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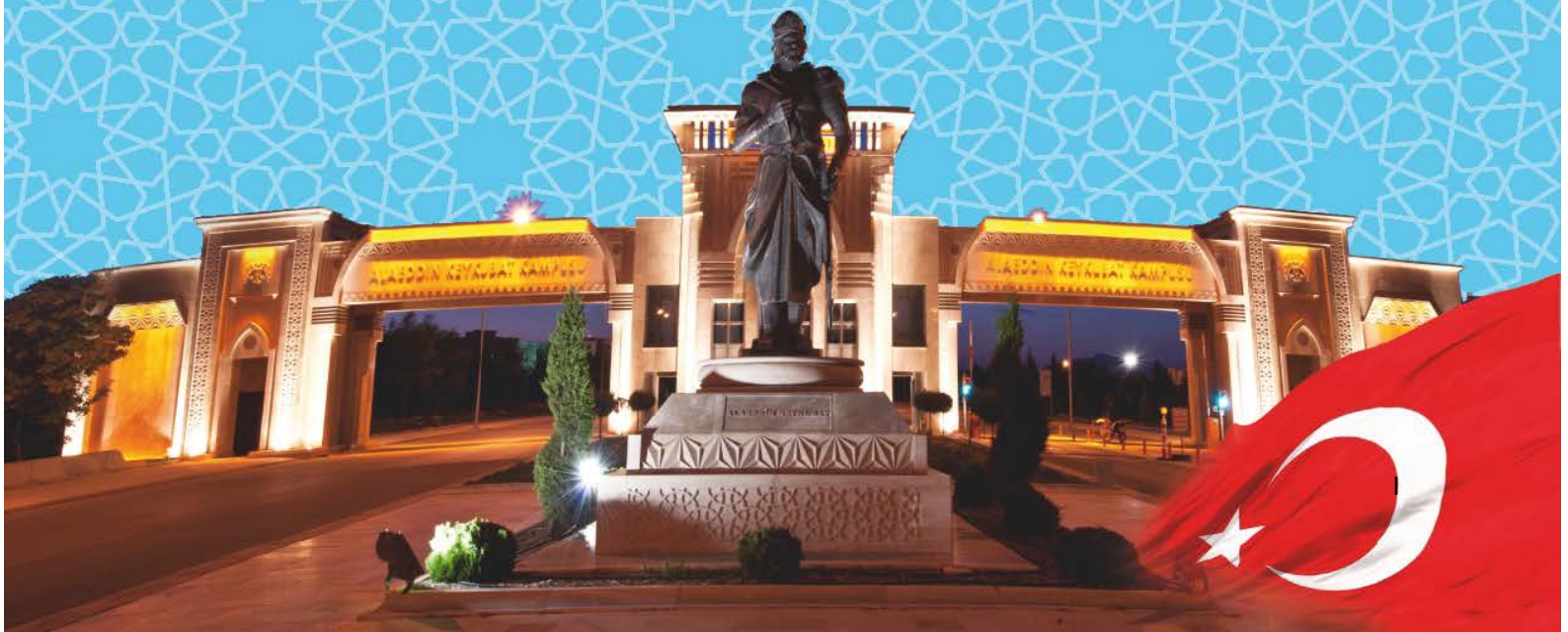
ABSTRACT BOOK



Investigation of Antioxidant Properties and Total Phenolic – Flavonoid Contents of *Diplolepis fructuum* (Rübsaamen, 1895) Extracts

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Introduction: The genus *Diplolepis* belonging to tribe Diplolepidini (Hymenoptera: Cynipidae) are known as rose gall wasps on *Rosa* spp. Six species of gall-inducing *Diplolepis* are reported on *Rosa* spp. in Turkey - *D. eglanteriae* (Hartig), *D. fructuum* (Rübsaamen), *D. mayri* (Schlechtendal), *D. nervosa* (Curtis), *D. rosae* (Linnaeus), and *D. spinosissimae* (Giraud). *D. fructuum* can cause great damage to wild rose, but it is known that galls generally have the highest antioxidant potential. So, in this study our aim is to determine antioxidant activity and total phenolic-flavonoid amounts of *D. fructuum*.

Material and Method: *D. fructuum* samples are collected from Eastern Black Sea Region (Artvin, Bayburt, Gümüşhane, Giresun, Ordu), Turkey between late 2017 and early 2018. After collection, the galls were kept in laboratory and checked weekly for emerged adults. The adults were fixed on cards and pinned. The adults were identified using available literature sources. After wasps left the galls, the extract is prepared with different solutions (ethanol, methanol, acetone, water). We used β-carotene/linoleic acid assay and DPPH radical scavenging activity method to determine the antioxidant activity of extracts of *D. fructuum*. Total phenolic and total flavonoid amounts were carried out respectively, Folin-Ciocalteu method and the aluminium chloride colorimetric method.

Results: The results of antioxidant activity showed that ethanolic extract of the galls showed higher antioxidant activity (91.73 ± 0.26 %) and radical scavenging activity (IC_{50}: 0,0239 ± 0,0009) than other extract. When the total phenolic amounts (286,22 ± 11,27 mgGAE/g) are examined, ethanol extracts showed a true correlation with antioxidant activity. The highest flavonoid amount of *D. fructuum* is obtain from water extract (14,95 ± 0,41 mgQE/g). According to our results, *D. fructuum* can be used as an important antioxidant source in pharmacological studies. In future work, valuable components can be detected and isolated.

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Keywords: Cynipidae, *Diplolepis fructuum*, Antioxidant, Phenolic, Flavonoid