



UVB EXPOSURE INDUCED ACCUMULATION OF PHENOLICS AND RESVERATROL AND ENHANCED ANTIOXIDANT ACTIVITIES IN PEANUT SPROUTS

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ABSTRACT

Resveratrol is a phenolic compound which naturally presents in peanuts (*Arachis hypogaea* L.) but with low amount. Resveratrol and phenolic compounds are induced in plants by UVB exposure. This study aimed to investigate the accumulation of phenolics and resveratrol and antioxidants in sprouts of three peanut cultivars, Lac sen, L14 and L27. Peanut seeds were germinated under control and UVB exposure (one hour every day at 9 am). Sprouts were harvested at three stages: 1, 3 and 5 days (D1, D3 and D5). Total phenolic (TP) and resveratrol contents and antioxidant activity were measured using Folin-Ciocalteu, HPLC coupled with UV detector and DPPH methods, respectively. The study found both germination time and UVB exposure induced the accumulation of phenolics and resveratrol and increased the antioxidant activity. Compared to D1 sprouts, D5 sprouts had significant increases in TP and resveratrol contents and the antioxidant activity by 42.31%, 508.75% and 77.91%, respectively, while UVB exposure enhanced TP and resveratrol contents and the antioxidant activity by 11.11%, 62.81% and 26.17%. Resveratrol content ranged from 5.57 µg/g DW in L27 sprouts at D1 under control conditions to 110.16 µg/g DW in Lac sen sprouts at D5 under UVB exposure. UVB exposure induced the accumulation of phenolics, particularly resveratrol in peanut sprouts, suggesting this is a potential approach to produce functional foods from peanut sprouts.