

# Aotearoa | New Zealand Native Plants

## Food for Thought



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## Welcome



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# Aotearoa | New Zealand- A special place in the world



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Aotearoa | New Zealand known for its abundance of:

Geography



Aoraki | Mount Cook



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Aotearoa | New Zealand known for its abundance of:

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Unique fauna



Kiwi



Aoraki | Mount Cook



Tūī



# Aotearoa | New Zealand- A special place in the world

Aotearoa | New Zealand known for its abundance of:

Geography

Unique fauna

Beautiful flora



Pohutukawa



Mānuka



Aoraki | Mount Cook



Kiwi



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# Aotearoa | New Zealand- A special place in the world

Aotearoa | New Zealand known for its abundance of:

- Geography
- Unique fauna
- Beautiful flora



Pōhutukawa



Mānuka



Aoraki / Mount Cook



Kiwi



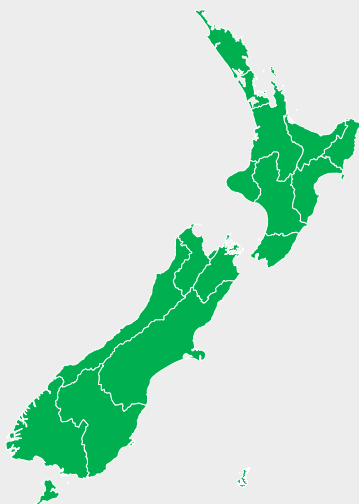
Tūi



## A brief history of Aotearoa | New Zealand plants



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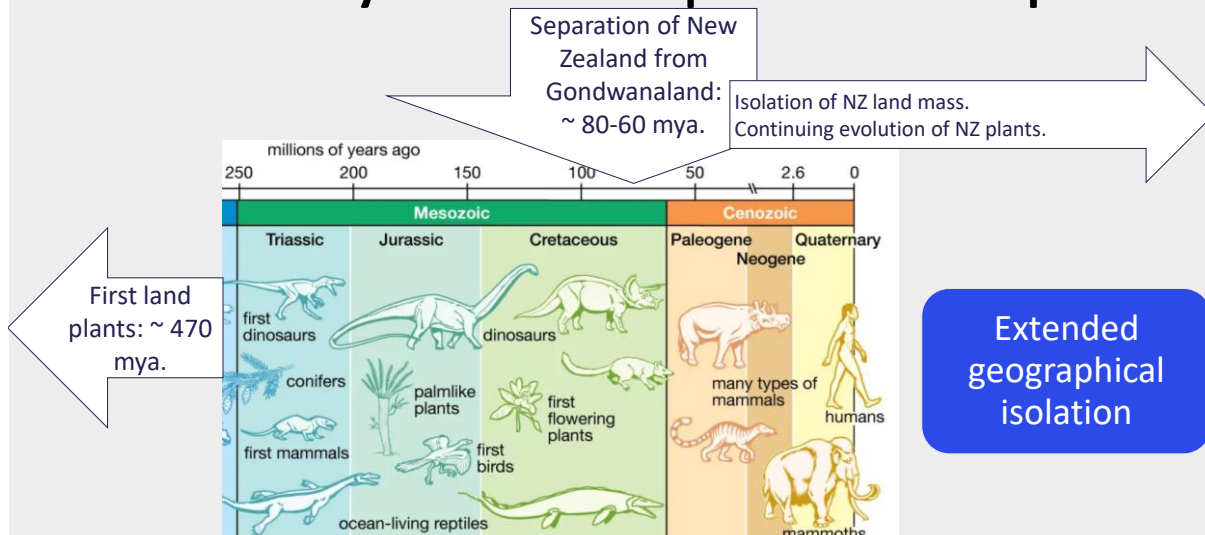


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## A brief history of Aotearoa | New Zealand plants



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## A brief history of Aotearoa | New Zealand plants

Over 2000  
characterized **Native**  
plant varieties

At least 80% of trees,  
ferns and flowering  
plants in Aotearoa  
are **Endemic**



