Seasonal and multi-annual patterns of

Wetlands are one of the most biologically productive ecosystems, in which reedbeds of Phragmites australis are an essentially detritus-based system where litter decomposition is a fundamental process. This study represents a three year dataset describing cyclic trends of Phragmites australis leaf litter breakdown in a temporary and managed environment. For three years, 45 days field experiments were seasonally performed, using leaf bag technique within a large managed temporary pond (Natural Reserve of the Isonzo River Mouth, Northeast Italy), in order to analyze spatial and temporal variation in decomposition processes, to search for patterns on seasonal and inter-annual time scale and to infer the relevance of the main environmental features (physical and chemical) on decomposition dynamic. During the three years of analysis, decay rates (k) ranges were 0.0066–0.0075 days-1 in autumn, 0.0108–0.0158 days-1 in spring and k = 0.0168 days-1 in summer. Average mass loss per day % range was 0.97–1.31% in autumn, 1.12–2.04% in spring and 1.79–2.06% in summer. A well-defined seasonal cycle was observed through the study years as result of the drought-reflooding dynamic and the highest percentage (91.1%) of the average mass loss per day % variability was explained above all by rainfall, temperature and conductivity.

Auteurs du document : M. Bertoli, G. Brichese, D. Michielin, M. Ruzič, F. Vignes, A. Basset, E. Pizzul
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