

## **Objectives and Rationale**

Hortgro compiled a 2019-2024 Hortgro Science Strategic Plan. One of the gaps identified by the stone fruit industry was a limited understanding of factors influencing successful plum fruit set. The aim of this study is to determine the duration of the effective pollination period (EPP) of mainstream plum cultivars produced in the Western Cape.

## **Methods**

Nine plum cultivars of commercial importance were selected for the study: African Delight, Angelino, Fortune, Laetitia, Songold, Ruby Star, Ruby Sun, Ruby Crisp and Sapphire.

Conduct controlled pollination over time and monitor fruit set in Robertson area: 100 bearing units with ten reproductive buds were covered when flowers are at balloon stage. At full bloom stage ten flower bunches on ten trees are pollinated for ten consecutive days. Determine fruit set 12, 21 and 42 days after pollination of the last pollination episode.

## **Key Results**

Trials were executed in Worcester, Robertson and Bonnievale.

In the Worcester area temperatures did not exceed 30°C prior to pollination period, but temperatures did exceed 30°C on some pollination days. However, it seems not to have affected flowering. In the Robertson area, the temperature did exceed 30°C on four occasions prior to the pollination period and during the pollination period of several cultivars. Not sure if this affected the EPP trends. The climate in Bonnievale could have influenced the success of the pollination, especially due to rain during pollinations.

Only African Delight displayed a clear EPP trend, a slight increase in fruit set before a sharp decline. The other cultivars displayed an initial gradual decline thereafter the fruit set was reduced.

## **Discussion and Key Conclusion**

The data collected did not clearly indicate the pollination day after which effective pollination does not occur anymore. At this stage it can only be speculated on the EPP of the various cultivars. It seems that Ruby Crisp and Songold had the shortest EPP (3 days). Laetitia and Ruby Star presented the

longest EPP (10 days), and the other cultivars displayed EPP of 4 to 5 days.

Succeeding seasons will be used to confirm the preliminary conclusions based on the 2021 season and to refine technique.