

The importance of nutrition for honey bee health and colony performance during crop pollination

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There is more to honey bee nutrition
than nutritional quality!



Floral sources of Western Australia

Jarraah

Eucalyptus marginata



Canola

Brassica napus



Clover

Trifolium repens



Marri

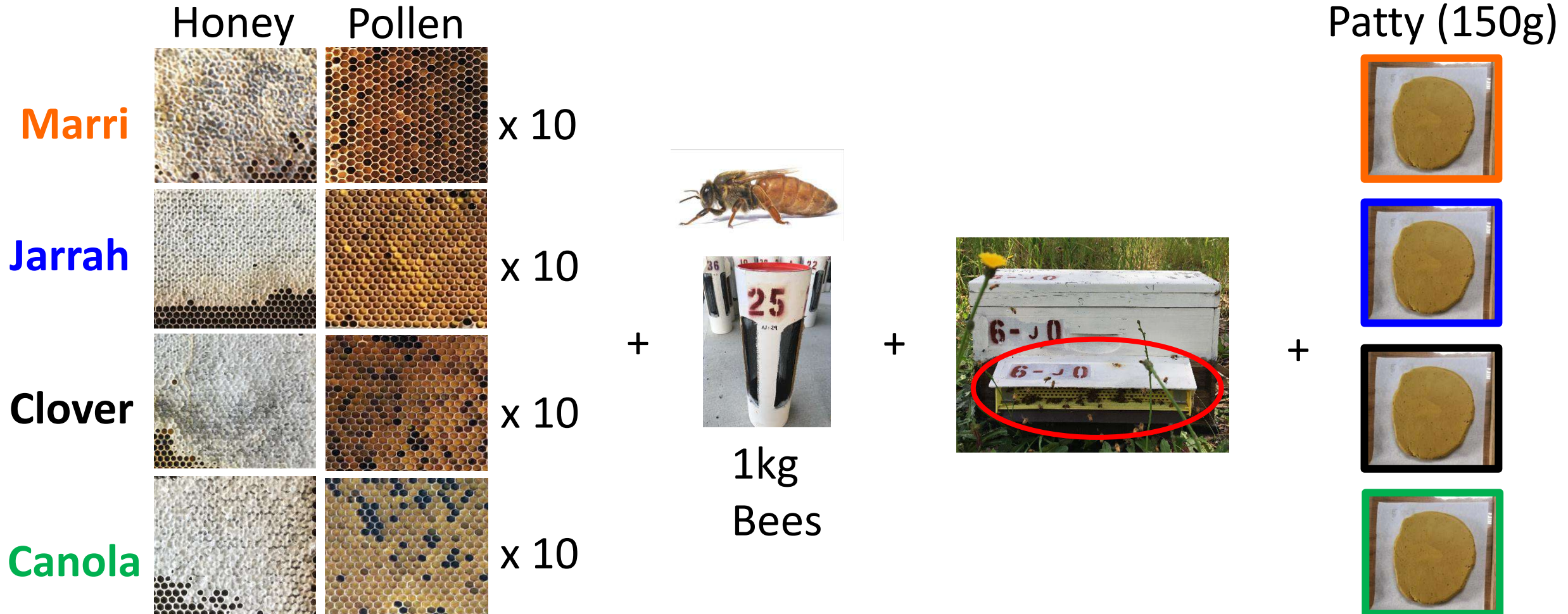
Corymbia calophylla



Flow
on
effects



Colony setup



Experimental timeline



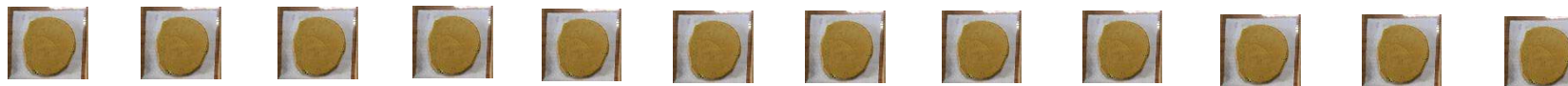
Colony build up



Avocado pollination



Week: 1 2 3 4 5 6 7 8 9 10 11 12



Jarraah

Canola

Clover

Marri



Body composition
(Amino acid content)



