Performance summary

Spanish bred Garnem (GN-15) was among the top seven highest performing rootstocks in terms of cumulative yield. Results arespecific to the soil characteristics and management practices applied to this trial site. Garnem resulted in vigorous trees with a spreading habit that were significantly higher than Nemguard. Of the top seven rootstocks Garnem rootstock is commercially available as a grafted tree in Australia.

Key observations

Tree Habit

Using trunk circumference as an indicator of tree growth, Nonpareil trees grown on Garnem (572mm) were not significantly different from Nemaguard (550mm) or spare Nemaguard (556mm) (Figure 20). Statistical analysis undertaken in years 2016, 2018 and 2020 applied some adjustment to account for a tree death in Replicate 3.

Garnem produced the largest trees in the trial significantly higher (4.98m) thanNemaguard (4.65m) but not significantly different from spareNemaguard (4.83m). The trees had a spreading canopy that readily filled the available canopy space by 8th leaf.

Production

Seasonal yields for Garnem had little variability each year, except in 2020 where some variability was observed between replicates (Figure 21). Average seasonal yields followed a similar trend to Nemguard with a slight decline in 8th leaf.
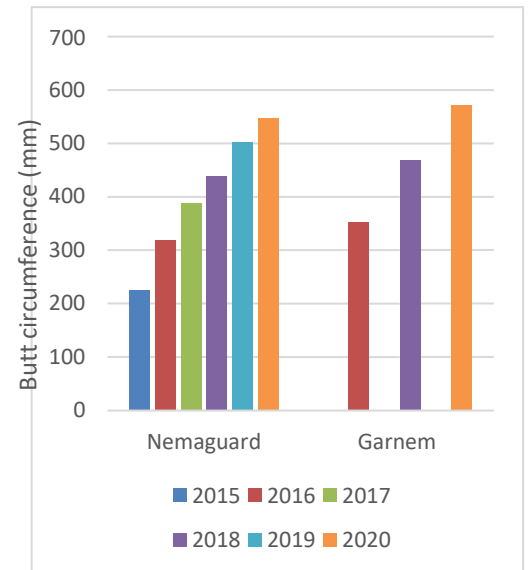

Figure 20. Statistically adjusted trunk circumference.

Table 8. Average annual yields (kg/ha).

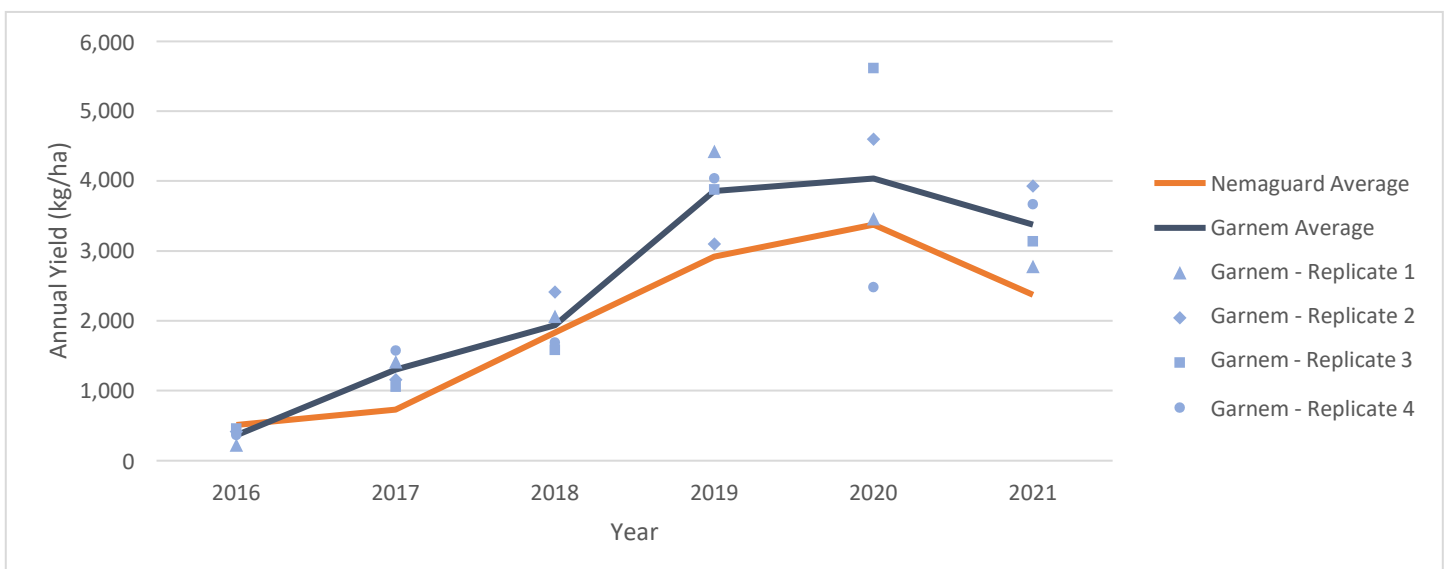| Rootstock	2016	2017	2018	2019	2020	2021	Cumulative
Garnem	365	1,301	1,936	3,859	4,038	3,378	14,877
Nemaguard	508	731	1,831	2,919	3,377	2,373	11,738

Figure 21. Average annual yields 2016 to 2021 (3rd to 8th leaf).

Rootstock characteristics

While susceptible to root-lesion nematode, only low populations of ring nematode were recorded in this trial and their impact on Garnem is unknown.

Table 9. Rootstock characteristics.

Root knot Nematode	Lesion Nematode	Ring Nematode	Crown Gall	Armillaria	Phytophthora	Salt exclusion	Chlorosis	Vigour	Propagation by cuttings
High resistance	Medium / Susceptible	Unknown	Susceptible	Unknown	Susceptible	Excluder	Tolerant	High	Good

Figure 22. Juvenile tree - 2017.

Figure 23. Mature tree - 2021.

Figure 24. Graft union - 2021.