

Effect of Certain Grape Rootstocks on Harvest Indices in Pinot Noir Grape Clone 2A

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In a maritime climate with low growing degree days (GDD), a major factor in determining fruit maturity is the level of titratable acid (TA). In 2000 a trial was begun to test the effect of 7 grape rootstocks grafted on Pinot Noir 2A (Wadenswil clone). Rootstocks were Millardet et de Grasset 101-14 and 420A, Couderc 3309, Kober 5BB, Malegue 44-53, Riparia Gloire and Teleki 5C. Control was self rooted plants. Plots each contained 5 plants and were replicated 5 times. The location was 3 miles from Puget Sound in western WA, with average 1693 GDD during the 6 harvest years. In 2002, GDD were low at 1527, went up to 1945 in 2003, and declined thereafter. Juice analysis at harvest began in 2002 and initially showed that Pinot Noir 2A grafted on all rootstocks had significantly lower TA than self rooted plants. In 2003 only plants grafted on 101-14, 3309, and 420A showed significantly lower TA than self rooted plants. Plants on 5BB and 5C were lower but not significant at the 5% level, while Riparia Gloire and 44-53 were intermediate. In 2003-4 plants on rootstocks 5BB, 5C, and Riparia Gloire were eliminated. Focus was given to the top 3 performers, 101-14, 3309 and 420A and in 2004 each of these rootstocks again bore fruit which had significantly lower TA but also significantly higher brix and pH than self rooted. Observed yield was also higher in 2004 for plants grafted on the 3 rootstocks, due mainly to higher incidence of early bud stem necrosis (EBSN) on self rooted plants. In 2005-2007 data consistently showed lower fruit TA levels on all 3 of the grafted rootstocks compared to self rooted plants. Over the 6 year period of this study these 3 rootstocks resulted in lower acids, which translates into earlier maturity (10-14 days) on the scion cultivar Pinot Noir 2A. Preliminary comparisons using 101-14 and 3309 rootstock on other cultivars indicates a similar effect of lower fruit TA's and thus earlier maturation over self rooted vines.