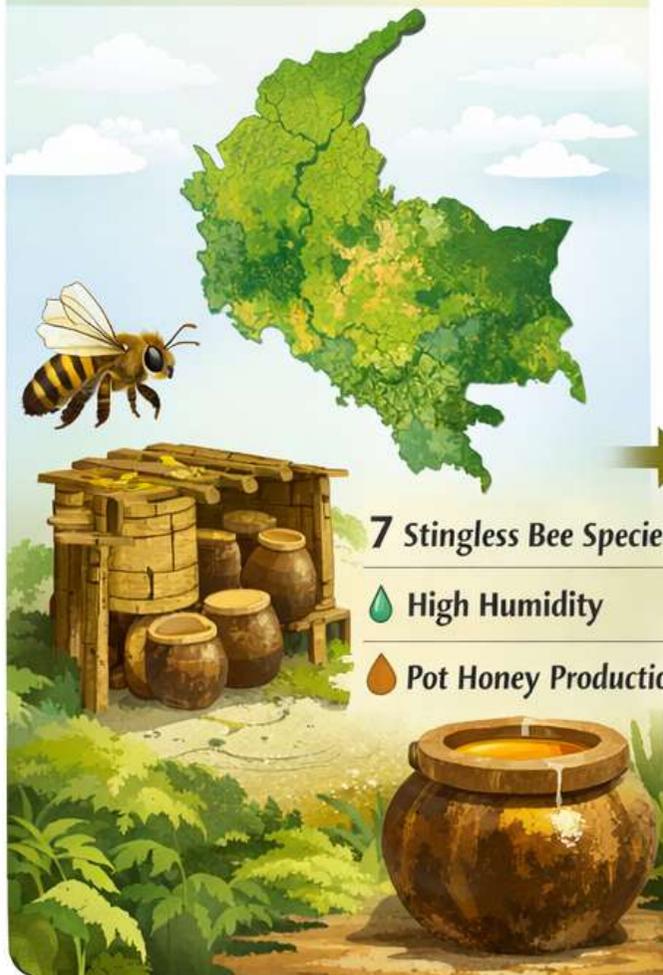


# Physicochemical, Microbiological and Bioactive Characterization of Stingless Bee Honey from the Colombian Amazonian Piedmont



## Amazonian Piedmont



7 Stingless Bee Species

High Humidity

Pot Honey Production

## Honey Analysis

Moisture  $26.6 \pm 3.01\%$

Acidity  $49.59 \text{ meq/kg}$

pH  $3.22\text{--}4.63$

High Conductivity



## Organic Acids Profile

Ascorbic Acid  $47.1\text{--}233.7 \text{ mg/100g}$

Lactic Acid  $> 150 \text{ mg/100g}$

Gluconic Acid  $94.7\text{--}1324.6 \text{ mg/100g}$

Citric & Tartaric Acid

Succinic Acid  $> 5000 \text{ mg/100g}$

## Honey Fingerprint

High Vitamin C Phenolics  
Strong Antioxidant Activity

## Functional & Safety

### Microbiological Safety

No Salmonella

No Clostridium perfringens

No Fecal Coliforms

Lactic Acid Bacteria  
Up to  $5 \text{ Log CFU/g}$



### Heat Treatment

$80^\circ\text{C}$   
5 min

$65^\circ\text{C}$   
3 min



LAB Destroyed

LAB Reduced

Bioactives Preserved

### Food Safety

No Cd, Pb, As, Hg.

Trace Cu Detected



Stingless bee honey from the Colombian Amazonian Piedmont exhibits high acidity, strong antioxidant activity, lactic acid bacteria presence, and meets food safety standards.