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Floristic composition and species diversity of plant communities associated with genus *Atriplex* in Nile Delta coast, Egypt

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ABSTRACT

Chenopodiaceae including *Atriplex* (300 spp.) as the largest genus of the family, with an ecologically important group in the world. The present study aimed to describe the plant communities associated with *Atriplex* spp. and its edaphic factors in Deltaic Mediterranean coast. A total of 92 species (44 annuals, one biennial, and 47 perennials) belonging to 73 genera and 24 families were recorded in 67 sampled stands in the present study. Poaceae, Asteraceae, and Chenopodiaceae are the largest families (18.48, 16.30 and 14.13 % of the total recorded flora, respectively). Therophytes were the most abundant life form and accounted for 52.63% of the total species. The chorological data indicated that the abundance of the Mediterranean (67.38%) and Saharo-Sindian (39.12%) element in the study area. The application of TWINSPAN analysis yielded four distinct vegetation groups (A, B, C and D); each is linked to one or more of the studied *Atriplex* spp. Group B was the most diversified (64 species) among the recognized groups with average Simposn index of 0.81, Shannon–Wiener index of 3.63 and Shannon-evenness index of 0.78. The main soil factors affecting the study *Atriplex* spp. are electrical conductivity, cations, porosity, potassium adsorption ratio (PAR), calcium carbonate, bicarbonate, pH and organic carbon.

Key words: *Atriplex*, Chenopodiaceae, vegetation, edaphic factors, diversity index, Deltaic coast.