Antioxidant Capacity and Phenolic Content of Different Colored Table Grape Genotypes

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Due to the documented health benefits of phytochemicals found in grapes and wine processing by-products, our research has focused on:

1. Screening commercial varieties and advanced breeding selections of table and wine grapes for antioxidant capacity, phenolic composition and content.
2. Determining how maturation influences the antioxidant capacity and phenolic content of a highly pigmented red wine grape (Arkansas-1575).
3. Optimization of pressurized fluid technologies for isolating phenolics from grape skins, seeds and pomace.
4. Determining the antioxidant capacity and cyclooxygenase inhibitory properties of flavonoids isolated from red wine grapes.
5. Optimization of spray drying parameters to stabilize anthocyanin-rich grape extracts.

Manuscripts submitted or in press:

1. Effects of solvent and temperature on pressurized liquid extraction of anthocyanins and total phenolics from dried red grape skin.
2. Subcritical water extraction of procyanidins from grape seeds.
3. Improved supercritical fluid extraction of procyanidins from grape seeds using near critical mixtures of carbon dioxide and aqueous solvents.
4. Flavonoid glycosides and antioxidant capacity of various blackberry, blueberry, and red grape genotypes determined by a novel HPLC-MS method.

Grants funded:

1. Development and health benefits of functional foods derived from mid-South crops.
2. Determination of anti-inflammatory and antioxidant properties of flavonoids isolated from blueberries, blackberries, grapes and spinach.