Abscisic Acid Identification and Quantitation in Leaves of Juglans Seedlings During Waterlogging

B. Shaybany and George C. Martin

A rapid method was developed for extraction and purification of free abscisic acid from leaves of waterlogged Juglans seedlings. The results showed significant increases (6-15 fold) in leaf ABA contents of treated plants, reaching a maximum level after the first 12 to 18 hours of waterlogging. With the exception of J. nigra, the leaves of which were desiccated at 24 hours after treatment, ABA content rapidly declined to original levels by 30 hours of waterlogging treatment. The changes in ABA concentrations in walnut are likely secondary expressions to the stress induced by waterlogging.

Salinity

Sensitivity to Salinity

M. Viveros, P. B. Catlin, and R. M. Carlson

The roots of J. regia and J. hindsii seedlings grown in sand were treated with NaCl in the greenhouse. Symptoms of excess salts appeared earlier with J. hindsii, but J. regia roots were more severely damaged. Considerable seedling variability existed, and two J. hindsii seedlings with superior tolerance have been selected.

Procedures for growing walnut seedlings in both mist and solution culture have been developed. Experiments to measure differences in sensitivity to NaCl among J. regia, J. hindsii, and Paradox are in progress. Preliminary results indicate reduction in both root and shoot growth before toxicity symptoms appear in leaves.

Soil Pathogens

Comparison of Susceptibility of Juglans hindsii and J. regia to Ring Nematodes

B. F. Lownsbery and Gregory Noel

In July, 1975, seedlings of Juglans hindsii and J. regia (Serr and Eureka) were obtained from Dr. P. B. Catlin. Sixteen of each of these three kinds of seedlings were transplanted singly to 3-gallon cans of sandy soil. Eight of the 16 replicates were inoculated with 5000 Macrophomina