

B420 Physiological Integration by ¹⁴C-Photoassimilates Sharing
among *Convallaria keiskei* Ramets.

Yeonsook Choung
Department of Biology, Kangwon National University

¹⁴C-photoassimilates translocation among ramets was studied to clarify the degree of physiological integration for a rhizomatous perennial, *Convallaria keiskei* in the field. Strong physiological integration in the translocation of ¹⁴C-photoassimilates between ramets was found throughout a growing season. More than 90% of photoassimilates was retained in the exposed shoots early spring. However, after shoots fully matured, photoassimilates were transferred to all connected organs such as rhizomes and other unexposed ramets. There was no significant differences in this trend when either parent-ramets or daughter-ramets was labeled. That is, unlabeled parents connected to labeled daughter-ramets also received the same amount of carbon from labeled daughters, indicating reciprocal bi-directional movement. The amount of photoassimilates transferred from labeled shoots was dependent on the weight of attached organs. Rhizomes were major storage sites for photosynthates within a clone even though the concentration of photosynthates was highest in roots of labeled ramets. Based on these strong integration between ramets by the pool of photosynthates, expansion of *C. keiskei* over large area at the semi-disturbed site could be explained.

B421 Distribution of Ion Concentration and pH value of soils in Yeocheon Area

Joon-Ho Kim, Hyeong-Tae Mun¹, Chang-Seok Lee²,
Young-Han You, Jong Wook Kim and Kyu-Song Lee*
Department of Biology, Seoul National University,
Department of Biology, Kongju National University¹,
Department of Biology, Seoul Women's University²

To elucidate local distribution of ion concentration and pH value of soils related to acidification the 11 soil chemical properties were determined within 30 km × 30 km (900 km²) of Yeocheon area and their isopleth maps were drawn. The lowest pH value centered at Homeong-dong (pH < 4.0), Yeocheon. The values of soil pH and concentrations of basic cations such as exchangeable Ca²⁺, K⁺ and Mg²⁺ decreased as approached to the pollution source. Concentration of Na⁺, however, was not significantly related to the distance from the source, which may be explained with the influence of a sea wind. Concentrations of acidic cations such as exchangeable Al³⁺, Mn²⁺ and Fe³⁺ and soil soluble SO₄²⁻ increased as approached to the source. Especially, the high soil SO₄²⁻ concentrations may be explained with increase of their adsorption with decreasing soil pH.