The biological potential of plants. In our study, total antioxidant status, total oxidant status and DPPH free radical scavenging activity of *Euphorbia eriophora* (Euphorbiaceae) was used. The aerial parts of the plant were determined. The aerial parts of the plant were extracted with ethanol in a Soxhlet device. TAS, TOS and OSI values of the plant extract were determined using Rel Assay kits. In addition, the free radical scavenging activity of the plant extract was measured by the DPPH method. As a result of the studies, the TAS value of the plant extract was 5.390±0.227, the TOS value was 20.971±0.348, and the OSI value was 0.390±0.014. The DPPH free radical scavenging activity of aerial parts of *E. eriophora* has antioxidant potential and can be used as a natural antioxidant agent in this context.

Compounds with antioxidant properties are found in many plants. These plants play an important role in reducing the effects of harmful levels of oxidant compounds (Bobrovskikh et al., 2020; Ivanšová et al., 2021). In this context, it is important to investigate plants with antioxidant effects. In this study, *E. eriophora* (Euphorbiaceae) was used as the material. Euphorbiaceae is a family represented by 300 genera and 5000 species worldwide. Different *Euphorbia* species are used in the treatment of skin diseases, gonorrhea, migraine, intestinal parasites in many different parts of the world. *Euphorbia* members spread cosmopolitanly in many parts of the world. These species contain many phytochemical compounds (Yener et al., 2019). For this reason, the discovery of plants with biological activity is very important in terms of complementary medicine.
Materials and Methods

Plant samples were collected from Gaziantep (Turkey) and their identifications were made using Flora of Turkey Volume 7 (page: 595). The aerial parts of the plant were dried under suitable conditions. After drying, the samples were ground into powder. 30 g of the samples were weighed and placed in cartridges and extracted with ethanol at 50 °C for about 6 hours in a Soxhlet device. Then, solvents were removed from the obtained extracts.

Antioxidant Activity

Total antioxidant (TAS), total oxidant status (TOS) and oxidative stress index of EtOH extract of the plant were measured using Rel Assay TAS, TOS kits (Erel, 2004; Erel 2005). Trolox was used as the calibrator in the TAS kits and the results were expressed as mmol Trolox equiv./L. Hydrogen peroxide was used as calibrator in TOS kits and the results were expressed as μmol H₂O₂ equiv./L. Oxidative stress index (OSI) was determined by dividing the unit of TOS value to the unit of TAS value (Sevindik, 2005). Trolox was used as the calibrator in TOS kits and α-Carotene-linoleic acid test system, DPPH free radical and ABTS cation radical scavenging and cupric reducing antioxidant capacity (CUPRAC) methods. As a result of the study, it was reported to have high antioxidant activities (Yener et al., 2018). In our study, EtOH extract of the plant was used and its effects were investigated at 0.25, 0.5, 1 and 2 mg/mL concentrations. As a result of the study, it was observed that DPPH activity increased as the concentration of plant extracts increased. The highest activity was measured as 68.721±1.694 at 2 mg/mL from the test concentrations. The percent inhibition concentration of Ascorbic acid, the standard used, was measured as 96.388±0.670 at 2 mg/mL. It is seen that the DPPH activity of the plant extract at the same concentration is lower than the standard used. However, it was determined that the plant has DPPH activity. In this context, Yener et al., (2018) concluded that the findings we obtained are similar to their study, and that there is DPPH activity. As a result, it was determined that E. eriophora has antioxidant potential.

