

# GOING BACK TO OUR ROOTS

## *New rootstock trials to identify superior rootstocks*

**In view of replacement expenses of old cultivars in vineyards and to ensure economic and environmentally sustainable table and raisin grape production, appropriate rootstock and cultivar choice has become a critical factor to take into consideration during planning of new plantings.**

**B**ecause of the variation in SA soil and climatic conditions, vine rootstocks need to fit specific requirements depending on the area of production, i.e., suitability for different soil conditions (high pH, salinity, soil texture, waterlogging and drought conditions) and resistance to pests such as phylloxera, margarodes and plant-parasitic nematodes. Each rootstock has its own characteristics and adapts differently in varying soil types and growth areas. Therefore, new rootstocks should be categorized according to their adaptability to a specific soil and growing condition. Since berry quality and harvest time are factors influenced by the vigour and vegetative cycle of the rootstock, the growth potential of the rootstock has a significant effect on the type of trellis and management of the scion cultivar. Other traits, such as yield and compatibility, are also influenced by rootstock choice.

A new rootstock project, jointly funded by the South African Table Grape Industry (SATI) and Dried Fruit Technical Services (DFTS), started in 2017. This new project will be rolled out by Provar, an independent cultivar and rootstock evaluation company, to seven table grape and raisin production sites including Hex River, Orange River, Vredendal and Porterville. The principle upon which this new rootstock project is based, is the industry's accessibility to view rootstock performance in as many of the table grape regions as possible and to have regular access to the most recent information.

The main objective of this project is the evaluation of adaptability of new rootstocks in different soil and growing conditions to enable identification of superior rootstocks for specific planting areas. The first planting will take place in 2019 and a second planting is planned for 2021 when new rootstock additions will become available from nurseries. During 2019, the following rootstocks will be planted as part of a comparative study: Harmony, a medium vigour rootstock with resistance against some nematodes, well adapted to high potential soils; RS-3, a medium vigour rootstock for high potential soils, with resistance against a wide spectrum of

nematodes and phylloxera, but sensitive to soil wetness and salinity; RS-9, with resistance to phylloxera and nematodes, but lower in vigour compared to RS-3 and suited to high potential soils; 143 B Mgt, well adapted to heavy, wet soils and with vigorous growth habit; Ruggeri 140 with good adaption to limestone soils, has high drought resistance and suited to limestone, dry, lean, superficial and stony soils; SO4 with high resistance against phylloxera and nematodes. Older rootstock genotypes are included in each planting to serve as controls in the trial, i.e. Ramsey, Richter 110 and Paulsen 11-03. In 2021 latest releases Minotaur, Kingfisher, GRN-1, GRN-2, GRN-3, VR 039-16 and Freedom will be planted.

These rootstock trials will be performed in pre-identified commercial vineyards where normal on-farm practices are applied. The Provar evaluation protocol will focus on viticulture characteristics with commercial impact such as yield and berry quality, and the adaptability of the rootstock x scion combinations exposed to different climatic conditions. Data will be collected on characteristics associated with growth and vigour, fertility and yield, as well as berry and bunch quality.

A renewed approach to evaluation is taken to make sure that producers are included in the process, i.e., from identification of the relevant sites, and the choice of scion cultivars and planting of the trial sites. Provar aims towards a transparent process and protocol, where an open discussion platform will be available on a web-based Rootstock Discussion Forum. Provar, in association with these producers, will manage access to the trial sites.

The value of the project to the industry lies in independent and objective data collection to supply unbiased information and to recommend the best rootstock for the various planting areas and planting conditions that exist in the South African grape production regions.

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Droëvrugte Tegniese Dienste