

AgriFutures[®]
Plan Bee

Elizabeth Frost
NSW DPI Technical Specialist - Bees

Thank you beekeepers, queen breeders and NSWAA

John Lockwood, Mark Caguioa, Ray Hull, Stephen Targett, Frank Malfroy, Jenny Douglas, Mal Porter, Graham Gregory, Steven Cunial (NSWAA organiser).

Tiffane Bates, John Davies and other Better Bees WA members, NSW queen breeders the Horner family, Casey Cooper, Jamie Baggs, Terry Brown, Vicki Gow, as well as Corinne Jordan (QLD), Trevor Bain (SA), the Stephens family (TAS)

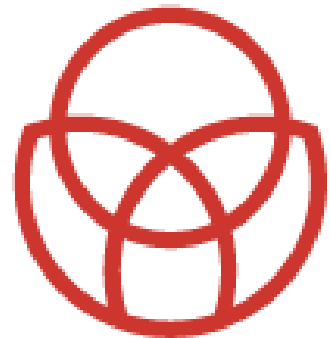
Contractors: Jamie Baggs, Pete Fleming, Kirra Hughes, Jackie Bourke, Mick Rankmore



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Honey Bee Genetic Improvement Program (Plan Bee)

This project is supported by AgriFutures Australia through funding from the Australian Government Department of Agriculture, Water and the Environment as part of its Rural R&D for Profit program, participating research institutions and industry.



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Department of
Primary Industries



