

**B211** Marine Algal Flora and Community of Uihang in Taean Peninsula,  
West Coast of Korea

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The marine algal flora and community structure of Uihang in Taean peninsula, west coast of Korea, were investigated monthly during September, 1993 - August, 1994. As a result, a total of 78 algal species - 6 greens, 15 browns and 57 reds - was identified. The flora was classified as the mixed flora based on the species composition. In vertical distribution of intertidal marine algae, *Gloiopeltis furcata* was at the upper, *Sargassum thunbergii* and *Corallina pilulifera* at the middle, and *Ulva pertusa*, *Chondrus ocellatus* and *Hizikia fusiformis* at the lower zones. The dominant species throughout a year was *S. thunbergii*, and the subdominants were *U. pertusa*, *C. pilulifera*, *H. fusiformis* and *Dumontia simplex*.

**B212** Effects of Water Deficit on Growth and N<sub>2</sub>-Fixation of Soybean

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In order to clarify the effects of water deficit on the growth, nodulation and N<sub>2</sub>-fixation of soybean (*Glycine max* Merr. cv. *ehnhha*), we treated water deficit for 5 and 10 days at the vegetative stage (V6 stage) and reproductive stage (flowering stage: R2, full pod stage: R4). Soil water deficit inhibited remarkably leaf growth at the vegetative stage and nodule and root growth at the flowering stage, respectively. After flowering stage the numbers of root nodules began to reduce, attained to minimum particularly at the full pod stage treated with water deficit for 10 days. Compared to control plants, N contents of leaves suffered water deficit for 5 and 10 days during the vegetative stages decreased markedly (35% and 45% lowering of control) and in spite of rewatering, leaf N contents reduced were not recovered to the level equal to that of control. Water contents of leaves fluctuated with the soil water contents, their water potential changed within the range of -0.7 to -0.8 Mpa and showed minimum value of -2.25 Mpa treated with water deficit for 10 days at the vegetative stage. The specific nitrogenase activity (SNA) of soybean increased with growth and showed the maximum activity of 215.5  $\mu\text{mol C}_2\text{H}_4 \cdot \text{mg nodule}^{-1} \cdot \text{hr}^{-1}$  at the flowering stage, but after water deficit for 10 days SNA indicated decrease of 33% in comparison with that of control. While, the total nitrogenase activity (TNA) showed maximum value of 188.4  $\mu\text{mol C}_2\text{H}_4 \cdot \text{plant}^{-1} \cdot \text{hr}^{-1}$  at the full pod stage and 10-day water deficit at this stage decreased remarkably TNA of nodules. It seems that N<sub>2</sub>-fixation activity of soybean is strikingly influenced by the water deficit during the flowering stage.