E228 Some Aspects to the *in vivo* NRA in *Carex* Species.

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Up to now, there have been done much efforts in regard to NRA of dicotyledonous herbs and important monocot crops, but few to wild plants having canopy structure such as *Carex*. Thus, it was interesting to study the NRAs in some monocots in more detail. 5 *Carex* species were selected, which are native to acid-oligotrophic (*C. rostrata*), meso-eutrophic flysh (*C. pilosa*), meso-eutrophic saline (*C. distans*), and eutrophic (*C. acutiformis*, *C. gracilis*), habitats. The objectives of the present study are to determine: a) the optimum conditions of *in vivo* NRA assay for leaf samples of *Carex* species, b) changes of NRA according to section within leaf and leaf ages, c) diurnal variations. NRA of *C. rostrata* is readily saturated at lower substrate concentration than those of *C. distans* and *C. gracilis*. All *Carex* species investigated showed higher NRA in leaves than in roots, and maximal values at the middle section of each leaf and in youngest fully expanded leaves. Compared to *C. gracilis*, NR in leaves of *C. distans* was adapted readily to the light period. On the whole, *Carex* showed rather delayed diurnal variation.*In vivo* NRA assay serves as a useful tool to find out relative differences in varying environmental conditions, and also is helpful to understand nitrate reduction and basic nitrogen metabolism of plants having different canopy structure like genus *Carex*. However, for a correct application of the *in vivo* NRA test and hence a full understanding of N assimilation processes on natural habitats, a series of factors including N forms, light, temperature, canopy structure, and their interactions have to be taken into account.

E229 Disassembly of Chloroplast during Senescence of Detached Leaves in *Zea mays*

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Structural changes of chloroplast during senescence of detached leaves in *Zea mays* were investigated by measuring the disassembly of chlorophyll-protein complexes in detached leaves which had been kept in the dark for 7 days. The loss of chlorophyll induced degradation of chlorophyll-protein complexes in the senescing detached leaves. During dark-induced senescence. The amount of PSI complex containing LHCI apoprotein was slightly decreased until 5 day and rapidly decreased thereafter. Disassembly of RC-Core2 was delayed in the late stage of leaf senescence compared to the other chlorophyll-protein complexes. As gradual disassembly of trimeric LHCII progressed after the middle stage of senescence, there was a steady increase in the relative amount of SC-2 containing LHCII monomer. On the other hand, exogeneous applications of BA had a little effect in protecting disassembly of chlorophyll-protein complexes, particularly PSI complex, LHCII and SC-1 during the late stage of leaf senescence compared to the chontrol. These regults suggest, therefore, that BA gives rise to the stability of chlorophyll-protein complexes in the late stage of dark-induced senescence.