

Colour Intensity, Polyphenol Content and Antibacterial Capacity of Unheated and Heat-Treated Sahara Honey

Moussa Ahmed^{1,2*}, Baghdad Khiati², Saad Aissat^{1,2} and Nouredine Djebli¹
1Pharmacognosy and Api-Phytotherapy Research Laboratory, Mostaganem University, Algeria

Abstract

The objective of this research work was to evaluate the effect of heat processing on antibacterial capacity of Sahara honey (SH).

Various thermal treatments were carried out at 25°C, 50°C, 75°C and 100°C for 15 min, 30 min, and 60 min, and the parameters were determined: colour intensity, phenolic contents and antibacterial activity of two species of bacteria (*Staphylococcus aureus* and *Pseudomonas aeruginosa*). The total phenolic contents in honey samples varied from 0.55 and 1.54 mg of gallic acid equivalent (GAE) in gram of honey. MIC values respectively 3.12 to 12.5 mg/ml and zone of growth inhibition respectively 2.65 mm to 19 mm. Exposures of SH at 75°C and 100°C, no inhibition of *Staphylococcus aureus* and *Pseudomonas aeruginosa* growth was detected. Statistical analysis demonstrated positive correlations between color intensity and polyphenol contents and negative correlations with antibacterial capacity. Data from present results revealed that unheated and heat-treated Sahara honey showed growth inhibitory effect against *Staphylococcus aureus* and *Pseudomonas aeruginosa* with variable degrees.

Keywords: Sahara honey; Antibacterial capacity; Thermal processing