

Abstract: NeSA202100poster-08: Effect of Branch Maturity on Nutritional Value of Jujube Fruit

Time: 12:00-1:00 PM

Presenter:

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Jujube (*Ziziphus jujuba* Mill.) also known as ‘Chinese date’ has been recognized as a good source of different health beneficial compounds. Health beneficial property of different compounds such as phenolics, cyclic AMP, vitamin C etc., present in jujube has attracted interest of researchers. However, nutrient profile, composition, and dynamics have been reported to be influenced by cultivar, geography, and maturity. We assessed the effect of branch maturity on nutrients from full red jujubes: ‘Xiang’ ‘Sherwood’, and ‘Lang’ collected from Leyendecker and Los Lunas, New Mexico in 2020. We compared moisture content, total soluble solid (TSS), total phenolic content (TPC), proanthocyanidin (PA), antioxidant activity (DPPH and FRAP method), and vitamin C in jujube fruits harvested from one-year-old branches and two-year-old or older branches. Total phenolic content (TPC), proanthocyanidins (PA), antioxidant activity, and ascorbic acid were quantified using the Folin-Ciocalteu method, vanillin colorimetric method, and visual titration method, respectively. Irrespective of cultivar and branch maturity, we found no significant difference ($P < 0.05$) in all measured variables: moisture, TSS, TPC, PA, antioxidant activity, and vitamin C between fruits harvested from a year-old branches and more than a year-old branches. Depending on cultivar and location, TPC, PA, DPPH, FRAP, and vitamin C in fruits from one-year-old branches were 11.9-15.3 mg GAE/g, 2.1-2.4 mg proanthocyanidin B₂ equivalent/g, 78.6-87.6 % inhibition, 8.4 to 11.4 AEAC/g, and 636.1 to 924.3 mg/100 g on a dry weight basis, respectively. Similarly, TPC, PA, DPPH, FRAP, and vitamin C in fruits from two-year-old or older branches were 11.5-13.9 mg GAE/g, 1.9-2.8 proanthocyanin B₂ equivalent/g, 78.6-87.9 % inhibition, 7.9-12.3 ascorbic acid equivalent/g, and 560.6-929.9 mg/100 g on a dry weight basis respectively. For all cultivars including a common cultivar ‘Sherwood’ from both locations, we found that jujube from both one-year-old and two-year-old or older branches had higher vitamin C for samples from Leyendecker compared to Los Lunas. Results from this study also suggested that jujube fruit in the same tree have similar value of moisture, TSS, TPC, PA, DPPH, FRAP, and vitamin C content irrespective of branch age, but varies with cultivar and location.