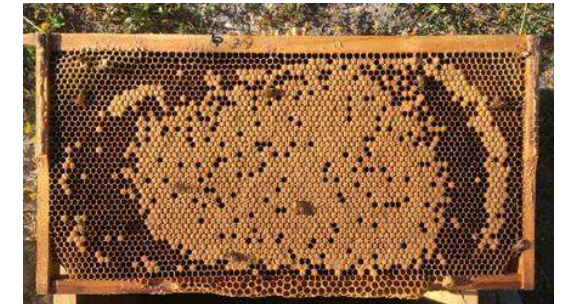
Emerging bees



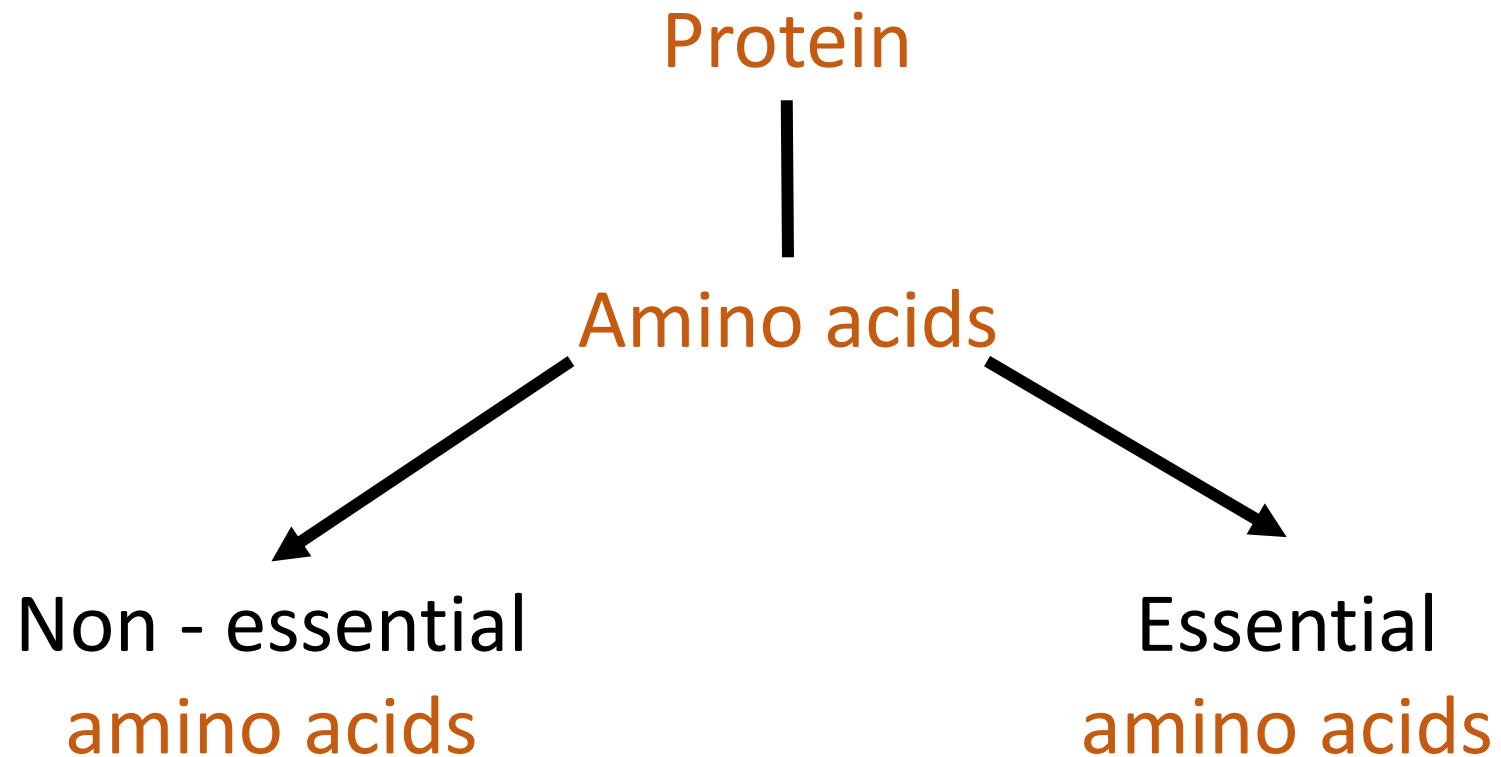
