

Performance summary

GF749 was among the top seven highest performing rootstocks in terms of cumulative yield. Results are specific to the soil characteristics and management practices applied to the trial site. GF749 was able to produce consistently high yields with a good balance between canopy growth and crop production. There was some variability between replicates and ongoing monitoring will be important to see if these trends continue. GF749 has medium to high susceptibility to one or more species of root-knot nematodes and future monitoring will determine if increased nematode populations at this site will impact future yields.

Key observations

Tree Habit

Using trunk circumference as an indicator of tree growth, Nonpareil trees grown on GF749 had similar average growth (572mm) compared with Nemaguard (547mm, Figure 5).

Trees grown on GF749 produced one of the taller canopies averaging a height of 4.98m, significantly higher than Nemaguard 4.65m but similar to spare Nemaguard 4.83m. Visual observations suggest that while the inner scaffold has pushed canopy growth the canopy remained open in its 8th leaf enabling good light interception (Figure 8).

Production

GF749 produced consistently high yields each season for mature crops compared with Nemaguard (Table 2). Between 2019 and 2021 (6th to 8th leaf) there was only one outlying yield that was below 2,000kg/ha in 2020 for Replicate 3 (Figure 6).

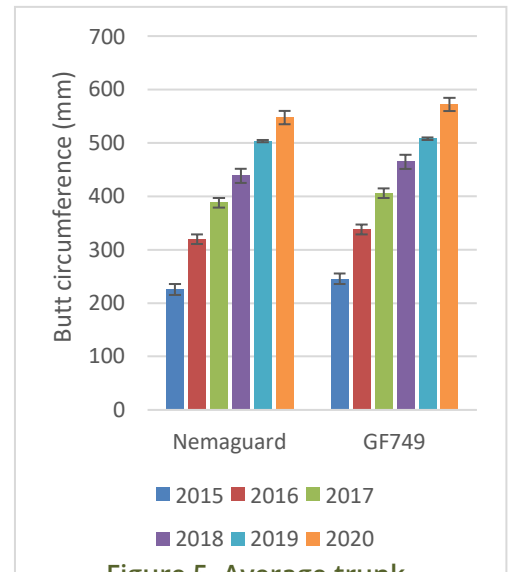


Figure 5. Average trunk circumference.

Table 2. Average annual yields (kg/ha).

Rootstock	2016	2017	2018	2019	2020	2021	Cumulative
GF749	469	1,133	1,939	4,355	3,855	3,847	15,597
Nemaguard	508	731	1,831	2,919	3,377	2,373	11,738

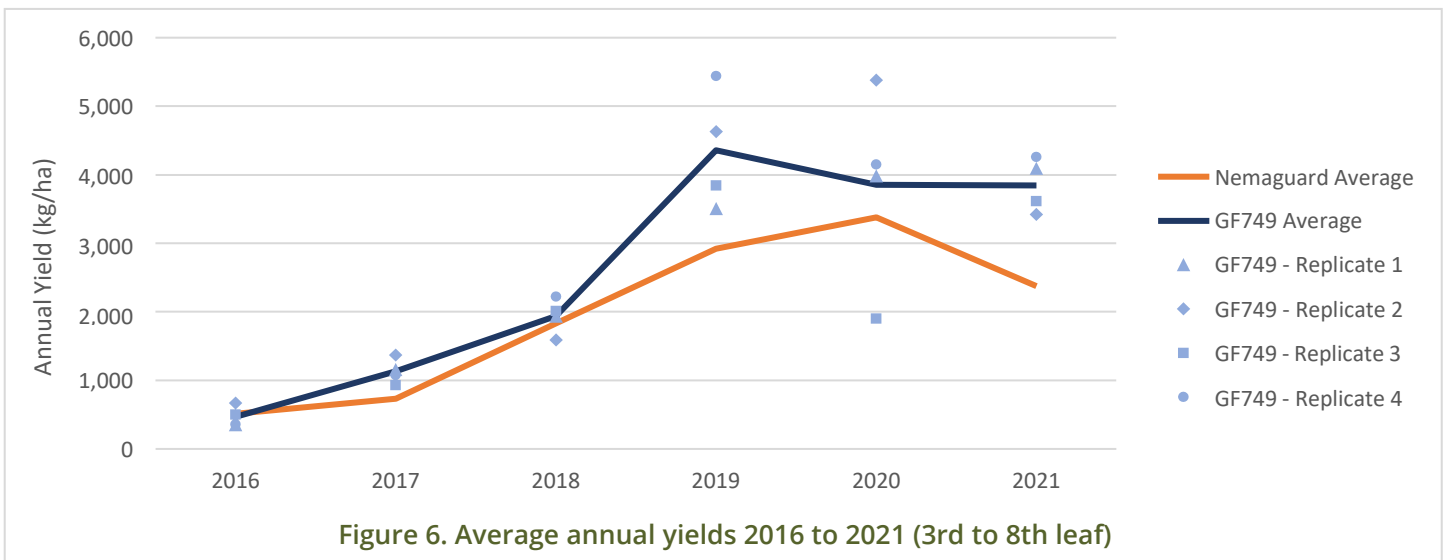


Figure 6. Average annual yields 2016 to 2021 (3rd to 8th leaf)

Rootstock characteristics

Investigations into root-knot susceptibility for rootstocks in Australia indicate GF749 has medium to high susceptibility to root-knot nematode *M. incongnita* and *M. javanica* and should be avoided where high nematode pressures are expected. In 2021 trial plots indicated a moderate population of root-knot nematode. Continued monitoring will help to determine any increase in nematode population and how this impacts yield.

GF749 brought forward the start of flowering by 2 days on average and reached full bloom earlier than Nemaguard.

GF749 had low levels of leaf sodium suggesting it has good salt tolerance excluding sodium and chloride from the soil.

Table 3. Rootstock characteristics.

Root knot Nematode	Lesion Nematode	Ring Nematode	Crown Gall	Armillaria	Phytophthora	Salt exclusion	Chlorosis	Vigour	Propagation by cuttings
Characteristics are unpublished for GF749.									



Figure 7. Juvenile tree - 2017.



Figure 8. Mature tree - 2021.



Figure 9. Graft union - 2021.