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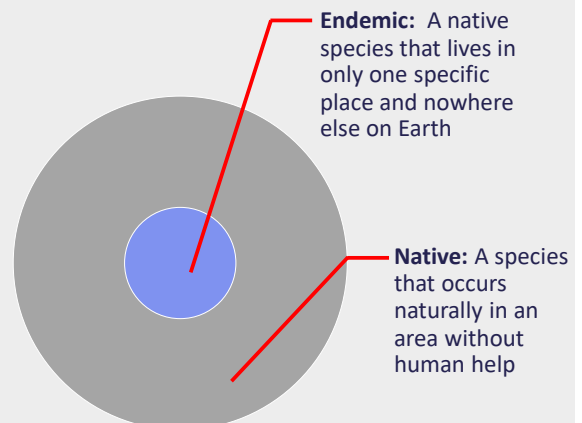


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# A brief history of Aotearoa | New Zealand plants

About 160 native plants are known to be safe to eat



Kiokio fern



Mānuka



Kawakawa



Horopito

## Edible Trees

- Tarata (lemonwood)
- Manuka

## Edible Ferns

- Pikopiko
- Kiokio

## Edible Shrubs

- Red Matipo
- Kawakawa
- Horopito



# Kawakawa & Horopito





## Kawakawa & Horopito

### Kawakawa (*Piper excelsum*)

- Fruit and leaves are both edible
- Fruits can be turned into 'peppercorns'.
- Leaves can be brewed into tea or used like a herb to add flavour to dishes.
- Distributed throughout the North Island, and as far south as Banks Peninsula
- An important healing plant traditionally used in rongoā Māori (Māori medicine).

Wild Kawakawa sitings- INaturalist

Kawakawa

### Flavour profile

Herbal

Bitter

Minty

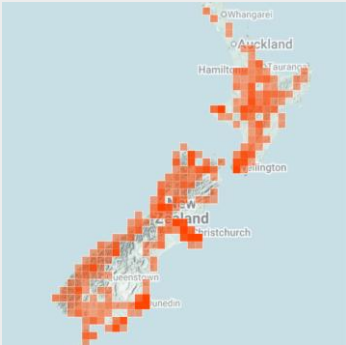
Green

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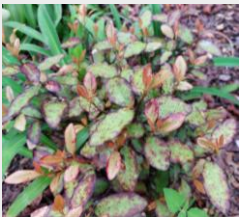
# Kawakawa & Horopito

## Horopito (*Pseudowintera colorata*)

- Edible leaves
- Leaves can be brewed into tea or used like a herb to add flavour to dishes.
- Distributed across the whole of Aotearoa particularly mountainous regions.
- An important healing plant traditionally used in rongoā Māori (Māori medicine).



Wild Horopito sitings- INaturalist



Horopito

## Flavour profile

Burning and lingering  
aftertaste

Spicy

Peppery



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## Kawakawa & Horopito

### Drying:

- Drying is a important part of producing food products from plants
- Drying results in:
  - Loss of water- Preserves food
  - Loss of heat sensitive compounds
  - Development of heat sensitive compounds

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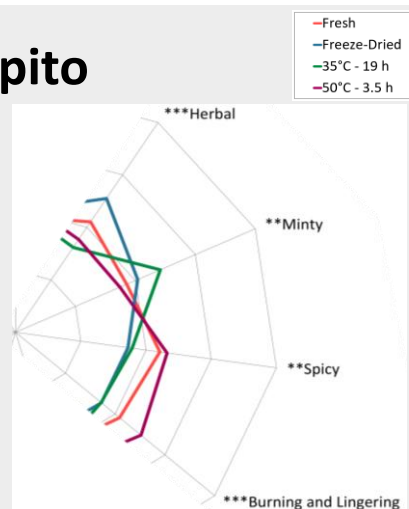
## Kawakawa & Horopito

### Drying:

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Causes

Changes the  
flavour profile



e.g. Dehydration of Horopito at 50 °C increases Spicy, and Burning and Lingering attributes

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## Changes in chemical composition

