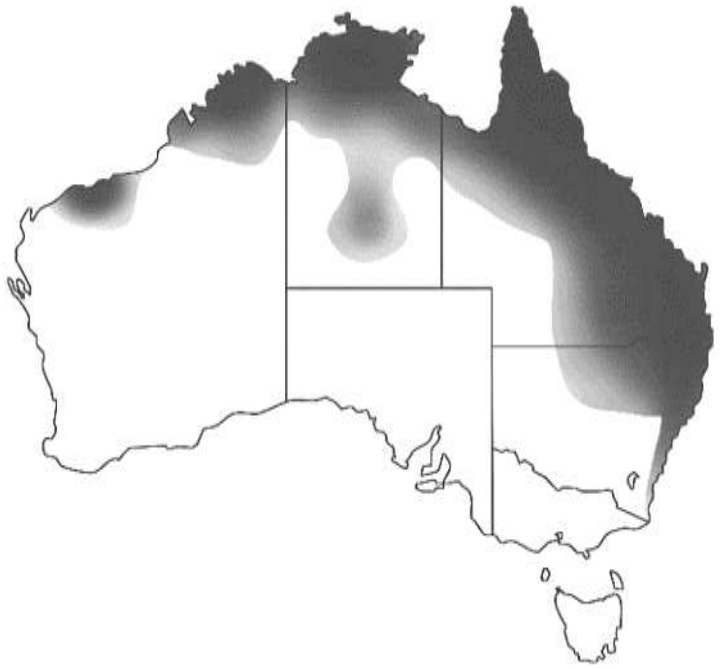
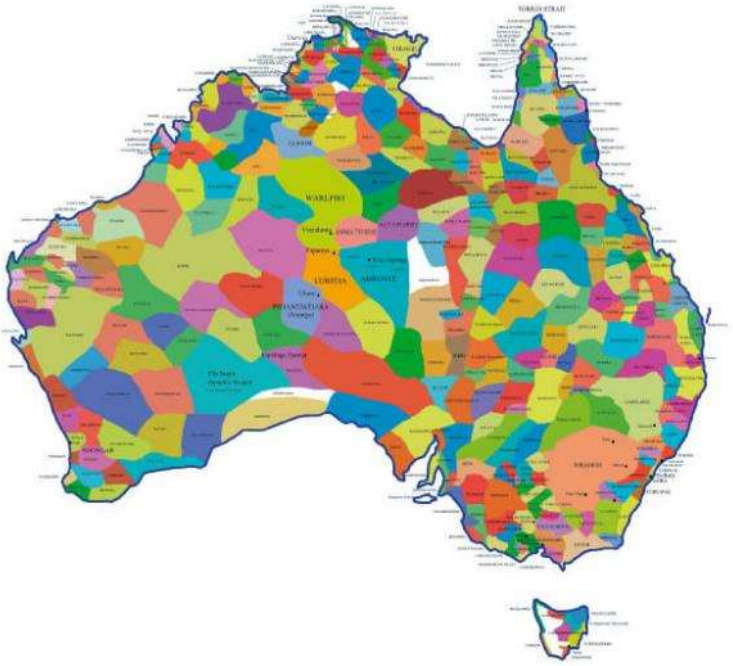
Australian Native Bee Association

Our journey towards a food standard for stingless bee honey

First Nations



Australian Native Bee Book, pg110

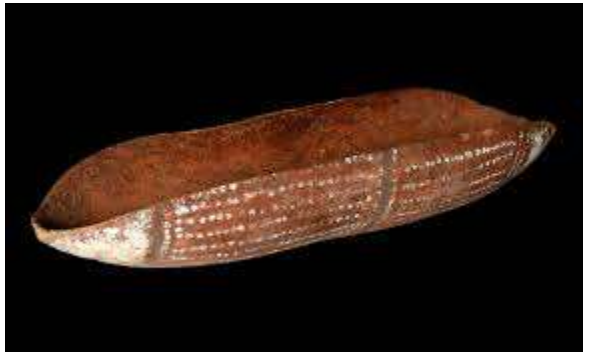


Australian Institute of Aboriginal and Torres Strait Islanders Studies

Originally, there were more than 180 names for honey! **name (language)**

Here are a few: Kut'ya, Ga-bai (Gubbi Gubbi), Gumarra (Dharawal), Gadyang, Nguwaga (Dharug), Ngarruu (Wiradjuri), Gudji (Bunjalung), Birkuta (Yolngu), Mayi Wunba (Dgabuguy), Wurrungunna (Ngemba)

Traditional Beekeeping Equipment



Coolamon (above) and stone Axe (below)

Sugarbag Woman
(by Don Namundja)

Honey Bags
“Sugarbag” pattern on right

Photos from Australian National Museum website.

Colonial Australia

Colonists putting bees in boxes as early as 1805

Sydney Gazette and New South Wales Advertiser, Sunday 4 September **1803**

Some days ago a small Hive was found in the hollow of a Tree that had been brought into Town as fuel. When taken out a prodigious swarm of small Bees flew out upon the bystanders and nearly covered the person who held it in his hand, but without stinging him or any other person. **About a pint of honey** was taken from it, and the hive afterwards presented to a Gentleman.

