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Distribution of special plants and hydrophytes
in the wetland of Youngsan River

Ihm, Byung-Sun, Jeom-Sook Lee* and Ha-Song Kim**

Department of Biology, Mokpo National University

Department of Biology, Kunsan National University**

Department of Environmental Preservation, Naju College**

These studies had been performed on the distribution of special plants and hydrophytes in the wetland of Youngsan River at the period of June 1997 to July 1999.

Hydrophytes were composed of 32 families 86 species and 36 families 135 species of hygrophytes. Among hydrophytes, emerged plant, floating-leaved plant, submerged plants and free floating hydrophytes were added 52, 15, 12 and 7 species respectively in this investigation. Threatened species were *Drosera rotundifolia*, *Utricularia racemosa*, *Utricularia bifida*, *Utricularia japonica*, *Hydrocharis dubia*. Endangered species of *Brasenia schreberi* and *Euryale ferox* were founded in these areas.

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Ecophysiological characteristics of Chenopodiaceous species

Choo Yeon Sik* and Seung Dal Song

Dept. of Biol., Dongeui University*, Dept. of Biol. Kyungpook University

In order to clarify the ecophysiological characteristics of Chenopodiaceae which widely distribute on saline and arid habitats, we collected 10 chenopodiaceous species, examined their inorganic and organic solute patterns, and confirmed several common physiological characteristics. In spite of high soil Ca^{2+} contents, Chenopodiaceous plants had a little water-soluble Ca within cells, but contained high contents of acid-soluble Ca particularly as a result of Ca-oxalate formation. These plant species also showed accumulation of inorganic ions such as K^+ , NO_3^- and Cl^- , and Na^+ especially in saline habitats instead of K^+ . Meanwhile, with respect to nitrogen metabolism they retained high N contents in tissue, but showed very low amino acid contents. Additionally, they contained very little proline known to act as cytoplasmic osmolyte. To ascertain whether this physiological characteristics in the field can also be found under controlled conditions, 5 chenopodiaceous plants were selected, and cultivated under salt treatment. As well as field-grown plants, selected species showed similar solute pattern in growth experiment. In conclusion, the family of Chenopodiaceae represents following physiological properties; high storage capacity for inorganic ions (especially alkali cations, nitrate and chloride), oxalate synthesis to maintain lower soluble Ca contents within cytoplasm, low contents of amino acids. In addition to some characteristics mentioned above, the physiological plasticities of Chenopodiaceae which can properly regulate their ion and solute pattern according to soil conditions may enable its representative to grow in dry sand dune and salt marsh habitats.