

Study on Influences of Planting Methods and Site Conditions on Reed Growth

Syuuhei Tanaka

This study aims to find out influences of planting methods and site conditions on reed growth and to propose suitable planting conditions for each of six planting methods. Reed growth was observed at a reed plantation field on Lake Biwa shore, a planted reed community in deep pond experimental facilities and natural and planted reed communities around Lake Biwa. In addition, geographical & geological surveys, water & reed's component analyses, and photographing monitoring were carried out. In the results, findings are as follows: (1) All of the factors (dates, methods, sites, years, and any of their combinations) are statistically proved to have some significant influence on the reed growth variation with a risk less than 0.1%. (2) The erosion exceeding 11cm depth had adverse effects on reed growth, while the erosion less than 4cm did not show abstraction on reed growth apparently. (3) Reeds were able to sprout very well on the ground higher than -30cm of the Lake Biwa standard water level (B.S.L.). On the ground lower than B.S.L.-30cm, reeds planted with Mat Method produced the highest density of reed shoots among all of the methods applied. (4) Correlation analysis between water level and increase rate of reed density showed that deeper water levels (about 30cm for the first year, about 40cm for the second year) tend to inhibit reed growth, but that submerged conditions less than 30cm promote that compared with dry condition.

As those results, we suggested planting conditions of reed on Lake Biwa shore. The Mat method should be chosen on the ground between B.S.L.-70cm and B.S.L.-50cm, but the Pot method should be on the ground between B.S.L.-50cm and B.S.L.-20cm. The Big stump method should be used on the ground higher than B.S.L.-20cm.