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■ Japanese journal of crop science

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[\[Full-text PDF \(836K\) \]](#) [[References](#)]**Plant Regeneration and Thiophene Production in Hairy Root Cultures of Rudbeckia hirta L. Used as an Antagonistic Plant to Nematodes**

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Abstract:

In *Rudbeckia hirta* L., an antagonistic plant to nematodes, hairy roots were induced by infection with a wild strain (A-5) of *Agrobacterium rhizogenes*. Hairy roots cultured in half-strength MS agar medium without phytohormones showed vigorous growth and extensive lateral branching. Mikimopine (opine) was detected in the extract of hairy root by paper electrophoresis. Adventitious shoots were induced on the surface of hairy roots after 30 to 50 days of transfer to half-strength MS agar medium supplemented with BAP at 0.5-10.0 mg/l. The highest frequency of shoot formation was obtained at 0.5 or 1.0 mg/l BAP in combination with 0.1 mg/l NAA. Plants regenerated from hairy roots showed morphological alterations such as wrinkled leaves, small size of flowers and abundant lateral branching of roots. A nematocidal compound, α -terthienyl, was detected in the extract from lateral roots of the regenerant.

Keywords:

Agrobacterium rhizogenes, Antagonistic plant, Hairy root, Nematode, *Rudbeckia hirta*, Thiophene

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