



PHYTOCHEMICAL PROFILE OF *AGRIMONIA EUPATORIA* L. FROM BULGARIA AND EFFECTS OF ITS EXTRACTS ON *GALLERIA MELLONELLA* (L.) (LEPIDOPTERA: PYRALIDAE) LARVAE

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ABSTRACT

Plants contain polyphenolic compounds such as phenolic acids, flavonoids, stilbenes, lignans, essential oils, *etc.*, which are endowed with antioxidant properties. This study aimed to correlate the total phenolic compound and flavonoid content of *Agrimonia eupatoria* L. with its antioxidant properties and to determine some mineral elements (Na, K, Ca, Mg, P). The antioxidant capacity of the extract was tested by three methods (DPPH, FRAP, and TEAC). According to the results, the antioxidant content of *A. eupatoria* was found to be high ($IC_{50}=38.03\pm 0.01\mu\text{g/mL}$). Total phenolic and flavonoid contents were found as 13.66 ± 0.38 mg GAE/g and 4.65 ± 0.01 mg QE/g, respectively. Besides, the major components found in *A. eupatoria* were α -pinene (62.72%), n-hexadecanoic acid (11.41%), (5E,9E)-farnesyl acetone (6.64%), and (5E,9Z)-farnesyl acetone (3.65%). Heavy metal content in *A. eupatoria* was found within WHO limits. It was also investigated whether *A. eupatoria* has toxic effects. Because a medicinal plant is not supposed to harm metabolism, for this investigation, larvae stage of *Galleria mellonella* had selected as a test organism. In order to investigate the toxic effects, oxidative stress parameters (SOD, CAT, GST, GPx, MDA) and AChE activity were measured. And no harmful effects were observed at the doses administered at 24, 48, and 72 h.