Longevity



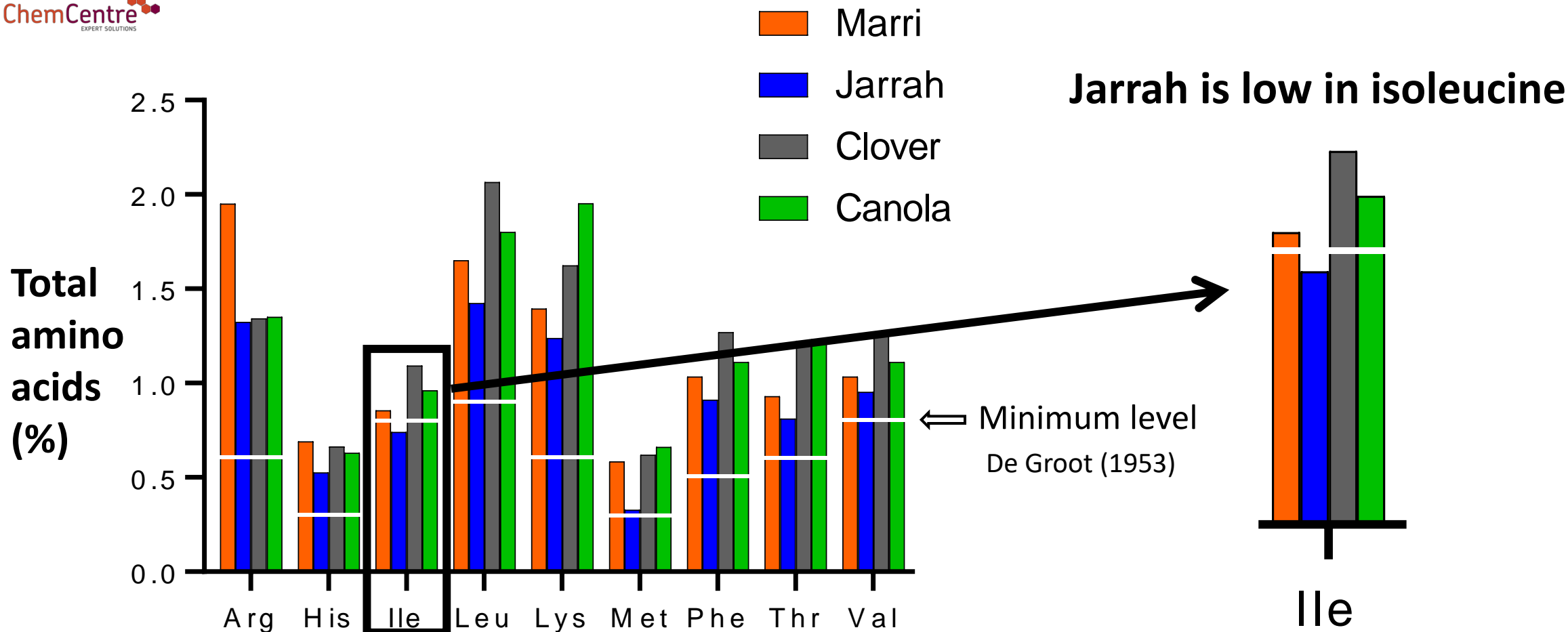
Colony Productivity
(Brood count)



