

Public Abstract

First Name:Jackie

Middle Name:Leigh

Last Name:Harris

Adviser's First Name:Michele

Adviser's Last Name:Warmund

Co-Adviser's First Name:

Co-Adviser's Last Name:

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Title:Effect of Rootstock on Vegetative Growth, Yield, and Fruit Composition of Norton Grapevines

Norton is an important commercial grape cultivar commonly grown in Missouri and the surrounding region because of its wine quality and disease resistance. However, Norton vines grown on their own root system typically produce fruit with high pH, malic acid, and potassium, which are known to reduce quality, aging potential, and stability of wine. Additionally, Norton vines often produce excessive vegetative growth. Thus, effects of selected rootstocks on Norton fruit composition, yield, and vegetative growth were studied in Phelps County, MO within a commercial vineyard during 2010 and 2011. Rootstocks included 3309C, 101-14, Schwarzmann, 5BB, SO4, 1103P, 110R, 140Ru, 1616C, and 44-53M. Norton vines on their own roots were also included as a control. Rootstocks did not affect vegetative growth or fruit characteristics (organic acids, glucose, or fructose). However, Norton petiole contents of calcium and phosphorus were deficient on some rootstocks in 2010 and 2011. Vines on 101-14, 110R, and 1616C rootstocks produced greater fruit yield than Norton vines on their own roots. Nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, and manganese contents in juice were also affected by rootstock, but all were within acceptable ranges. While fruit yields were enhanced by the rootstocks, it may be necessary to alter fertilization and pruning practices to sustain high cropping.