

phenolics increased 17%, anthocyanins 9%, flavonols 53%, and ellagitannins 13%. Selection A-2450 had the highest level of total phenolics and total anthocyanins, 502.7 mg/100 g and 271.8 mg/100 g, respectively, while 'Prime-Ark® Traveler' had the lowest levels (336.3 mg/100 g and 124.4 mg/100 g). 'Prime Ark® 45' had the highest level of flavonols (14.8 mg/100 g) and 'Ouachita' the lowest (6.3 mg/100 g). 'Natchez' had the highest level of ellagitannins (42.8 mg/100 g) and A-2453 the lowest (18.2 mg/100 g). Our data support the conclusion that these genotypes can be stored for 7 d without loss of nutraceutical compounds.

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### **(184) Elucidating Mechanisms of Postharvest Shelf-life in Blueberries**

Yi-Wen Wang\*

University of Georgia, Athens, GA

Shan Jing

University of Georgia, Athens, GA

Rosalia Garcia-Torres

University of Georgia, Athens, GA

D. Nesmith

University of Georgia, Griffin, GA

Savithri Nambesan

University of Georgia, Athens, GA

Blueberry is a rapidly growing commodity in the United States with a production of ~261,374 metric tonnes in 2014. One of the reasons for this increased demand is consumer awareness about its potential health benefits. However blueberry is a highly perishable commodity and has a shelf life of 2–3 weeks. With increased production it becomes important to develop an understanding of mechanisms toward extending its shelf life. Currently the factors that determine shelf-life extension in blueberries are unknown. The objective of this study was to investigate the mechanisms that determine the postharvest shelf life in blueberries. Eight blueberry cultivars were evaluated for various postharvest attributes such as fruit weight, fruit texture, soluble solids and titratable acidity during storage. Of these, we identified two cultivars with higher firmness and longer shelf life and two other cultivars with poor fruit attributes during storage. These fruits are being evaluated for sugars, sugar-derivatives, organic acids, and flavonoids content using gas chromatography to identify metabolites that may be critical in extending shelf life and maintaining superior fruit quality attributes. In addition, transcriptome sequencing will identify key metabolic pathways that contribute to shelf-life extension in blueberries. Collectively, this study will improve the understanding of the relationships among changes in metabolite composition and key hormone-metabolism/regulatory pathways in blueberries, and can further extend the shelf-life in blueberry.

## **Poster Session—Propagation 2**

### **(227) Pre-grafting Foliar Trimming Intensity Effects on Healing and Regrowth of Newly Grafted Pepper Seedlings**

Mahmoud Mohammad Ahmed Soltan\*

The Ohio State University-OARDC, Wooster, OH

Farouk Abd El-Salam El-Aidy

Kafr El-Sheikh University, Kafr El-Sheikh, Egypt

Matthew Kleinhenz

The Ohio State University-OARDC, Wooster, OH

Wound healing is a complex process involving a cascade of coordinated reactions at the wound site and elsewhere. Callus formation is a common early step in restoring tissue structure and function. Newly grafted pepper seedlings tend to callus less and require more time to heal than tomato and other routinely-grafted crops, challenging propagators. Since low-intensity wounding can trigger whole-plant responses that may speed wound healing at grafting, we set out to determine if the timing and intensity of scion foliar trimming would influence the success or regrowth rate in newly grafted pepper plants. 'Aristotle' and 'Scarface' seedlings were grown from seed in a climate-controlled greenhouse at OARDC for thirty-three days. On Day 33 after seeding, non-destructive measures were taken on representative plants and a subset of plants was sacrificed to record plant biomass and other variables. Either 50% or 100% of the leaf area was removed from two other sets of identical plants on the same day with before and after measures confirming that treatment targets were met. The process was repeated on Day 35 after seeding, with untrimmed and trimmed (50% and 100% two and zero days before grafting) scions then splice-grafted to untrimmed rootstock seedlings. Grafted and ungrafted plant condition was monitored for fifteen days after grafting using a total of fourteen destructive and non-destructive measures. Graft success was unaffected by trimming, with success rates exceeding 90% in all treatments. However, levels of grafted plant growth (fresh and dry wt., leaf area) through fifteen days after grafting tended to be greatest when scion seedlings were not trimmed before grafting, although 50% trimming increased rootstock and scion stem diameter near the graft union. Timing showed significant differences in seven variables, whereas intensity presented significant differences in twelve variables. While trimming appears to slow grafted pepper plant regrowth, it did not lower grafting success. If trimming is thought to confer advantages in large-scale grafting operations, follow-up research should focus on why it slowed regrowth in this study.

### **(228) Somatic Embryogenesis of the Rare Cultivars, *Stewartia malacodendron* 'Delmarva' and *Stewartia ovata* 'Red Rose'**

Heather Gladfelter\*

Univ of Georgia, Athens, GA

Thomas Clark

The Polly Hill Arboretum, West Tisbury, MA

An asterisk (\*) following a name indicates the presenting author.