

Apiary



Beehive sensors support bushfire recovery and hive health



Photo: SA Tourism Commission

BRENTON DAVIS

TECHNOLOGY: **BeeSTAR sensors**

LOCATION: **All over Kangaroo Island**

ENTERPRISES: **1000 beehives**

Kangaroo Island apiarist Brenton Davis has always kept a close eye on emerging technology, but the 2019-20 bushfires brought a new urgency to innovation.

"We lost 600 hives and 70 per cent of KI's vegetation," Brenton explains.

"Recovery has been slow, nectar production is still way down and the last couple of seasons have been the worst ever."

That's why Brenton joined the Department of Primary Industries and Regions, Kangaroo Island AgTech Demonstration Program to test BeeSTAR in-hive sensors.

The sensors are placed inside the brood chamber of a hive and monitor temperature and humidity, sending real-time data to the cloud.

"Hive temperature should sit at about 35 to 36 degrees Celsius. If it drops below 30°C, that tells me the hive is failing—likely queenless—and I need to act fast."

With approximately 1000 hives spread across more than 20 sites on the island, the technology helps Brenton identify problem hives early and prioritise which sites to visit.

"For example, if I have 60 hives at a site remote site, instead of driving out and checking all 60 hives, I can monitor them from home and if there is a problem, I can pinpoint the few that are in trouble and focus my time where it's needed."

The benefits go beyond productivity. Weak hives can trigger disease spread when other bees steal honey.

"If I can step in before that happens, I reduce risk to the whole apiary," Brenton adds.

Brenton initially installed just four sensors near his main shed so he could monitor them closely.

"So far the benefits are theoretical, but promising. We're planning a larger trial with 60 to 100 monitors across multiple sites."

Brenton has been pleased with the support he has received from BeeSTAR. Originally designed for pallets of four hives, Brenton instead runs rows, and the company worked with him to tailor the setup.

"They're Australian-based and easy to deal with. They actually answer the phone when I call," he says.

Humidity data, while less intuitive, is helping Brenton build long-term insight. With BeeSTAR planning future updates, like pheromone and disease detection, he sees even more potential.

"Remote monitoring is the future of beekeeping."

About the program

The KI AgTech Demonstration Program, funded by the Australian Government Regional Recovery Partnerships program, allowed KI primary producers to road test technologies free of charge on-farm and share their experiences with other producers on the use and benefits of the technologies.

More information:
www.pir.sa.gov.au