

PERFORMANCE OF SELECTED DIFFERENT TYPES OF STONE FRUITS IN A
SUMMER RAINFALL AREA, SOUTH AFRICA

BY

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ABSTRACT

Temperate fruit trees cultivated in areas of mild winter conditions result in a number of insufficient chilling symptoms. Such insufficient symptoms are described in general, as the absence of bud break, delayed foliation, reduced fruit set as well as reduced fruit quality. Therefore, after bud break, fruit trees show insufficient symptoms such as paralysis of the shoot growth, development of small leaves, low rate of effective fructification, and reduction of the flowering-maturity cycle and development of small flat fruits. Adequate information of chilling requirements, dates of dormancy breaking and appropriate chemical agents, which should be applied to meet chilling requirement is required for successful production of stone fruit. South African (SA) deciduous fruit has been exported successfully (primarily to the UK and Europe) since 1892 and SA is currently a major Southern Hemisphere supplier of fresh fruit between the months of October and August (Huysane, 1996). In order to remain competitive, there is a need to expand the production of stone fruits from traditional Western Cape to a summer rainfall area in Limpopo Province. The broad objectives of the study was to evaluate some quantitative and qualitative performance traits of different types of stone fruits in a summer rainfall area in Limpopo Province.

The project was initiated in 2007 by Agricultural Research Council through the collaboration of Agricultural Research Council (ARC) Infruitec-Nietvoorbij (Stellenbosch) Western Cape and University of Venda in Limpopo Province. This was a continuous assessment about the performance of selected stone fruit cultivars in a summer rainfall area, South Africa. Growth data was sampled on each tree. Circumference measurement of the graft union after the growing season was measured using a soft pliable measuring tape in order to get an indication of the growth rate. This was done annually during winter period.

The experimental design was a completely randomized design (CRD) with six trees (experimental units) randomly selected for each of the four species ('Charisma', 'Summersun', 'Pioneer' and 'Mayglo'). Analysis of variance was performed on all variables accessed using GLM (General Linear Models) Procedure of SAS statistical software version 9.2 (SAS Institute

Inc., Cary, NC, USA, 2003). Shapiro-Wilk test was performed to test for normality (Shapiro, 1965).

There was significant different on diameter of stems, scion height and production of secondary branches of trees on the four different stone fruit trees studied. 'Mayglo' and 'Summersun' trees had high buds production, blooming, and fruit-set than 'Charisma' and 'Pioneer' trees in year 2009. All trees had a very good bud production and blooming, but only 'Mayglo' and 'Summersun' had a good fruit set compared 'Charisma' and 'Pioneer' in year 2010.

Key words: Bud break, chilling units, flowering, fruiting and stone fruits