Perth)

This meeting is only open to members of Strawberries Australia Inc and is not a public meeting.

Please confirm your attendance to receive the meeting link and forward any questions to admin@berries.net.au

Raspberries and Blackberries Australia

Tuesday 21 October

2pm-4pm AEST (Queensland)
3pm-5pm AEDT (NSW, Vic, ACT, Tas)
2.30pm-4.30pm ACDT (Adelaide)
12pm-2pm AWST (Perth)

All RABA Members are invited to join the meeting, but must RSVP by Monday 20 October 2025. Meeting link details will be provided once RSVP has been submitted.

Email any questions and RSVP to admin@berries.net.au

Australian Blueberry Growers' Association

At the time of publication, the date and time for this meeting have not been finalised

Berries Australia

At the time of publication, the date and time for this meeting have not been finalised