ROOTSTOCK EFFECT ON YIELD COMPONENTS OF CABERNET SAUVIGNON GRAPEVINE

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Grapevines are grafted on rootstocks mainly due to their resistance to soil parasites, adaptability to mineral excess or deficiency and to plant vigor. The vineyards of Serra Gaúcha, Brazil, are established in several soil types, each presenting specific physicochemical characteristics. In this sense, the objective of the current research was to determine the effect of 15 rootstocks on yield components of Cabernet Sauvignon (CS) grapevine cultivated on local Cambissolo area. The experiment was carried out in two consecutive years with rootstocks Rupestris du Lot, 101-14, 3309, 420A, 5BB, 161-49, SO4, 1103 P, 99 R, 110 R, Gravesac, Fercal, Dogridge, Solferino and Isabel. Scion and rootstock vegetative material was considered free of viruses, coming from Embrapa and Inra-Centre de Bordeaux-Aquitaine. The experimental design was randomized blocks, 15 treatments and three replicates (10 plants per plot). The variables evaluated were bud break (%), number of clusters per vine, yield per vine (kg), cluster weight (g), pruning weight per vine (kg), yield per pruning weight (kg/kg), leaf area per vine (m^2), leaf area index and leaf area per fresh fruit weight (cm^2/g). Mean data from two years of evaluation were submitted to Principal Component Analysis (PCA). The analysis shows that there were nine principal components, but the top three were responsible for 86.49% of the total variation, i.e., PC1 by 43.62, PC2 by 30.58% and PC3 by 12.29%. The main results show that in PC1 Cabernet Sauvignon grafted on Solferino, Gravesac, Fercal and SO4 rootstocks exhibited high values of yield per vine, pruning weight per vine, leaf area per vine and leaf area index, whereas on Isabel and 161-49 it displayed high yield per pruning weight. In PC2, the leaf area per fresh fruit weight was high in the CS/Rupestris du Lot combination, whereas the percentage of bud break, number of clusters per vine and cluster weight were in the highest for CS/110 R. In PC3, the combinations CS/420A and CS/5BB had high values for cluster weight and yield per pruning weight. Despite the differences found among the treatments, it was observed that all scion/rootstock combinations had high yields, mainly due to the number of clusters per vine and the relatively high cluster weight. In addition, the rootstocks used in the experiment promoted scion vigor, a consequence of soil fertility and climatic conditions of Serra Gaúcha. The yield per pruning weight, which is indicative of the grapevine vegetative and reproductive performance, had adequate values for vineyards cultivated in the region, and leaf area per fresh fruit weight was considered suitable for ripening and producing quality grape.

Key words: grape, viticulture, yield.