Protein



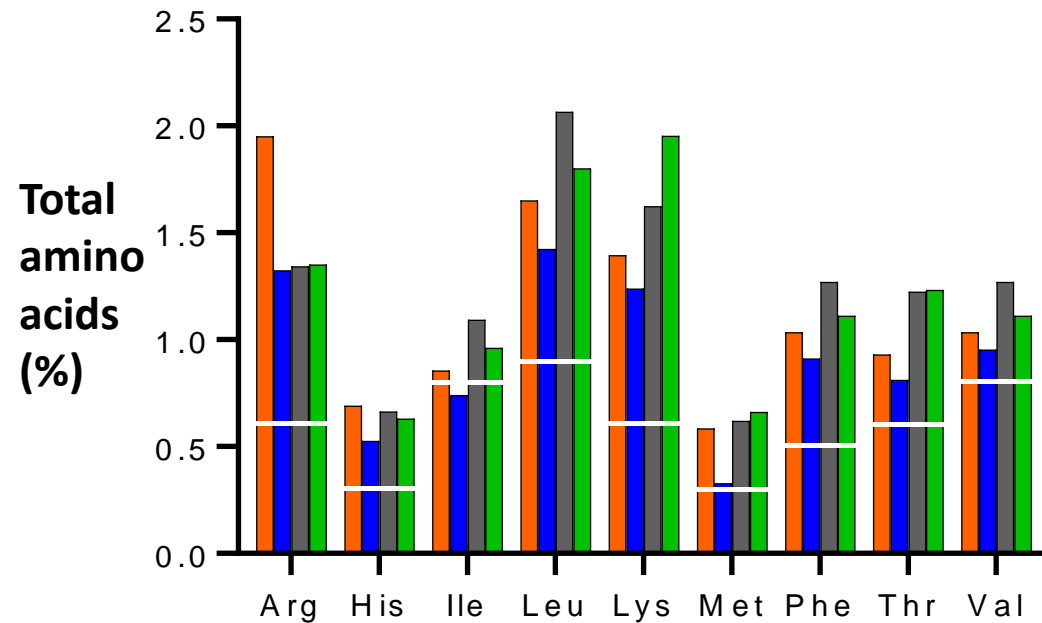
Essential amino acids in pollen



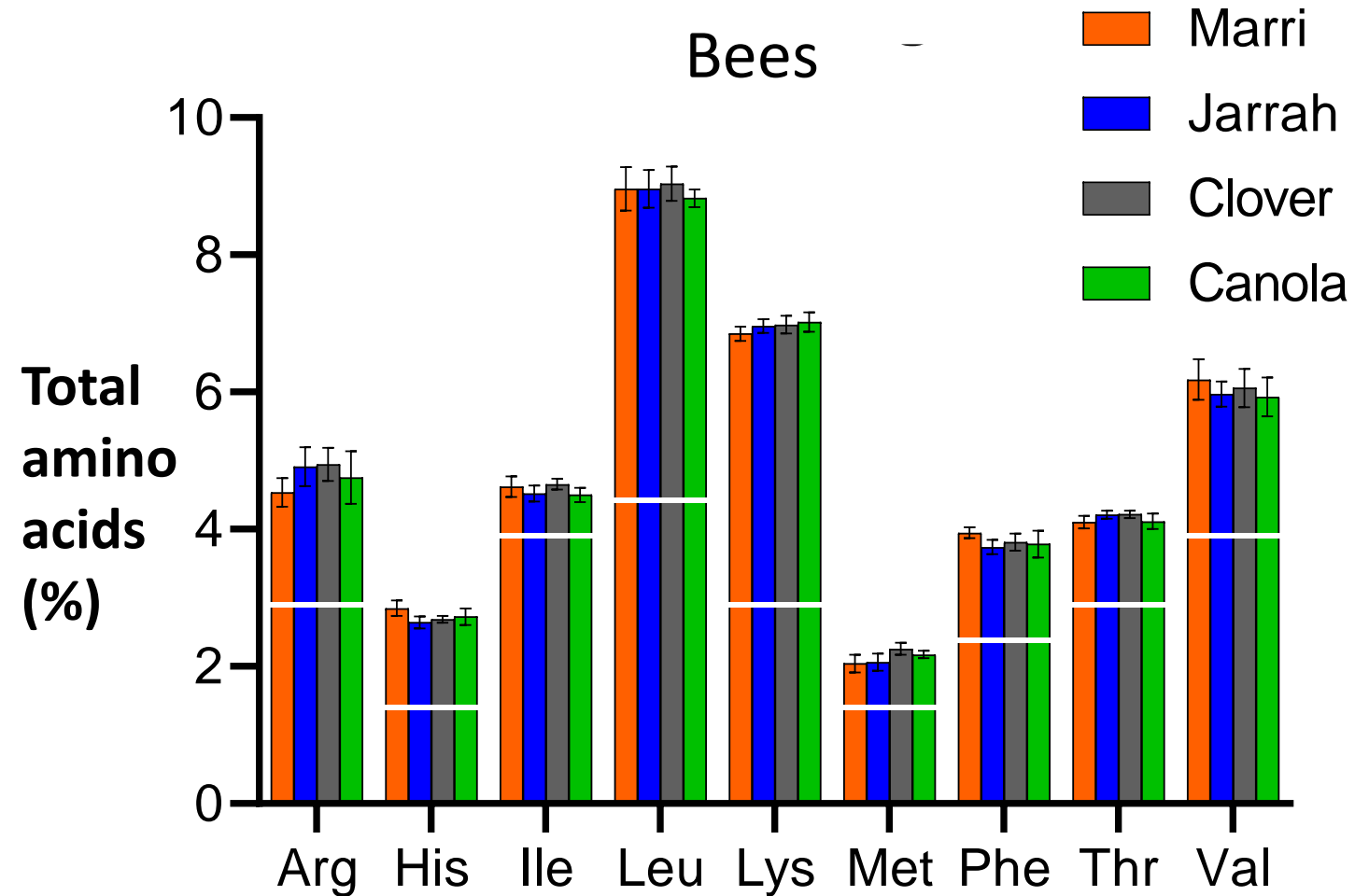
Essential amino acids in bees



Pollen



Bees



Jarraah

Canola

Clover

Marri



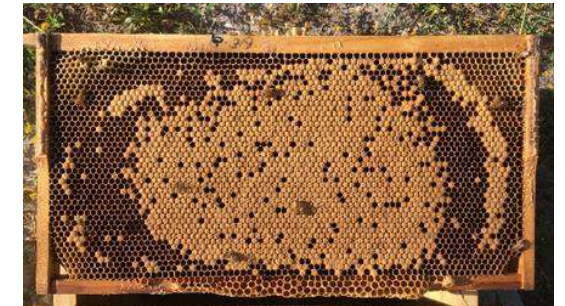