- Drying is a important part of product products

## Causes

- Loss of water- Preserves food
- Loss of heat sensitive compounds
- Development of heat sensitive compounds

| Class    | Compound               | Fresh                    | Freeze-dried             | 35°C–24 h                | 55°C–5 h                 | Odor descriptors <sup>a</sup>                                             |
|----------|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------------------------------------------------------|
| Acid     | Butyric acid           | 0.34 <sup>a</sup> ± 0.18 | 1.29 <sup>b</sup> ± 0.30 | 0.80 <sup>b</sup> ± 0.11 | 0.55 <sup>b</sup> ± 0.14 | Cheesy, sharp, acetic, buttery, fruity                                    |
| Alcohol  | Terpinen-4-ol          | 26.5 <sup>a</sup> ± 13.5 | 131 <sup>b</sup> ± 29    | 130 <sup>b</sup> ± 5.2   | 103 <sup>b</sup> ± 2.11  | Spicy, peppery, woody, earthy, musty, sweet                               |
|          | <i>n</i> -Hexanol      | 20.5 <sup>a</sup> ± 4.96 | 15.1 <sup>a</sup> ± 0.43 | 11.7 <sup>a</sup> ± 0.40 | 10.4 <sup>a</sup> ± 0.29 | Herbaceous, pine, rose, citrus, woody, floral                             |
| Aldehyde | <i>n</i> -Hexanal      | 31.3 <sup>a</sup> ± 6.21 | 5.99 <sup>a</sup> ± 0.65 | 11.5 <sup>a</sup> ± 0.17 | 1.38 <sup>b</sup> ± 0.23 | Green, fresh, fatty, aldehydic, grassy, leafy, fruity, sweaty             |
|          | 3-Methylcrotonaldehyde | 3.44 <sup>a</sup> ± 0.46 | ND                       | 0.20 <sup>b</sup> ± 0.08 | 0.07 <sup>b</sup> ± 0.01 | Fruity, sweet, pungent, brown, nutty, almond, cherry                      |
|          | 2-Methylbutyraldehyde  | 0.47 <sup>a</sup> ± 0.04 | 0.04 <sup>a</sup> ± 0.02 | 0.51 <sup>a</sup> ± 0.04 | 0.14 <sup>b</sup> ± 0.03 | Cocoa, musty, phenolic, coffee, nutty, malty, fermented, fatty, alcoholic |
|          | Benzaldehyde           | ND                       | 0.29 <sup>b</sup> ± 0.07 | 0.73 <sup>b</sup> ± 0.16 | 0.42 <sup>b</sup> ± 0.08 | Fruity, sharp, sweet, bitter, almond, cherry                              |
|          | <i>n</i> -Pentanal     | ND                       | 0.24 <sup>b</sup> ± 0.01 | 0.13 <sup>b</sup> ± 0.04 | 0.58 <sup>a</sup> ± 0.06 | Fermented, breadly, fruity, nutty, berry                                  |
| Benzene  | Toluene                | 4.46 <sup>a</sup> ± 0.40 | 1.87 <sup>b</sup> ± 0.93 | 2.12 <sup>b</sup> ± 0.12 | 2.23 <sup>b</sup> ± 0.83 | Sweet                                                                     |
|          | Ethylbenzene           | 0.38 ± 0.03              | ND                       | ND                       | ND                       | N/A                                                                       |
|          | Penten-3-one           | 2.38 <sup>a</sup> ± 0.62 | 0.60 <sup>b</sup> ± 0.05 | ND                       | 0.23 <sup>b</sup> ± 0.03 | Spicy, pungent, peppery, mustard, garlic, onion                           |
| Ketone   | Acetoin                | ND                       | ND                       | 0.42 <sup>a</sup> ± 0.03 | 0.18 <sup>b</sup> ± 0.01 | Buttery, sweet, creamy, dairy, milky, fatty                               |

(Continues)

## Changes in chemical composition

- Drying is a important part of product plants

## Causes

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## Opportunities for the class room



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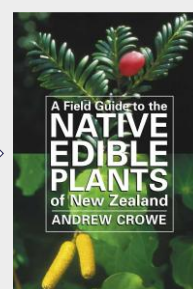
## Opportunities for the class room

### •Local ecology

- Identifying what edible plants grow locally  
(tools like INaturalist: <https://www.inaturalist.org/>)
- Foraging or wild harvesting in your local area

**Consolation  
with Tangata whenua  
required**

**Ensure correct  
identification**



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## Opportunities for the class room

### •Local ecology

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### •Food processing

- Evaluation of different processing methods (e.g. dehydration)
- Product development

Small scale processing is relatively simple in a food technology kitchen



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### •Food processing

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### •Marketing and consumer behavior

- Tasting of commercial products (<https://nativetreefarm.co.nz>)

Small (but not zero) risk of food allergies



## Opportunities for the class room

### •Local ecology

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