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Evaluation of Phenolic and Carotenoid Content of Turf Grass Clippings

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Abstract: As consciousness and interest of modern society to recreational green areas in cities becomes more evident, turf cultivation arises as a significant agricultural sector. Thus, nowadays, turf cultivation is expanding to meet the demand for city parks, gardens and sports pitches. To meet the requirements of a selected area for turf cultivation, a wide variety of grass species are used in turf mixtures. In Turkey, species of *Festuca*, *Lolium* and *Poa* genera are the main preferred turf seeds for green areas. To maintain the green areas, grass cutting is applied from which clippings are obtained as wastes. These wastes are mostly utilized in animal feeding, but they may also contain bioactive compounds. Therefore, in the present study, the phenolic and carotenoid content of grass clippings of three main turf types (*Festuca*

arundinacea, *Lolium perenne* and *Poa pratensis*) were investigated. The highest phenolic content was found in the *Festuca arundinacea* clippings, while the lowest value was in the *Poa pratensis* clippings. On the other hand, the total carotenoid content of the turf grass clippings varied between 195.89 and 277.38 mg gallic acid equivalents / kg grass clippings. The results revealed that turf grass clippings contain phenolics and carotenoids. Since turf grass clippings arise as wastes of the maintenance of green areas, it might be of interest to further evaluate these bio-wastes as sources of valuable bioactive compounds, with possible antioxidant capacities.

Keywords: grass clippings, phenolics, carotenoids.

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