Graphical Abstract
STUDIES OF PHYSICOCHEMICAL CHARACTERISTICS OF SOME HONEYS FROM WEST BENGAL, INDIA

EVALUATION OF PHYSICOCHEMICAL CHARACTERISTICS OF SOME HONEYS FROM WEST BENGAL, INDIA

HONEY SAMPLE

Determinations of in vitro antioxidative potential of honeys

Therapeutic health benefits of sesame honey

Conclusion

• Physical characteristics, biochemical composition and mineral content together with chemometric techniques characterised honeys of different botanical and geographical origins.

• Sodium content of mangrove honeys was much higher than its potassium content.

• Antioxidant potential / radical scavenging activity of honey samples procured from West Bengal was comparable to that of manuka honey from New Zealand.

• HPLC analysis has identified some good quality polyphenols (rutin, quercetin, myricetin, apigenin, ferulic acid) and sesame lignans (sesamin, episesamin) in sesame honey.

• Antibacterial property of sesame honey has revealed its antibacterial potency against some enteropathogenic bacteria like E. Coli, V. cholerae, S. Typhi and S. Typhimurium.

• Sesame honey was found to be effective in promoting growth of probiotic strains like Lactobacillus acidophilus and Bifidobacterium bifidum at in vitro level.

• Sesame honey was found to degrade pUC 18 DNA and was effective on nitric oxide (NO) release from oxidatively stressed PBMC (peripheral blood mononuclear cell).

• Non-enzymatic browning or Maillard reaction may be chiefly responsible for the changing colour of raw, unheated honey during storage, and as a result appears to be a major contributor to the antioxidant activity of honey.

Physical parameters

Biochemical parameters

Specific gravity

Total sugar

Total protein

Ash content

Total lipid

Total free fatty acid

Metal analysis

Electrical conductivity

Viscosity

pH

MANGROVE HONEY

Sesame (Sesamum indicum)

Hizal (Barringtonia acutangula)

Mustard (Brassica spp.)

Litchi (Litchi chinensis)

Khalsi (Aegiceras corniculatum)

Goran (Ceriops decandra)

Bain (Avicennia officinalis)

NON-MANGROVE HONEY

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