

Jiranil Jaemkerd 2011: Influence of Different Rootstocks on Growth, Leaf Micronutrient Content, Yield and Quality of 'Chenin Blanc' and 'Shiraz' Grape Grown on Alkaline Soil Derived from Limestone. Master of Science (Agriculture), Major Field: Horticulture, Department of Horticulture. Thesis Advisor: Associate Professor Surasak Nilnond, Ph.D. 81 pages.

A study of growth, leaf micronutrient content, yield and quality of 'Chenin Blanc' and 'Shiraz' grape grown on alkaline soil derived from limestone was carried out using 'Chenin Blanc' and 'Shiraz' grape cuttings (own-rooted) and 'Chenin Blanc' and 'Shiraz' grape budded on 9 different grape rootstocks, namely: 110R, 140Ru, 1103P, 5BB, 5C, 8B, SO4, Ramsey and 1613C. The results revealed that 'Chenin Blanc' grape budded on 9 different grape rootstocks and own-rooted significantly affected on growth, chlorophyll content, leaf micronutrient content, yield, fruit and wine quality. 'Chenin Blanc' grape budded on different rootstocks showed over growth symptom. 'Chenin Blanc' grape budded on Ramsey rootstock had the highest number of cluster per vine, cluster weight and yield per vine but did not significantly differ from those on 1103P rootstock. 'Chenin Blanc' grape budded on 1103P and 140Ru had comparable number of cluster per vine, cluster weight and yield. 'Chenin Blanc' grape budded on all rootstocks tended to have lower TSS and juice pH and higher TA than own-rooted except for 110R rootstock that had lower TA and higher juice pH than own-rooted. At full bloom stage, 'Chenin Blanc' grape budded on 140Ru rootstock had normal level of iron (Fe) in petiole whereas those budded on the other rootstocks and own-rooted had deficiency level of Fe. Zinc (Zn) and copper (Cu) in 'Chenin Blanc' petiole in all rootstocks and own-rooted were at normal level whereas manganese (Mn) in petiole had normal to above normal level. Wine produced from 'Chenin Blanc' grape budded on Ramsey, 1103P and 140Ru grape rootstocks gave highest score of sensory evaluation.

'Shiraz' grape budded on 9 different grape rootstocks and own-rooted significantly affected on growth, leaf micronutrient content, yield, fruit quality, anthocyanins content and wine quality. 'Shiraz' grape budded on different rootstocks showed over growth symptom except for those budded on 1103P and 1613C showed under growth symptom. 'Shiraz' grape budded on Ramsey and 1613C rootstocks gave higher yield per vine than the other rootstocks and own-rooted. 'Shiraz' grape budded on the rootstocks had higher TSS and lower juice pH and anthocyanins content compared to the own-rooted except for SO4 rootstock that increased anthocyanins content than own-rooted. However, there was no significant difference on TA between different rootstocks and own-rooted except that 5C rootstock had more TA than the own-rooted. At full bloom stage, 'Shiraz' grape budded on 1103P rootstock had above normal level of petiole Fe whereas budding on the other rootstocks and own-rooted had deficiency level. 'Shiraz' grape budded on Ramsey, SO4, 1103P, 1613C and 5C grape rootstocks had normal level of petiole Zn whereas the other rootstocks and own-rooted had lower level. 'Shiraz' grape budded on 9 different rootstocks and own-rooted had normal level of Cu. 'Shiraz' grape budded on all rootstocks and own-rooted had normal to above level of Mn whereas budding on the other rootstocks and own-rooted had normal to above level. Wine produced from 'Shiraz' grape budded on Ramsey and SO4 grape rootstocks gave highest score of sensory evaluation.

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Thesis Advisor's signature