Bradyrhizobium japonicum Mutants Defective in Cyclic β-Glucan Synthesis Show Enhanced Sensitivity to Plant Defense Responses

Axel Mithöfer[a]*, Arvind A. Bhagwat[b], Donald L. Keister[c] and Jürgen Ebel[a]

[a] Botanisches Institut der Universität, Menzinger Str. 67, D-80638 München, Germany.
Fax: ++4989178227 4. E-mail: amithoef@botanik.biologie.uni-muenchen.de
[b] Product Quality and Safety Laboratory
[c] Soybean Genomics and Improvement Laboratory, USDA, Agricultural Research Service, BARC-W, Beltsville, MD 20705, USA

* Author for correspondence and reprint requests

Z. Naturforsch. **56 c,** 581–584 (2001); received April 3, 2001

Bradyrhizobium japonicum, Cyclic β-Glucans, Plant Defence

Susceptibility of the nitrogen-fixing soybean symbiont *Bradyrhizobium japonicum* to inducible plant defense metabolites such as phytoalexin and H_2O_2, was investigated. On the wild-type strain USDA 110 the soybean phytoalexin, glyceollin, showed bacteriostatic activity. Viable bacteria isolated from intact nodules were adapted to glyceollin. H_2O_2 in physiological concentrations did not affect wild-type bacteria. *B. japonicum* mutants defective in the biosynthesis of cyclic β-(1→3)-(1→6)-glucans showed higher susceptibility to both phytoalexin and H_2O_2.