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African Journal of Agricultural Research Vol. 1 (4), pp. 111-117, November 2006  
ISSN 1991- 637X© 2006 Academic Journals

**Full Length Research Paper**

## Gravitropism of loblolly pine (*Pinus taeda*) radicles after chemical sterilization of seeds

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Accepted 10 November, 2006

### Abstract

Certain types of chemicals can affect the gravitropism of roots. In a laboratory study, intact loblolly pine (*Pinus taeda* L.) radicles (emerged from H<sub>2</sub>O<sub>2</sub>-treated seeds) exhibited positive gravitropism 8 h after horizontal placement in sterile conditions. The growth angle decreased from almost horizontal (85°) to 21° within one week after treatment (90° is horizontal and 0° is vertical). When seeds were treated with HgCl<sub>2</sub>, radicles under sterile growing conditions expressed gravitropism 6.9 h after horizontal alignment. Growth angle changed from 91° to 64° over a 10-day period. Cubic and quadratic functions were used to model growth angle as a function of time. Under similar experimental conditions, radicles from HgCl<sub>2</sub>-treated seeds showed a greater degree of gravitropism than those from H<sub>2</sub>O<sub>2</sub>-treated seeds (as indicated by the growth angle). These results indicate that the gravitropism can occur in sterile environments and that the type of chemicals used to sterilize seeds might affect the rate of geotropic response.

**Key words:** Loblolly pine, radicle, geotropic growth, microorganism, H<sub>2</sub>O<sub>2</sub>, HgCl<sub>2</sub>, seed sterilization.

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