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ACC INDUCTION OF XYLOGENESIS IN HORSERADISH ROOTS

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Application of 1-aminocyclopropane 1-carboxylic acid (ACC) in aqueous solution to the basal ends of root segments of *Armoracia rusticana* P. G. Gaertn., B. Mey. & Scherb. (horseradish, Brassicaceae) induced the storied fusiform cells within the vascular cambium to differentiate directly, without preceding cell division or cell enlargement, into clusters of small-diameter tracheary elements (TEs). Control cuttings (provided water only) produced no TEs, and ethephon (2-chloroethylphosphonic acid) induced no TEs to differentiate. The synthetic auxin 1-naphthalene acetic acid (NAA) promoted an increase in the radial width of the cambial zone, but the effect of NAA on xylogenesis was negligible. However, a combination of ACC and NAA stimulated TE production to a greater extent than ACC alone. These observations are evidence that ACC rather than auxin is the hormone controlling induction of TE differentiation, and they corroborate earlier findings with conifers where ACC also induced cells to differentiate into TEs (Kijidani, Y., Wu, Z. and Savidge, R. A. 2001. *Phytomorphology* GJI:185-200).