

Abstract

Pesticide residues in honey and pollen from Seychelles against a target of 108 pesticides using LC-MS/MS were analyzed. Fifteen pesticides were detected, at trace levels (< 15 ppb) and below the acceptable maximum residue limits (MRLs) as per EU regulations. In honey, six insecticide and three fungicide residues were detected. Eight insecticide and four fungicide residues were detected in the pollen matrix. The least contaminated honey and pollen samples had three and nine chemical residues respectively while the most contaminated honey and pollen samples had eight and eleven chemical residues respectively. Contact and oral LD_{50} values were used to calculate Pollen Hazard Quotients (PHQ) = concentration in ppb \div LD_{50} as $\mu\text{g}/\text{bee}$. The pollen hazard quotients (PHQ) obtained are way below those reported in literature. Residues were detected in low quantities, however, their high frequency and diversity and possible synergistic interactions may lead to negative impact on honeybees' health in Seychelles.