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Effects of various clarification agents on the anthocyanins and color of red grape juice from Kalecik Karasi grapes (*Vitis vinifera* L)

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In this study, the effects of five different types fining agents (gelatin, bentonite, albumin, casein and chitosan) on anthocyanins (ACNs) and color of red grape juice produced from Kalecik Karasi variety (*Vitis vinifera* L.) were investigated. Total monomeric ACN, ACN composition, phenolic composition, polymeric color and reflectance color analyses were carried out. After clarification, the turbidity of red grape juice decreased from 28 NTU to 4.2-4.4 NTU with bentonite+albumin and bentonit+casein combinations followed by bentonite (5.7 NTU) and bentonite+gelatin (8.8 NTU). Chitosan and bentonite+chitosan combination resulted in the highest turbidity level (11 NTU). Clarification with bentonite, bentonite+casein and bentonite+albumin and albumin+gelatin did not lead to significant ACN losses. However, chitosan (38%), bentonite+chitosan (26%) and bentonite+gelatin (20%) resulted in drastic reductions in ACN contents. Four major ACNs were identified in red grape juice. HPLC analyses revaled that malvidin-3-glucoside (57%) was the major anthocyanin followed by peonidin-3-glucoside (10%), cyanidin-3-glucoside (6%) and delphinidine-3-glucoside (4%). Highest loss in phenolic content was found in samples clarified with casein and albumin (29-32%). High correlation was found between phenolic content and turbidity (r=0, 9396). While casein and albumin caused most reduction in catechin, chitosan removed caffeic acid at the highest level. Clarification with casein and albumin resulted in the highest clarity among all clarification treatments and did not cause much change in color values of red grape juice. Bentonit+casein and bentonit+albumin are recommended for the clarification of red grape juice with highest clarity and lowest color loss.

Biography

Sevgin Diblan was graduated from Department of Food Engineering at Suleyman Demirel University as honor student in 2011, and then she received her Master degree at the age of 24 years from Department of Food Engineering at Ankara University in 2013. Currently, she is doing her PhD in the Department of Food Engineering at Gaziantep University. She has been working as a Research Assistant in the Department of Food Engineering at Adana Science and Technology University since 2013.

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Notes:

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