TAS values show all of the antioxidant compounds in the plant (Mohammed et al., 2019). In our study, TAS values of E. eriophora were determined for the first time. In previous TAS studies on different plants, Mentha longifolia subsp. longifolia (TAS: 3.628), Marrubium globosum (TAS: 7.677), Datura stramonium (TAS: 7.559), Thymbra spicata (TAS: 8.399), Rosa canina (TAS: 4.602), Scorzoner a papposa (TAS: 5.314), Salvia absconditiflora (TAS: 6.979), Salvia maulisid (TAS: 6.434), Rumex crispus (TAS: 6.758) and Gundelia tournefortii (TAS: 6.831) have been reported (Sevindik et al., 2017; Pehlivian and Sevindik, 2018; Pehlivian et al., 2018; Daştan et al., 2019; Saraç et al., 2019; Akgül et al., 2020; Mohammed et al., 2020a; Mohammed et al., 2020b; Mohammed et al., 2021; Pehlivian et al., 2021). Compared to these studies, the TAS value of E. eriophora was higher than M. longifolia subsp. longifolia, R. canina and S. papposa, and lower than M. globosum, D. stramonium, T. spicata, S. absconditiflora, S. maulisid, R. crispus and G. tournefortii. As seen in our study, it was determined that E. eriophora has antioxidant potential. It is thought that the antioxidant effective compounds in the body of E. eriophora can be determined and used as an antioxidant source with future studies.

TOS value shows the whole of the oxidant compounds produced by the plant as a result of environmental and structural effects and metabolic activities (Mohammed et al., 2019). In previous TOS studies on different plants, M.
longifolia subsp. longifolia (TOS: 4.046), M. globosum (TOS: 12.387), D. stramonium (TOS: 10.711), T. spicata (TOS: 6.530), R. canina (TOS: 6.294), S. papposa (TOS: 24.199), S. absconditiflora (TOS: 5.681), S. multicaulis (TAS: 22.441), R. crispus (TOS: 5.802) and G. tournefortii (TOS: 3.712) have been reported (Sevindik et al., 2017; Pehlivan and Sevindik, 2018; Pehlivan et al., 2018; Daştan et al., 2019; Saraç et al., 2019; Akgül et al., 2020; Mohammed et al., 2020b; Mohammed et al., 2021; Pehlivan et al., 2021). Compared to these studies, the TOS value of *E. eriophora* was lower than *S. multicaulis* and *S. papposa*, and higher than *M. longifolia* subsp. *longifolia*, *M. globosum*, *D. stramonium*, *T. spicata*, *R. canina*, *S. absconditiflora*, *R. crispus* and *G. tournefortii*. In this context, it has been determined that *E. eriophora* has high oxidant values by taking the plants mentioned in the literature as standard.

The OSI value shows how much the plant suppresses the oxidant compounds produced in the plant with endogenous antioxidants. High OSI value indicates that the plant’s defense system is insufficient against oxidant compounds (Mohammed et al., 2019). In previous OSI studies on different plants, *M. longifolia* subsp. *longifolia* (OSI: 0.112), *M. globosum* (OSI: 0.162), *D. stramonium* (OSI: 0.142), *T. spicata* (OSI: 0.078), *R. canina* (OSI: 0.138), *S. papposa* (OSI: 0.456), *S. absconditiflora* (OSI: 0.081), *S. multicaulis* (TAS: 0.349), *R. crispus* (OSI: 0.086), and *G. tournefortii* (OSI: 0.054) have been reported (Sevindik et al., 2017; Pehlivan and Sevindik, 2018; Pehlivan et al., 2018; Daştan et al., 2019; Saraç et al., 2019; Akgül et al., 2020; Mohammed et al., 2020a; Mohammed et al., 2020b; Mohammed et al., 2021; Pehlivan et al., 2021). Compared to these studies, the OSI value of *E. eriophora* was lower than *S. papposa* and higher than *M. longifolia* subsp. *longifolia*, *M. globosum*, *D. stramonium*, *T. spicata*, *R. canina*, *S. absconditiflora*, *S. multicaulis*, *R. crispus*, *G. tournefortii*. In this context, it is seen that the oxidant compounds produced by *E. eriophora* are insufficient in suppressing with the antioxidant defense system.

**Conclusion**

In this study, the antioxidant potential of *E. eriophora*, one of the plants used in alternative medicine, was determined for the first time with Res Assay kits. In addition, the DPPH free radical scavenging activity of the plant was determined. As a result of the studies, it was determined that *E. eriophora* has antioxidant potential.

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