Sydney Gazette and New South Wales Advertiser, Sunday 5 May **1805**

About a fortnight since a baker on the Rocks found a bee hive in a hollow tree which he was cutting up as fuel, and extracted from it upwards of **half a gallon of the honey**, the comb producing several pounds of wax. Intent at the same time on securing the little artificers who had surprised him with the present, he found means to draw many of them off **into a small case in which the deserving insects have resumed their labours**, and appeared not in the least discouraged by the transposal.

Hockingsi Honey Super

ANBA Honey Committee Goals

1. So that the honey from Australian native bees can be legally sold in Australia and New Zealand.

2. To create consumer confidence in our honey.

3. To help our bee community and honey producers.

4. To create a small book describing the food safe harvest, handling and packaging of our honey.

ANBA Sponsors FOOD SAFETY TESTS - 2021

- ANBA collaborative effort – Honey samples from Cairns to Sydney
- Carbonaria, Hockingsi, Australis & Cassiae honey analysed
- Microbiological + physical and chemical testing to standard international honey criteria
- Microbiology tests in Melbourne, Physicochemical tests in Germany

Results?

- High water content
- High acidity, probably from natural fermentation
- Sometimes has high HMF (Hydroxy methyl furanol)
- Enzymes differ from European honey (eg Diastase)
- Unique sugar profiles

- Microbiology varied but was acceptable. It is similar to European honey in that it’s often got very low numbers, but occasionally very high numbers

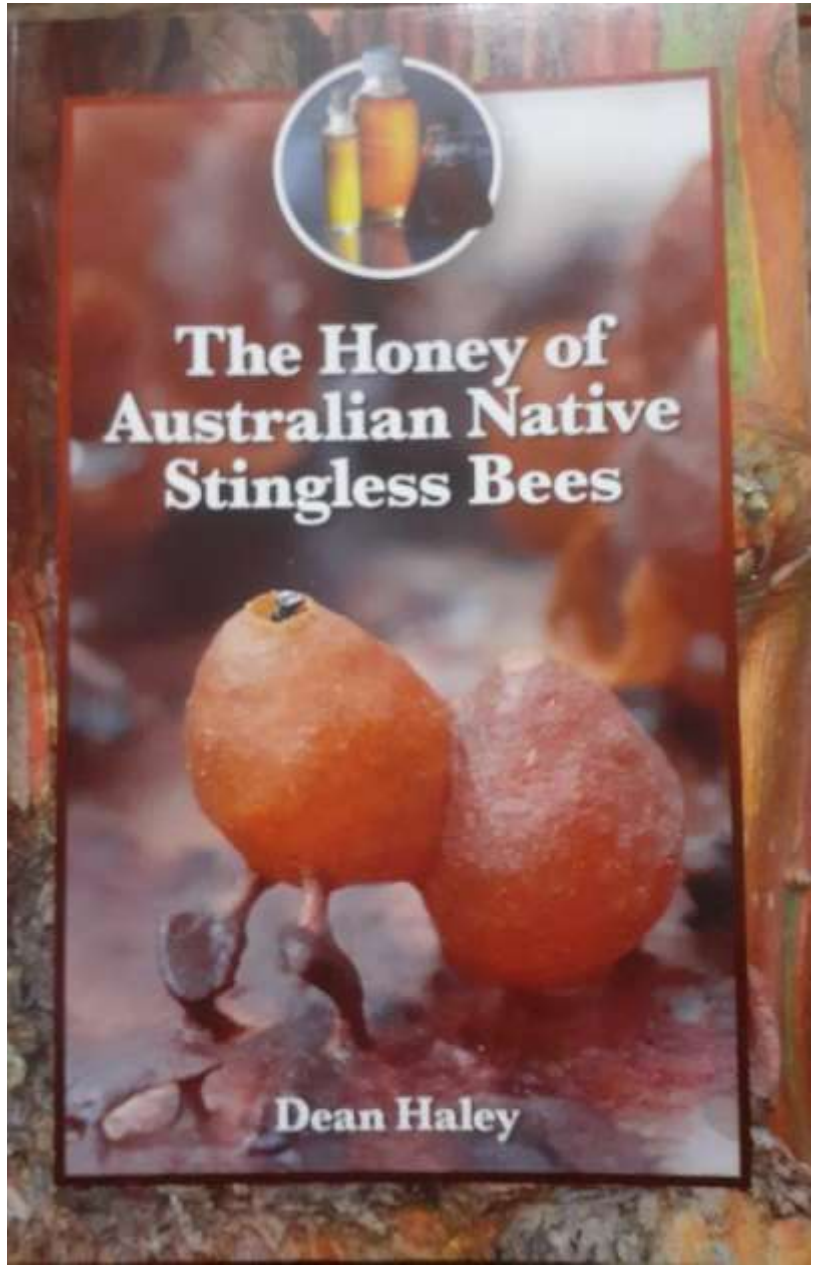
UC DAVIS Honey Flavour Wheel

- The Flavours in native honey can be amazing!
- Our honey's were displayed and judged at the Sydney Royal Easter Show for the first time in 2019
- The Judge used the honey flavour wheel to assess that honey
- I often taste strawberry, orange peel, butterscotch, Melon, and pine flavours in various honeys

UQ Research - Trehalulose

Right: Principle researchers Prof Mary Fletcher & Dr Natasha Hungerford.

