B513 Studies on the Application Plan and Purification Capacity of the Hydrophytes for Improvement of Water Quality of Effluent from Agricultural Land

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This study was presented to the application plan and measured to the purification capacity and distribution of the hydrophytes which are investigated areas, for improvement of water quality of effluent from agricultural land during the period from may to Sep. 1997. Water quality of effluent from agricultural land gradually increased the pollution sources of nitrogen and phosphorus during the farming season, these nutrients decreased with streaming down as paddy-irrigation ditch-wetland. Distribution of *Zizania latifolia* community was dominanted and formed a large community for high adaptablity to environmental change. In September, when aquatic plants grow up to maxium productivity, biomass of leaf and root *Zizania latifolia* were 4,032 and 7,680g.D.W./m^2h. After 5 days of growth, in laboratory condition, total nitrogen contents in leaf and root of *Zizania latifolia* increased by 26.9(4.6%) and 22.9mg/g d.wt.(7.5%), and those of total phosphorus increased by 6.84(40%), 5.02mg/g d.wt.(44%).After 24 hours, it could be revealed that removal capacity of NH_3-N, NO_3-N, PO_4^{3-} of *Zizania latifolia* were each 13.33, 16.66 and 4.50 mg/100g/wt.

B514 Syntaxonomy and Synecology of dry field vegetation

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In dry field, a substitute vegetation is maintained by many interference factors, especially continuous human impacts such as herbicide and fertilization. We surveyed phytosociologically 159 weed vegetation data collected from the abandoned and cultivating fields mainly distributed in Kyoungpook province including Taegu city. In a cultivating field, annual plants and annual plant commuinties were predominant depending on a degree of human impacts and different soil conditions. They are mostly semelparous summer annuals such as *Portulaca oleracea* community, *Centipeda minima* community, and *Acalypha australis* community. In an old field, at a first year after abandoned, annual plant communities such as *Siegesbeckia pubescens* community, *Echinochloa crus-galli* community, *Digitaria ciliaris* community, *Cyperus difformis-microiria* community, and a perennial plant community of *Erigeron annuus-canadensis* community were recorded.