Body composition
(Amino acid content)



Emerging bees



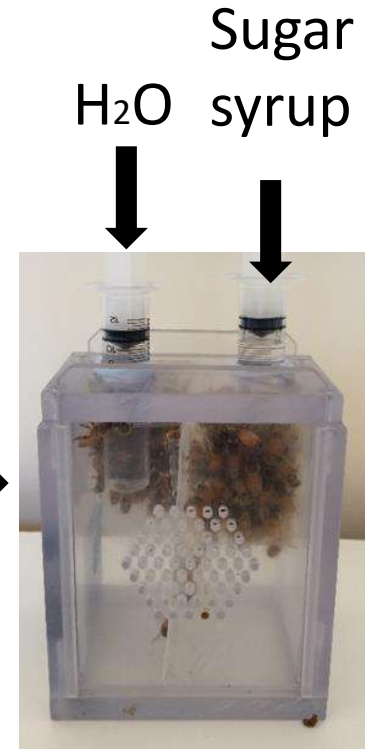
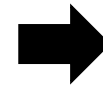
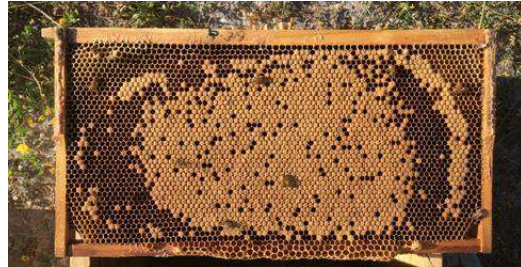
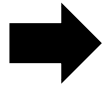
Colony Productivity
(Brood count)



