

APFIP PEAR ROOTSTOCK TRIAL SHEPPARTON VICTORIA

(HAL Project AP04001)



Back Ground:

The lack of suitable precocious and locally adaptable pear rootstocks is acting as a significant restriction to the advancement of the pear industry in Australia and particularly the Goulburn Valley where 85% of Australia's pears are produced. Calleryana D6 as a seedling rootstock and the industry standard pear rootstock in Australia has served us well but recent experience has shown that it is not well suited to more intensive plantings.

Trial Aim:

The aim of the trial is to assess the local adaptability / suitability of the selected rootstocks with a view that they need to be precocious and have the ability to produce a crop in year 2 and sustain an annual increase in production and be in full bearing by year 5. The fruit quality produced needs to be equal to, or better than current outcomes on D6. This project is focused on identifying rootstocks that are both adapted and suitable for the growing environment in the Goulburn Valley. This is the first step that needs to be taken to assist the pear industry in moving to more manageable intensive orchards.

Trial Design:

The site was planted in 2004 and has been designed to include 6 rootstocks with Calleryana D6 as the control. There are 3 commercial varieties, Packhams Triumph, Williams and Corella there are 50 trees of each variety on each rootstock in two growing systems, Open Tatura Trellis at a planting density of 2750 trees per hectare and Centre Leader at 1585 trees per hectare. Rootstocks in the trial currently include D6, Quince A with Burre Hardy interstem, BP1 and BM2000.

Pyro Dwarf and DCA Fox 11 were also selected for planting in the site, a small amount of DCA Fox 11 were planted in 2009, these rootstocks have been selected for the trial as they are considered to be around 60% the size of D6.

2010 Trial Results:

The 2010 trial results have been completed and a report compiled, this full report can be viewed at the APFIP web site www.apfip.com.au under the latest news section.

The report has been compiled out of the data collected this season and includes:

- Yield as a measure of trunk cross sectional area for each rootstock and variety combination.
- Yield efficiency is reported as kilograms of fruit per cm² of trunk cross sectional area 2010 season.
- As well the efficiency of the variety rootstock combination over the life of the trial.
- Fruit quality is reported as size/mm, pressure, % total soluble solids and fruit weight.
- Combination Vigour as Trunk Cross Sectional Area

Trial Summary:

Observations to date have shown that yield performance of the rootstocks can vary greatly depending on the variety used. Early indications are that the Williams variety has the best yield efficiency on the BM2000 rootstock with the Packham variety having the best yield efficiency on BP1 and Corella is performing best on D6. The Corella/D6 result is somewhat of an aberration as 30% of trees in the trial on this combination died in the first year maybe due to a compatibility issue. Based on this result it would not be recommended to plant this variety/rootstock combination.

Fruit:

Maturity parameters don't differ greatly between variety and rootstock combinations, there is some small difference between the % of total soluble solids, fruit size and weight. Fruit size is similar to the 2009 crop but fruit weights are up in some cases by 17% in 2010, skin finish on all varieties was good with only a small amount of blush and limb rub.

Vigour:

Highest vigour measured as Trunk cross sectional area is D6, this rootstock is on average 16% larger than any other rootstock in the trial. Growing systems are standing out as a means of vigour control with all rootstocks showing a decrease in vigour on Open Tatura trellis.

Fruit Yields as Tons/Hectare 2010:

Packham yields were down district wide which has had an impact on trial data for this season. Williams yields increased over the 2009 season with Corella slightly down on last year.

The best performers,

- Packham on BP1 in centre leader and BM2000 open tatura trellis had the best yield.
- Williams on D6 yielded slightly better than BM2000 centre leader and BP1 open Tatura trellis.
- Corella BM2000 on either system had the best tons/hectare.

Rootstock Yield Efficiency:

This show the ability of a rootstock in the production of kilograms of fruit per cm² of its trunk cross sectional area for 2010 season and over the life of the trial.

2010 season.

The best performers,

- Packham on Quince A has the best efficiency rate on both growing systems.
- Williams on BM2000 on centre leader and BP1 on open tatura trellis.
- Corella on BM2000 on both systems.

Cumulative efficiency rate.

The best performers,

- *Packham on BP1 centre leader @ 477grams and BP1 open tatura trellis @ 438grams.*
- *Williams on BM2000 centre leader @ 1.3kg and BM2000 open tatura trellis @ 974grams.*
- *Corella on D6 centre leader @ 1.03kg and D6 open tatura trellis @ 589grams.*

The report also includes a range of photos of all the combinations in the trial, any data interpretation issues needing clarification should be directed to APFIP Ltd on 62641 540, 0408503528 or mark@apfip.com.au.



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