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SOILLESS AUSTRALIA

Protected Cropping Australia Industry Trade Magazine

Glasshouse growing in the UK

TOP ADVICE ON LED LIGHTS

Managing humidity under cover

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SINCE 1990

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FRONT COVER

Yellow capsicums are thriving in this UK glasshouse but how buoyant is the fresh produce industry in Britain?

Read the full story on page 17.

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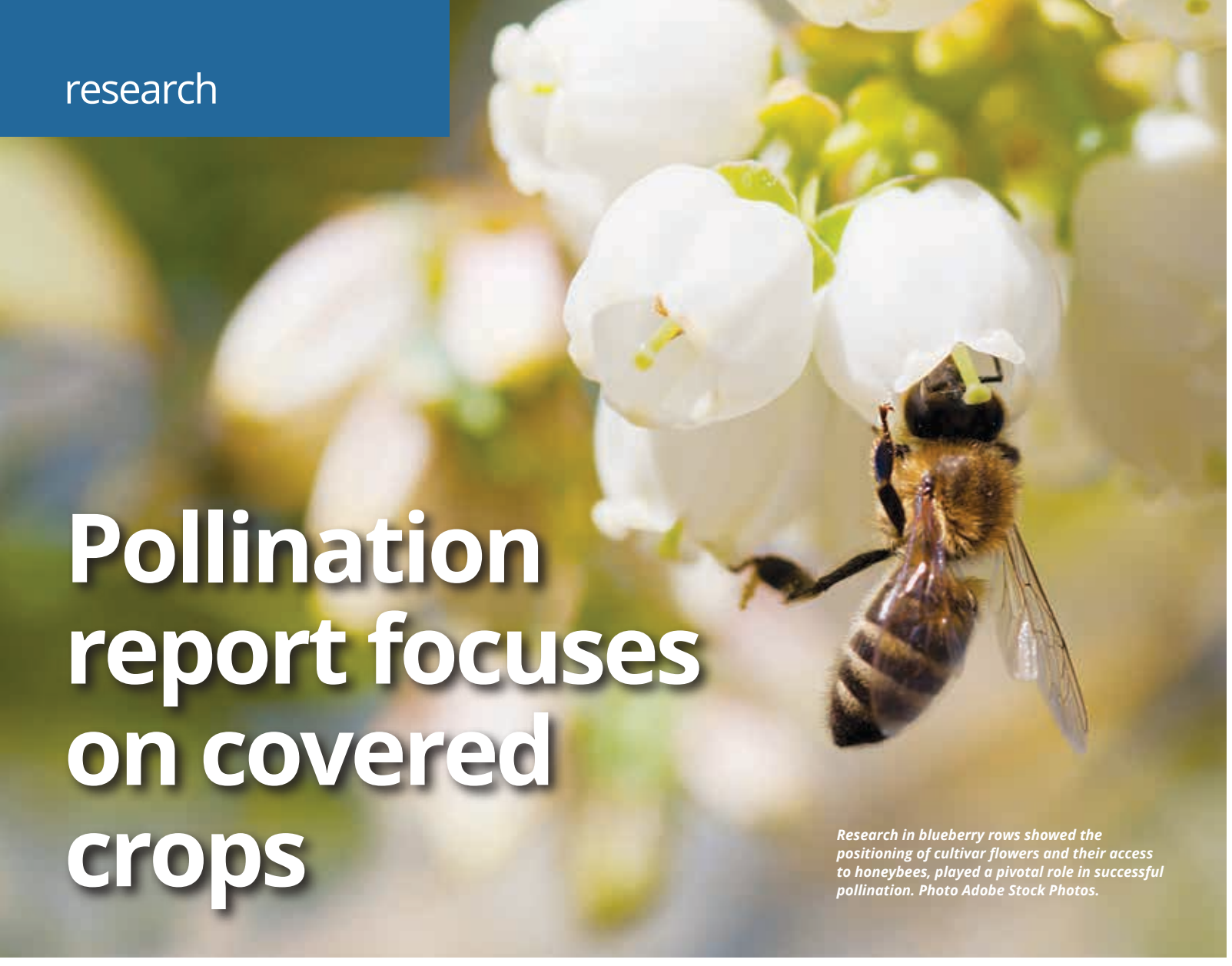
SCAN ME

Pollination report focuses on covered crops



Research in blueberry rows showed the positioning of cultivar flowers and their access to honeybees, played a pivotal role in successful pollination. Photo Adobe Stock Photos.

As Australian horticultural industries increasingly turn to protected cropping to mitigate the impacts of extreme weather, pests, and diseases, understanding their impact on honeybees and pollination is vital. This collaborative research project set out to enhance the quality and yield of fruit and vegetables in protected cropping environments.

The overarching goals of the program included enhancing insect pollinator efficacy by improving honeybee performance under covers, manipulating plant floral and reproductive traits for improved fruit production and quality, optimising the placement of pollen donor plants (pollinisers) to sustain high fruit yield and quality, and advancing innovative methods of mechanical pollination to achieve artificial pollination in the absence of insects.

Funded by Hort Innovation, the project commenced in 2019 and brought together teams from the University of Adelaide, Plant & Food Research, the New South Wales Department of Primary Industries, the University of New England, and the University of Tasmania. The comprehensive findings presented here provide valuable insights into optimising pollination practices and improving overall crop productivity in protected cropping environments.

Looking at apples under cover

Research from apple orchards in the Adelaide Hills has revealed that crop covers have significant effects on bee orientation, activity, and foraging returns. Bees' performance and vigour was improved when covers were held high above the crop. Allowing bees to forage outside, either through open sides or penetrable covers, enhanced hive foraging returns and facilitated hive growth. However, allowing bees to access other floral resources is likely to reduce pollination services in the protected crop, potentially requiring more hives to achieve adequate fruit set.

The combined evidence from molecular, behavioural, and fruit set data highlighted the importance of orchard design under netting. Ideal orchard configurations include limiting row lengths and including simultaneously flowering pollinisers in every seventh row. Unmanaged pollinators (mostly native bees and hoverflies) in orchards were also examined, and shown to benefit when their preferred nesting locations, namely in open soil in headlands and under trees, were managed. Native bees visiting apple flowers proved to be generalists, benefiting from the presence of flowering weeds in the orchard.

The impact of hail netting on pollination was explored in depth in apple orchards across New Zealand and southeast Queensland.

"...STUDIES SUGGEST THAT USING POLYTHENE COVERS INSTEAD OF BIRD-NETTING CAN REDUCE BEE VISITATION..."