- Studied the presence and origin of trehalulose in stingless bee honey
- Large amounts (about 20%) in tetragonula honey but less in Austroplebeia honey
- Anti diabetic
- Anti acarigenic
- Low glycaemic index
- Unique to stingless bees (not found in honey bee honey)


The Honey of Australian Native Stingless Bees
Dean Haley

BOOK LAUNCH Aug 2021


TOILETS
Honey
Flavour Wheel
Bee
united.
Native bee honey
Pollination

HOW DOES NATIVE HONEY DIFFER TO APIS STANDARDS?

Measured Characteristics	European Bee Honey			Native Bee Honey		
	European Union standard	Codex Alimentarius	Food standard AS/NZS 2.8.2	Carbonaria	Hockingsi	Australis
Water %	<20%	<20%	<21%	26.5%	25.2%	19.9%
Electrical Conductivity	Maximum 0.8mcm	Maximum 0.8mS/cm	N/A	1.6mS/cm	0.7mS/cm	unknown
pH	N/A	N/A	N/A	4.0	3.6	4.7
Free Acidity	Maximum 50	Maximum 50	N/A	124.2	125.4	23.4
Fermentation	No	No	No	Yes	Yes	Yes

Malaysian Specification - 2017

Characteristic	Raw Honey	Dehydrated Honey
Bacteria	< 1000 /mL	
Yeast & mould	<10 /mL	
Coliforms	<10 /mL	
Water %	<35	<22
Sucrose g/100g	<7.5	<8
Fructose + Glucose g/100g	<85	<90
Maltose g/100g	<9.5	<10
pH	2.5 – 3.8	2.5 – 3.8
HMF mg/kg	<30	<30
Plant phenolics	Present	Present

Brazil - 2019

Characteristic	Limits
Yeast	<1000 cfu/g
Coliforms	<10 cfu/g
Salmonella	Absent
Moisture % Fresh or Matured honey	<40
Moisture % Dehydrated honey	<20
pH	2.9 – 4.5
Free Acidity	Maximum 50 mEq/kg
Water Activity	0.52 – 0.8
HMF	Maximum 20mg/kg
Ash	Maximum 0.6g/100g
Pollen	present

Microbiological Results

Species	Replicates	Storage (months)	Bacteria (cfu/g)	Yeast (cfu/g)	Mould (cfu/g)	Salmonella	Listeria
T. hockingsi carbonaria mix, (room temperature)	1	16	20	<10	<10	N.D.	N.D.
T. carbonaria	7	2 – 15	274 ± 505	<10	7 ± 6	N.D.	Detected in single sample
T. carbonaria (room temperature)	1	19	20	<10	<10	N.D.	N.D.
T. hockingsi	7	1 – 25	63 ± 42	6 samples <10. Single sample 15000	10 ± 13	N.D.	N.D.
A. australis	3	1 - 2	640 ± 916	<10	23 ± 20	N.D.	N.D.
A. australis (room temperature)	1	11	200	<10	<10	N.D.	N.D.
A. cassiae	1	10	700	<10	<10	N.D.	N.D.

Physicochemical Results

Species	Replicates	Moisture (%)	pH	Free Acid (mmol/kg)	HMF (mg/kg)	Diastase number
T. carbonaria	3	25.8 ± 1.6	3.8 ± 0.1	112.5 ± 28.7	5.2 ± 7.9	0.1 ± 0.1
T. carbonaria room temperature	1	27.0	3.5	291.9	79.6	Not detected
T. hockingsi	3	27.1 ± 4.1	4.2 ± 0.4	62.5 ± 35.5	0.7 ± 0.5	0.1 ± 0.2
A. australis	11	19.9 ± 1.3	4.7 ± 0.7	23.4 ± 13.9	3.2 ± 5.2	0.3 ± 0.4
A. australis room temperature	1	20.0	3.9	51.3	142.9	Not detected
A. cassiae	2	19.5 ± 0	3.9 ± 0.1	48.2 ± 16.8	6.4 ± 1.1	Not detected

Australis honey sugar spectrum – world first

Parameter	Average	Minimum	Maximum
Fructose (g/100g)	33.1 ± 1.9	29.9	36.1
Glucose (g/100g)	19.4 ± 2.9	14.5	24.0
Sucrose (g/100g)	6.0 ± 4.8	0.0	13.0
Trehalulose (g/100g) *	3.7 ± 0.9	2.7	4.9
Turanose (g/100g) **	2.9 ± 0.9	1.6	4.3
Reducing sugars (g/100g)	59.0 ± 3.4		
Total sugars (g/100g)	65.0 ± 2.3		