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BEECHWORTH
HONEY

Monson's Honey and
Pollination



SOUTH PACIFIC SEEDS
SINCE 1986

Better Bees WA Inc

Commercial beekeepers via
the Wheen Bee Foundation



Australian Government
Department of Agriculture,
Water and the Environment

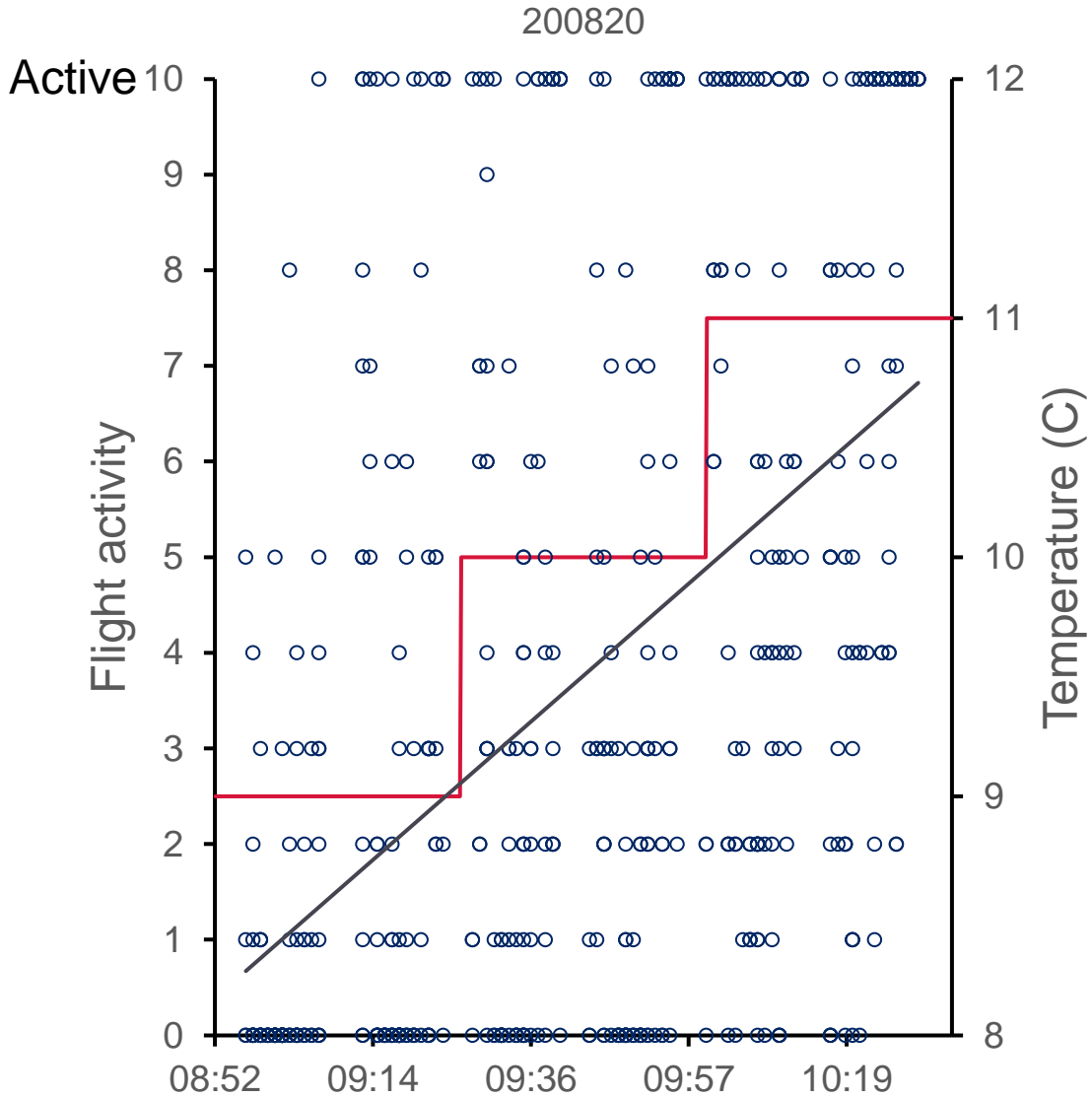
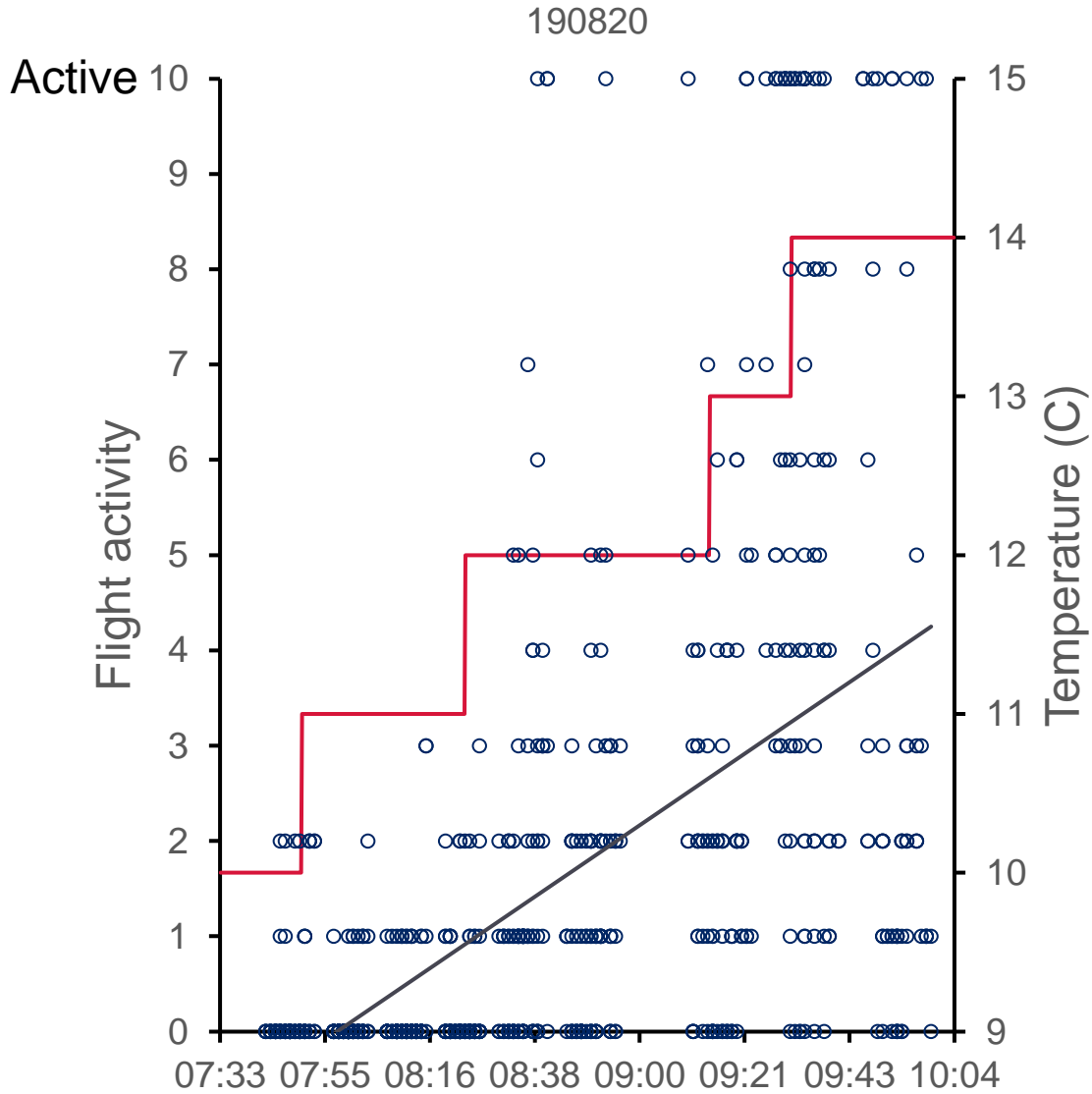
Pollination-related measurements recorded in almonds