Longevity



Longevity setup

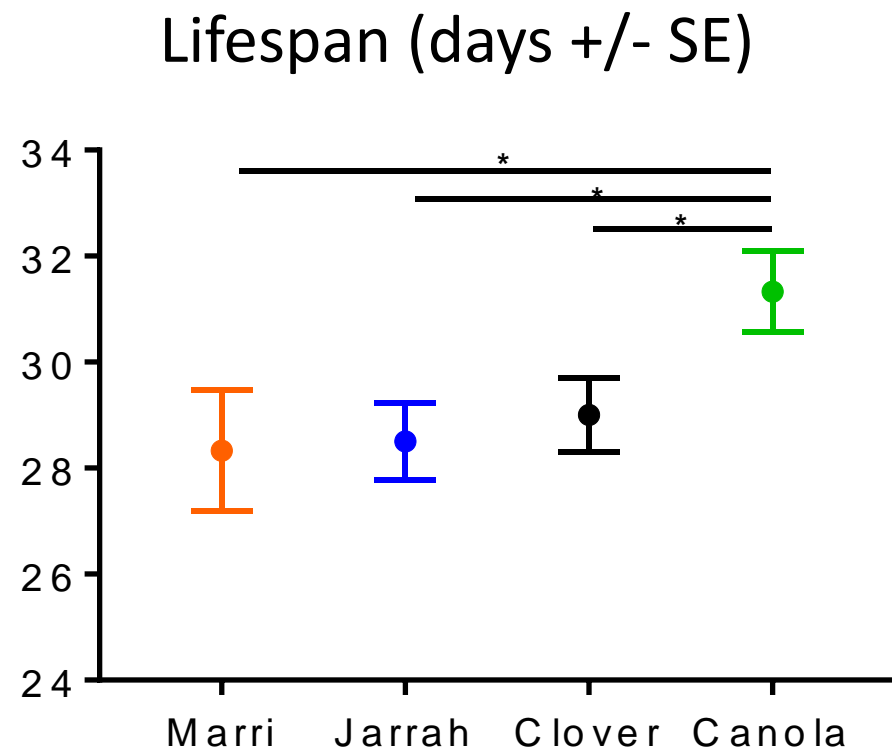
