EMILLEE, CHERTE A.¹, CARDE E. MINDELS², and TODD E. CYMBALUK². ¹Blaconkrol Flant Disease Lab, USDA-AMS, Bidg, OllA, Roam 275-M, Beltsviile, MD 20205, and ⁴Borthwest Experiment Station, University of Minnesota, Crookstan, NM 26716. Susceptibility of sugarbeet plants of different ages to Rhizbetonia, root and crown rot.

ABSTRACT

Anizotionit solant AS-2-2 causes root and prown rot of sugarbeat

SAUNDERS, JOSEPH W.^{1*}, CHIA-JUNG TSAI², and ENRIQUE SAMPER², USDA, Agricultural Research Service, Sugarbeet, Bean and Cereal Research, and ² Department of Crop and Soil Sciences, Michigan State University, East Lansing, MI 48824. - <u>Alternative nitrogen and carbon sources for</u> <u>sugarbeet tissue culture</u>.

Conventional plant tissue culture media contains sucrose as a carbon (C) source and a mixture of nitrate and ammonium as nitrogen (N) sources. In order to identify media for selection of biochemical mutants, we examined the ability of the endogenous beet trisaccharide raffinose and one of its constituent monosaccharides, galactose, to serve as sole C source, and of nitrate, ammonium, glutamine, glutamate, proline, urea, choline and glycine betaine (GB) to serve as sole N source for several modes of culture of clone REL-1 in vitro. Raffinose was similar to sucrose in support of suspension culture plate-out (SP) growth, callus initiation with shoot regeneration from leaf discs, and shoot culture (SC). Galactose was moderately supportive of SP growth but was inadequate for leaf disc callusing and SC. Nitrate, ammonium, glutamine, glutamate, and urea, all at 60 μ M N, were moderately supportive of SP and SC growth compared to the nitrate-ammonium mix in Murashige-Skoog medium. Proline was poorly supportive, and choline and GB were nonsupportive. Tissue ability to utilize raffinose, glutamine and glutamate may preclude their use as N source in media to select for biochemical mutants that accumulate less of these processing impurities. GB utilizing mutants, might, however be selectable with GB as sole N source.

from sugarbant (5.2); these values were the same for the consecutive and standitimeous inoculations. However, virulence of isolate affected host and the stande from plote been averaged rook rok ratings of 5.8 and 5.0 in Maribo Ultramone and AGN 184, respectively. The isolate from sugarbest averaged rook rok ratings of 4.1 and 3.3 on Maribo Ultramone and will 184, researcherive.

On parato-devirase agar, the isolate from pinto bean grew 0.01-8.0 nm/24 or faster than the isolate from sugarbeet at 25-35 C. Average weekly air temperatures were in this range in 5 of 6 wk following the consecutive and cimultaneous inoculations in both seasons.

Based on time of inocolation, tolerance to Bnizostania root and crown rot increased with increasing root age fur both cultivers under conditions favorable for disease development, even though XG-2-2 isolates differed in virulence.

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