

**Title:** Investigation of anthocyanin production in rabbiteye cultivars for commercial market and ornamental pink-fruited varieties.

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Blueberries are considered “super fruits” due to their high antioxidant content. The nutraceutical capacity of blueberries have been associated with the presence of flavonoids such as anthocyanins, flavonols, phenolic acids and proanthocyanidins. Many of these antioxidants are secondary metabolites, which accumulate during blueberry fruit development, mainly ripening. In spite of the importance of anthocyanins, there is huge gap in our in genetic information available for controlling this trait. Blueberry fruit with higher anthocyanin content is a valuable trait and information generated about anthocyanin production will aid in the breeding of blueberries with increase anthocyanins. This proposal aimed to develop resources and information on endogenous plant hormones, ethylene and ABA, and their effects on anthocyanin production in blueberries. We proposed to evaluate three pink-fruited ornamental cultivars and compare it to commercial cultivars to understand the relationship between ethylene, ABA and anthocyanin production. It was hypothesized that in the three ornamental cultivars, fruit remain pink owing to altered operation of a switch for anthocyanin production. In the current year fruit were available only from the ‘Pink Lemonade’ cultivar. In the pink fruited cultivar ‘Pink Lemonade’ the pattern of ethylene production was similar to ‘Premier’ and ‘Powderblue’, exhibiting an increase during ripening initiation. ‘Pink Lemonade’ produced less ethylene than ‘Premier’, however, the rate of ethylene production was similar to Powderblue. Overall the pattern and amount of ABA content in ‘Pink Lemonade’ was similar to ‘Powderblue’ with an increase during ripening initiation and a decline as ripening progresses. In this study, similar levels of production in ethylene and ABA in ‘Pink Lemonade’ and ‘Powderblue’ suggested that these hormones may not play an important role in altering anthocyanin production in ‘Pink Lemonade’ blueberry. A recent study found a positive correlation between MYB transcription factor/ basic-loop-helix (bHLH) domain protein/ WD-repeat (MYB-bHLH-WD40) complex and anthocyanin accumulation in ‘Pink Lemonade’. This study suggested the switch of anthocyanin production in pink fruited cultivar, ‘Pink Lemonade’ is possibly due to the *MYB1* transcription factor. Future studies will focus on hormone content and transcription factor abundance of the other pink fruited cultivars.