Carbohydrate Partitioning in Salt-Stressed Rice Grown under Elevated Carbon Dioxide. (C02-wilson180540-Poster)

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Abstract:

Rice, cultivar M202, was grown using Yoshida nutrient solution (EC = 0.9dS/m, control) in SPAR chambers at 350 and 800 ppm CO2. NaCl/CaCl (5:1 on molar basis) was added to achieve an EC of 3.9. Salinity significantly reduced tiller number, leaf area, shoot and root dry matter and leaf gas exchange. Elevated CO2 significantly (P<0.05) increased afternoon leaf starch accumulation relative to 350-ppm grown plants in both the control and salttreated plants. Afternoon leaf total soluble sugar level of 800-ppm grown plants (control? stressed) was 22% and 20% higher than that of the 350-ppm grown plants for both control and salt-treated plants, respectively. Leaves of 800-ppm grown plants accumulated significantly (P<0.05) higher level of total soluble sugar (at the end of the day?), compared to morning levels. However, no such significant (P>0.05) difference was found in the leaves of 350-ppm grown plants. Leaf afternoon starch and total soluble sugar concentrations of salt-stressed 800-ppm grown plants were found to be significantly (P<0.05) higher than that of non salt-stressed 350-ppm grown plants. These results suggest that the enhancement of carbohydrate availability may be involved in the alleviation of the reduction in tillering and growth of salt-stressed rice

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