B420

Physiological Integration by ^{14}C-Photoassimliates Sharing among *Convallaria keiskei* Ramets.

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^{14}C-photoassimliates 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 ^{14}C-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

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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 km^2) 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 Ca^{2+}, K^+ and Mg^{2+} 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 Al^{3+}, Mn^{2+} and Fe^{3+} and soil soluble SO_4^{2-} increased as approached to the source. Especially, the high soil SO_4^{2-} concentrations may be explained with increase of their adsorption with decreasing soil pH.