Study on Propolis Quality from China and Uruguay

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Propolis, Phenolic Constituents, ROO•-Scavenging Potential Activity

The composition, bacteriostatic and ROO•-scavenging potential activities of fifteen propolis samples from various botanic and geographic origins were determined to obtain objective information related to propolis quality. Variance analysis showed significant differences ($p \leq 0.05$) in the contents of polyphenols, flavonoids and active components between fresh and aged propolis. The state of the product (fresh or aged) could be differentiated by using flavonoid pattern and biological activities. A minimum propolis concentration of 80 $\mu$g/ml was required to inhibit *Bacillus subtilis* and *Staphylococcus aureus* while 800 $\mu$g/ml was required to inhibit *Escherichia coli* using fresh propolis. Aged propolis inhibit *B. subtilis* and *S. aureus* at concentration of 100 $\mu$g/ml and *E. coli* at 1000 $\mu$g/ml. A minimum flavonoids percentage of 18 g/100 g and a maximum ROO•-scavenging potential activity of 4.3 $\mu$g/ml were determined in fresh propolis. Flavonoids levels in aged propolis were approximately 20% lower than in fresh propolis. A maximum flavonoids percentage of 19.8 g/100 g and a ROO•-scavenging potential activity between 5.7 to 6.4 $\mu$g/ml in aged propolis were quantified. Another objective was to assess the use of ROO•-scavenging potential activity in propolis quality.