

Public Abstract

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Title:ANTHOCYANINS FROM NORTON POMACE AND COLOR STABILITY ANALYSIS FOR USE AS A COLORANT IN PLAIN GREEK YOGURT

Anthocyanins were extracted, concentrated and then applied as a natural colorant to a food matrix. This project assessed the use of anthocyanins extracted from Norton pomace for use as a natural colorant in Greek yogurt. Increasing the use of natural colorants could potentially reduce risks associated with the use of synthetic dyes and pigments, and could also be beneficial by finding an application of a waste product of the wine industry. A HPLC-DAD with C-18 column was used to separate polyphenolics, including anthocyanins from the pomace. A roto-vaporator at 50°C under vacuum was used to concentrate the dye. Anthocyanin dye was tested for reproducibility, color degradation, and shelf-life. The extraction and concentration overall was reproducible and there was no significant difference between most wineries sampled. From the color degradation testing, when the extracted dye was used as a colorant in plain Greek yogurt, it can be concluded that when all samples were compared (not winery specific) there was a significant difference in L* values (white to black) between week 1-6. There was no significant difference in a* values (green to red) for weeks 1-6, while for b* values (blue to yellow) there was a significant difference from week 1-6. Winery to winery color degradation comparisons deduced that Adam Puchta and Stone Hill's Norton pomace extract were significantly different in L*a*b*. Stone Hill was also significantly different in b* value from Mizzou. For all other wineries, the L*a*b* values were not significantly different, showing a fair amount of color stability in the anthocyanin dye. Based on HPLC results it can be speculated that in all wineries there was a trend that malvidin-3-O-glucoside was the predominant compound, though peonidin-3-O-glucoside, and in some cases cyanidin-3-O-glucoside closely followed. These results coincided with previous studies. For the Adams assay, it can be concluded that there was no significant difference in tannin, phenolic or anthocyanin content among pomace from the four wineries in this study. These results coincide with previous studies and showed an abundance of tannin, phenolic content and anthocyanins in the Norton grape pomace.