- Onset of foraging
- Return forager type
- Hive population
- Pedigree



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ONSET OF FORAGING



NSW DPI Bee Manager – Stanislav (Slavi) Nenov

14 years in TAS Industry for TAS Honey Company, R Stephens Pty Ltd, Daybreak Apiaries + Bulgaria where he managed hives with *Varroa* mite and harsh winter conditions. Queen breeding experience: season with NZ queen breeder David Yanke, breeding his own queens, AI training in Europe and Tocal College.



Beekeeper:		Main floral source:		Date hives moved to apiary:		Dates hives removed from apiary:		
Date:			Apiary name:		Time started:		Time ended:	
Hive ID	Queen Status	Frames of bees	Queen origin	Food stores	Disease	Assessor	Notes	



TRAIT DICTIONARY

Production traits

Honey

- Honey production can be scored from 1 (low/little) to 5 (high/heaps) from a visual assessment or by physically picking up a super and classifying the estimated weight of the super on a scale of 1 (low/light) to 5 (high/heavy)
- Stored honey can be scored to the nearest $\frac{1}{4}$ frame
- Honey production can be measured by weighing in kilograms the amount of honey extracted or removed from the colony
- Colony weight in kilograms can be used as a proxy for honey production.

Plan Bee Workshop (AEST)

