Resveratrol Accumulation and Resveratrol Synthase Gene Expression in Response to Abiotic Stresses and Hormones in Peanut Plants. (C07-yun050842-Poster)

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Abstract:

The peanut is one of the limited number of plant species that synthesize resveratrol, which is both a phytoalexin with antifungal activity and a phytochemical associated with reduced cancer risk and reduced cardiovascular disease. This study was conducted to better understand the tissue specific and inducible accumulation of resveratrol in peanut plants. Resveratrol was present at relatively high levels in roots and pods, but at below the detection limit in leaves. In the pods at mid-maturity, resveratrol was present at 2.60, 0.06, and 0.05ug/g FW in the shell, developing seed and seed coat, respectively. Accumulation of resveratrol in leaves increased over 200-fold in response to UV light, over 20-fold in response to paraquat, and between 2- and 9-fold in response to wounding, H2O2, salicylic acid(SA), jasmonic acid (JA) and ethephon, 24 h after treatment. No accumulation of resveratrol was induced by abscisic acid. These results demonstrate that stress hormones such as ethylene, SA and JA play a role in the accumulation of resveratrol in response to biotic and abiotic stresses in peanut plants.

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Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 4:00-6:00 pm
Poster Board Number: 1104L

Keywords:

Resveratrol, Resveratrol synthase, Salicylic acid, Yeast extract