

Title Methyl jasmonate enhances anthocyanin accumulation and modifies production of phenolics and pigments in 'Fuji' apples.

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Abstract

Effects of artificial ultraviolet-visible light and methyl jasmonate (MJ) treatment on 'Fuji' apple [*Malus sylvestris* (L.) Mill. var. *domestica* (Borkh.) Mansf.] fruit peel anthocyanin, phenolic, carotenoid, and chlorophyll production were examined using tristimulus color analysis and reverse-phase high performance liquid chromatography. Anthocyanin synthesis was enhanced by light and MJ treatment. Chlorogenic acid and most cyanidin, quercetin, and phloretin glycosides increased with MJ treatment concentration. Light alone also promoted increased production of most of these compounds. Production of catechin, (-)epicatechin, quercetin, and quercetrin was not enhanced by either light or MJ treatment. Light and MJ enhanced beta -carotene and chlorophyll b, synthesis but not xanthophyll or chlorophyll a synthesis. The chlorophyll a/b ratio decreased with MJ dosage. Results suggest MJ may provide a viable means of enhancing apple fruit coloration and other photoprotective mechanisms.