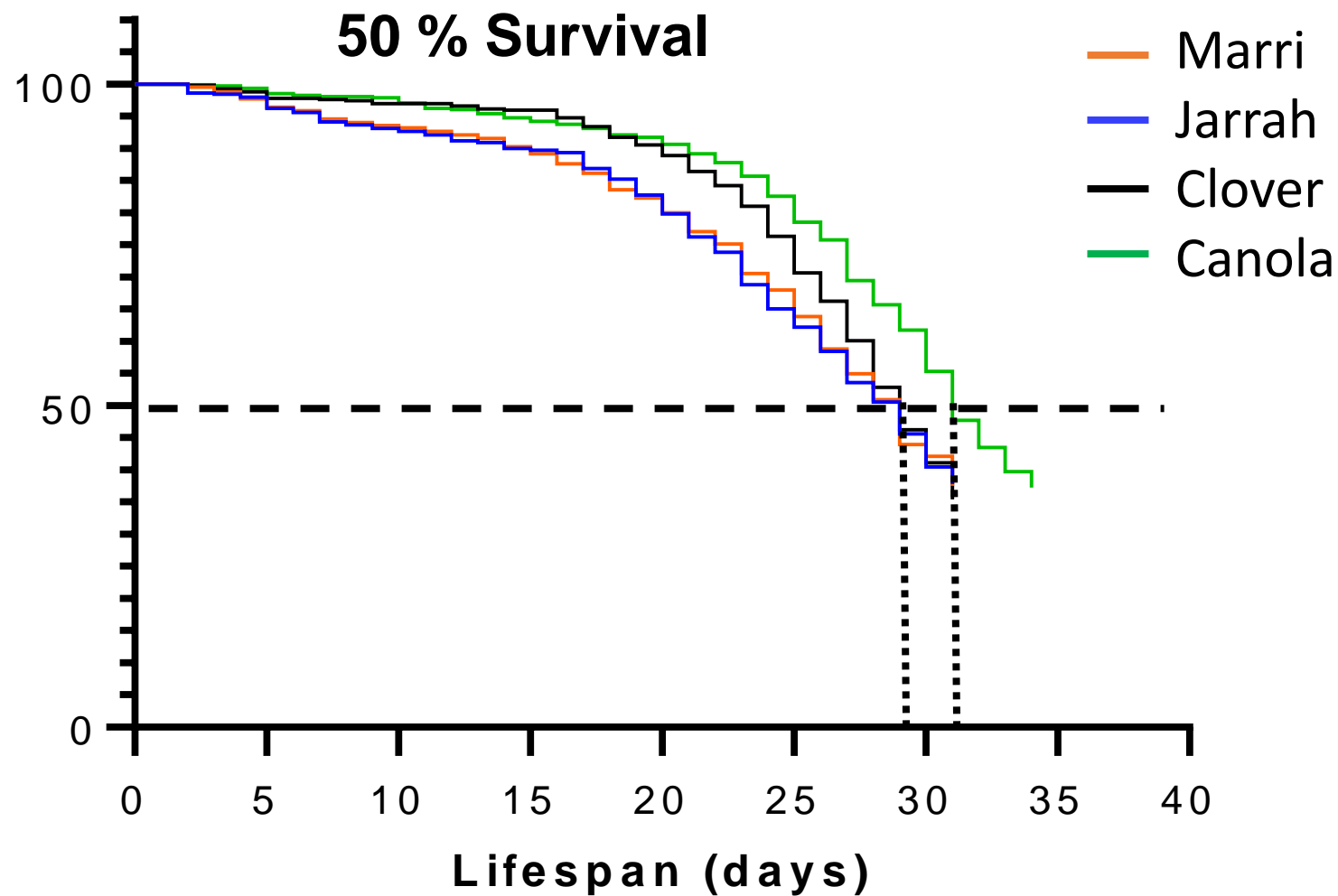