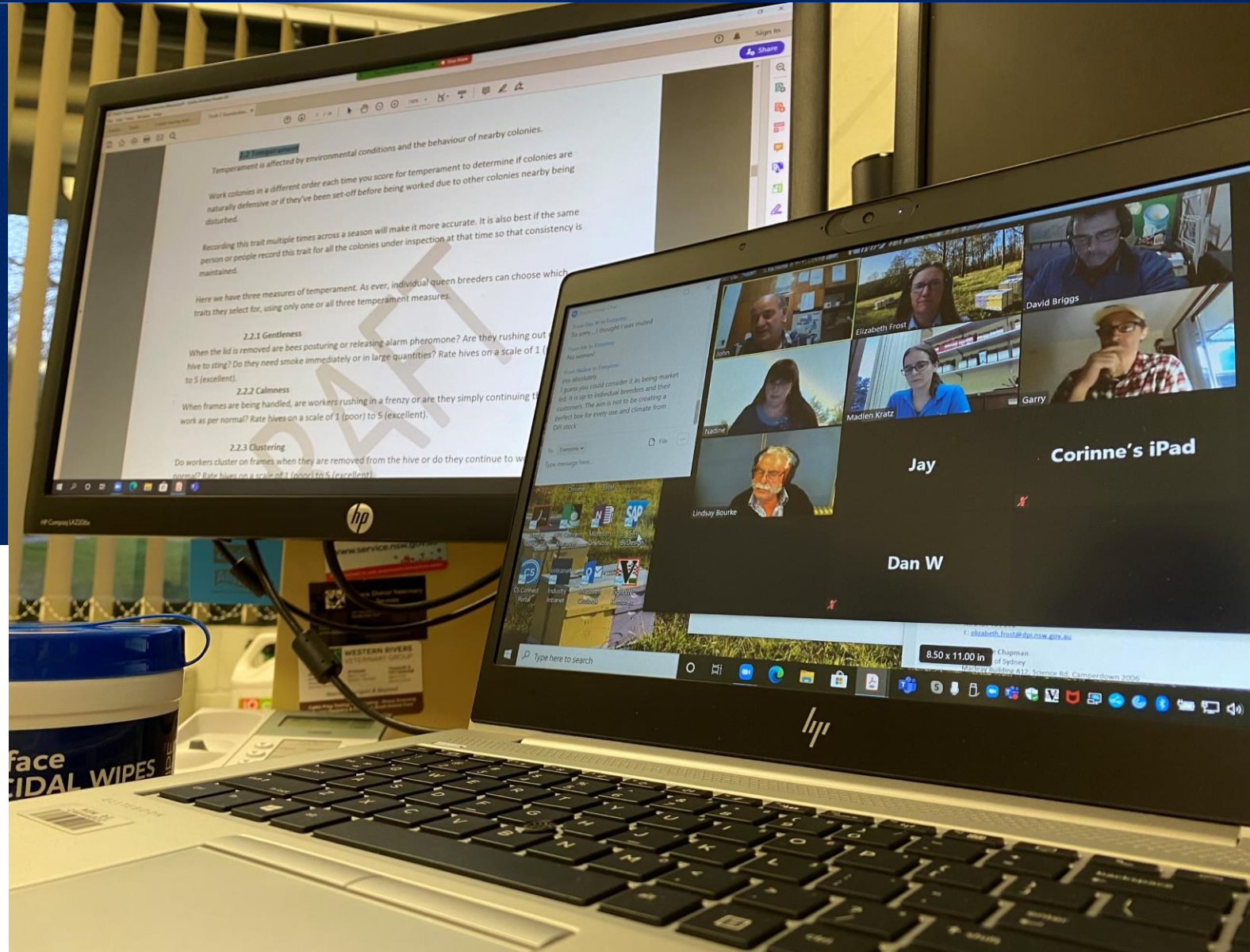
WHO: Queen breeders

WHAT: Plan Bee standardised recording, data collection, breeding objective workshop

WHEN: 22 June, 9am to noon



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Tocal College Honey Extraction & Training Facility



Department of
Primary Industries

JOB OPPORTUNITY

Education Officer Honeybee Coordinator

- Beekeeping training program growth & development
- oversee delivery of Cert III, short courses, traineeships
- brings a high level of expertise and industry experience
- holds a TAE (though not essential)
- Paterson NSW based

WANTED: HONEY SAMPLES

Composition of Australian honey project



AgriFutures™
**Honey Bee
& Pollination**

Analysis at NSW DPI Wagga Wagga Ag Institute of:

- fructose, glucose and sucrose content
- moisture
- electrical conductivity
- free acid
- enzyme activity
- HMF

Samples also used to establish quick test methods using Near Infrared (NIR) technology



Breeding for improved fertility of honey bees

E.A. Frost^{1,2}, N.C. Chapman³, R.G. Banks¹, S. Hermes¹

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² New South Wales Department of Primary Industries, Paterson, NSW, 2421

³ University of Sydney, School of Life and Environmental Sciences, Behaviour Ecology and Evolution Laboratory, Macleay Building A12, Camperdown 2006

Abstract

Honey bee (*Apis mellifera*) colony productivity and fitness is dependent on queen and drone quality, a culmination of the larval rearing environment, sexual selection and beekeeper-driven trait selection and management. Selection for both production and fertility traits of honey bees is not widely practised across commercially managed populations as it is in other livestock species. Scant research has been undertaken on drone and queen phenotypes, reproductive productivity and performance as it relates to selection for fertility traits. The opportunity for increased hive productivity through maximising fertility traits, in tandem with established commercially important colony level traits in honey bees exists globally. In this review, research on the characterisation, heritability, and breeding of known fertility traits of honey bees is discussed and recommendations are given on the most practical candidate traits for selection.

- Weight
- Ovario
- Sperm
- Phero
- Fecun
- Drone

eight
production
volume
viability
aneous



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Professional Beekeepers



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