



Knowledge, attitude, and practices (KAP's), and nutritional profiling of *Costus woodsonii* consumption as traditional elixirs among adults' population in Kota Kinabalu, Sabah

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Introduction

- C. Woodsonii or red ginger or "bunga gincu" is one of the species of the genus Costus and the family Costaceae.
- Costus species are used as traditional medicine by some tribes of the world to treat diabetes, fever, cough, asthma, ear infections (Chan, 2014) and most notably, C. woodsonii bract is eaten fresh as a blood cholesterol regulator.

Objectives

- To identify and determine the relationship between the level of KAPs of C. woodsonii consumption among the population of Kota Kinabalu, Sabah.
- To determine the nutritional content of C. woodsonii plant parts (bract, leaf, stem).

Methodology

KAP study, (N = 143), 18 - 65 years old

Kota Kinabalu, Sabah

Part A: Demographic
Part B: Knowledge
Part C: Attitudes
Part D: Practices

Scoring system

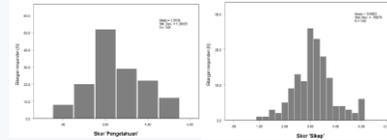
Likert scale

Chemical analysis, AOAC guidelines (1980) (bract, leaf, stem)

Results and discussion



- 118 (82.5 %) female, 25 (17.5 %) male
- 120 (83.9 %) 18-33 years; 20 (14.0 %) 34-49 years;
- 3 (2.10 %) 50-65 years old



- Knowledge = 2.51±1.30 (<60%); (moderate)
- Attitude = 3.10 ± 1.69 (60-70%); (neutral)
- Practices = 3 (2.10 %) took C. woodsonii



20 (14 %) know the benefits

- Control diabetes (n = 1, 33.3 %), hypertension (n = 1, 33.3 %) and cholesterol (n = 1, 33.3 %)
- 2 (66.7 %) helped them control blood sugar.
- Decrease in weight (n = 1, 33.3 %) as well as an increase in energy (n = 1, 33.3 %)
- 1 (33.3 %) did not observe any effect.

The Kadazandusun and Murut tribes in Sabah practiced C. speciosus or Crepe ginger or Setawar hutan due to the convenience of obtaining this plant as this species can grow wild (Kulip (2003), similar finding among Terengganu population (Abdulrahman et al., 2018).



Component (%)	Bract	Leaf	Stem
Moisture content	8.86 ± 1.05	10.96 ± 4.30	9.76 ± 0.19
Ash content	6.70 ± 0.64 ^{ab}	11.07 ± 0.17 ^a	9.94 ± 1.13 ^b
Crude protein	4.66 ± 0.27 ^{ab}	10.12 ± 0.15 ^{ac}	2.96 ± 0.11 ^{bc}
Crude fat	0.92 ± 0.18 ^{ab}	3.46 ± 0.37 ^a	0.69 ± 0.19 ^b
Crude fiber	29.03 ± 1.50 ^{ab}	23.33 ± 0.28 ^{ac}	38.89 ± 0.76 ^{bc}
Total carbohydrate	49.65 ± 0.75 ^a	42.13 ± 3.65 ^{ab}	39.47 ± 1.46 ^b

Conclusions

Residents in Kota Kinabalu have a moderate level of knowledge about the C. woodsonii plant. The plant parts consumed are the leaves and flowers, eaten raw, boiled, or in powder form, taken 4-5 days a week, 1-2 times a day. Proximate analysis showed that the leaf part had the highest content of moisture, ash, crude protein, and crude fat compared to other parts. While the crude fiber content is the highest in the stems, and the carbohydrate content is the highest in the bracts.