6 replicates/
treatment

100 bees/box



Longevity



Jarraah

Canola

Clover

Marri



Body composition
(Amino acid content)



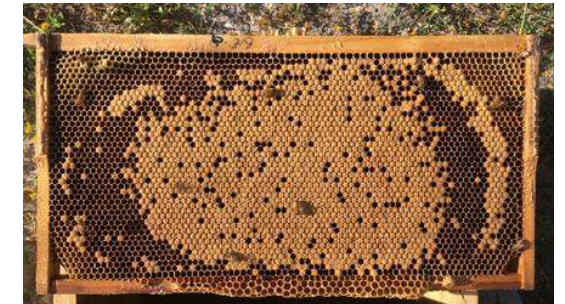
Emerging bees



Longevity



Colony Productivity
(Brood count)



Colony productivity



Total

1,920
Images

791,398
Brood
cells



Beestly software

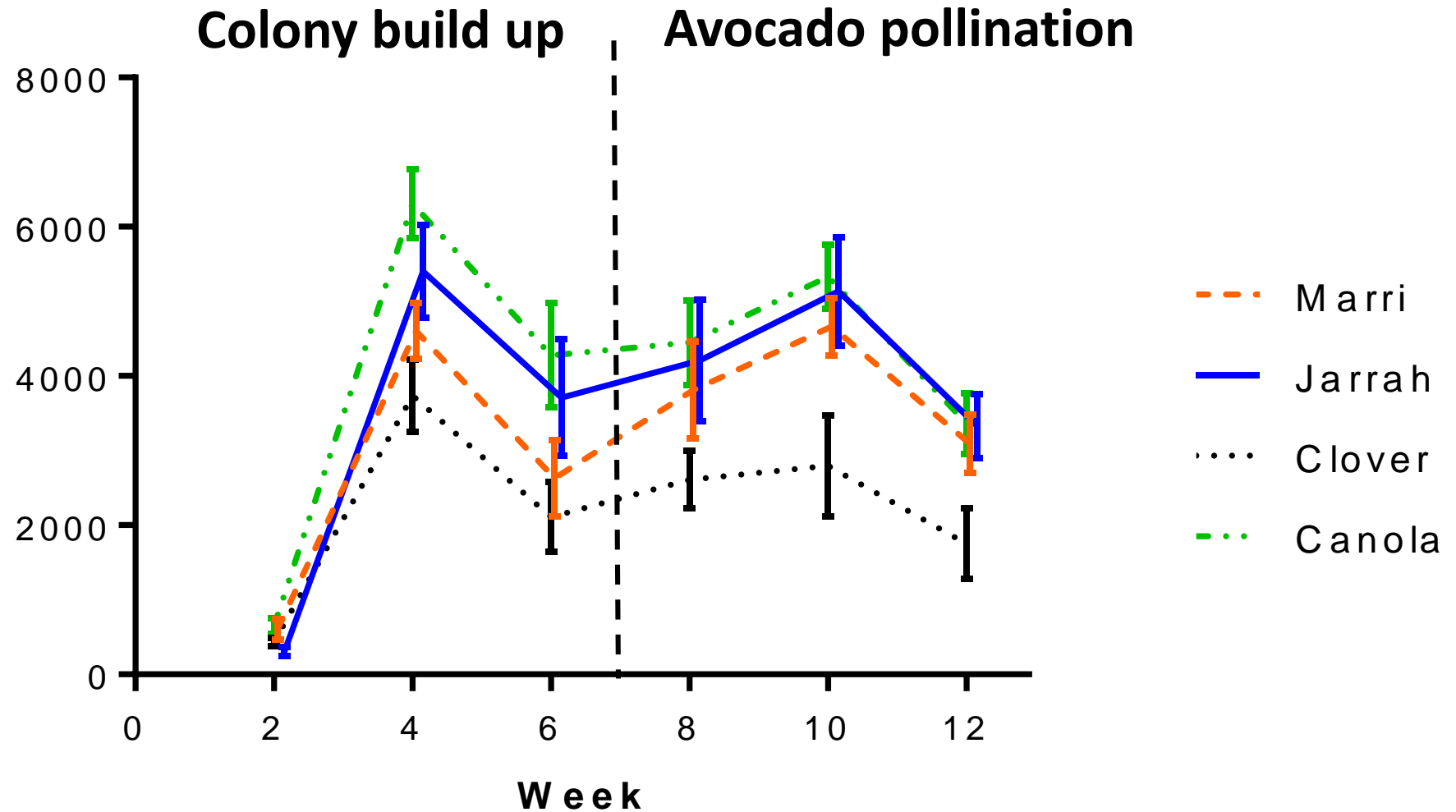


cyency.com

Colony Productivity







Total brood
count per
colony



What determines optimal nutrition?



	Jarrah	Canola	Clover	Marri
 Complete Food source (Amino acids)	-	+	+	+
 Amino acid body content	+	+	+	+
 Longevity	-	+	-	-
 Colony Productivity	+	+	-	+

We cannot only judge a feed source by its nutritional composition!



Dominique Blache



Rob Manning



Boris Baer



Kingsley Dixon



Ian Small

