

Antioxidant activity of polyphenolic extract of monofloral honeybeecollected pollen from mesquite (*Prosopis juliflora*, Leguminosae)

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Received 22 September 2005; received in revised form 26 July 2006; accepted 4 August 2006

Abstract

The antioxidant capacity related to the phenolic composition of monospecific honeybee-collected pollen extract from the mesquite tree (*Prosopis juliflora*) from Durango, Mexico, was evaluated in an in vitro-biological system (as inhibitor of lipid peroxidation on mouse hepatic microsomal preparations) and in an in vivo system (on homogenized liver of bromobenzene-intoxicated mice) by quantification of thiobarbituric acid-reactive substances (TBARS). The comparison of results obtained from these two different systems was also made.

The results obtained suggest that pollen of *P. juliflora* is an important source of flavonoids, which can be considered as natural antioxidants. Mesquite pollen extracts showed antioxidant activity related to the flavonol concentration in both the in vitro-biological system and the in vivo system with a lower activity in the latter of these systems. Under in vivo conditions and in those in which a state of oxidation is not induced, a high concentration of flavonols in the extract of mesquite pollen can have a pro-oxidant effect.

Keywords: *Prosopis juliflora*; Mesquite; Honeybee-collected pollen; Phenolic profiles; Antioxidant capacity