

Performance summary

Cornerstone was planted one year later in this trial making it difficult to make direct comparisons with other rootstocks. The delayed planting was further complicated in that they received the same fertilizer and irrigation amounts as the trees 12 months older enabling growth and yields to catch up to that of other rootstocks. By 3rd leaf Cornerstone's average annual yield was higher than Nemaguard and after 7 years growth produced a similar cumulative yield to Nemaguard that had 8 years growth.

Key observations

Tree Habit

Despite being planted one year later, Nonpareil trees grown on Cornerstone had strong growth and by 2020 (540.4mm) had similar trunk circumferences as Nemaguard (549.8mm).

In 2020, Cornerstone had one of the smaller canopies with heights (4.78m) similar to Nemaguard (4.65m) but not significantly smaller than the spare Nemaguard (4.83m).

Production

In 2017 Cornerstone had significantly higher production efficiency (0.095kg/cm²) than Nemaguard (0.057kg/cm²) the significance between rootstocks was lost after 2017.

Despite being planted 12 months later Cornerstone produced annual average yields higher than Nemaguard in all years except for 2016 and 2020. After 7 years growth Cornerstone achieved a similar cumulative yield to Nemaguard that had 8 years growth.

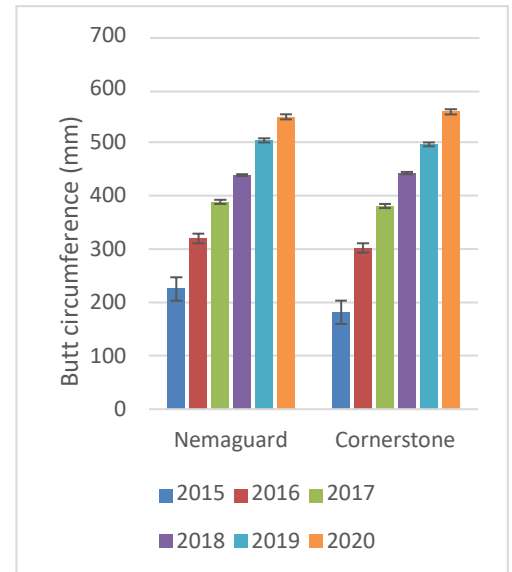


Figure 50. Average trunk circumference.

Table 20. Average annual yields (kg/ha).

| Rootstock | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | Cumulative |
|--------------|------|-------|-------|-------|-------|-------|------------|
| Cornerstone* | 123 | 1,132 | 1,931 | 3,309 | 2,669 | 2,824 | 11,987 |
| Nemaguard | 508 | 731 | 1,831 | 2,919 | 3,377 | 2,373 | 11,738 |

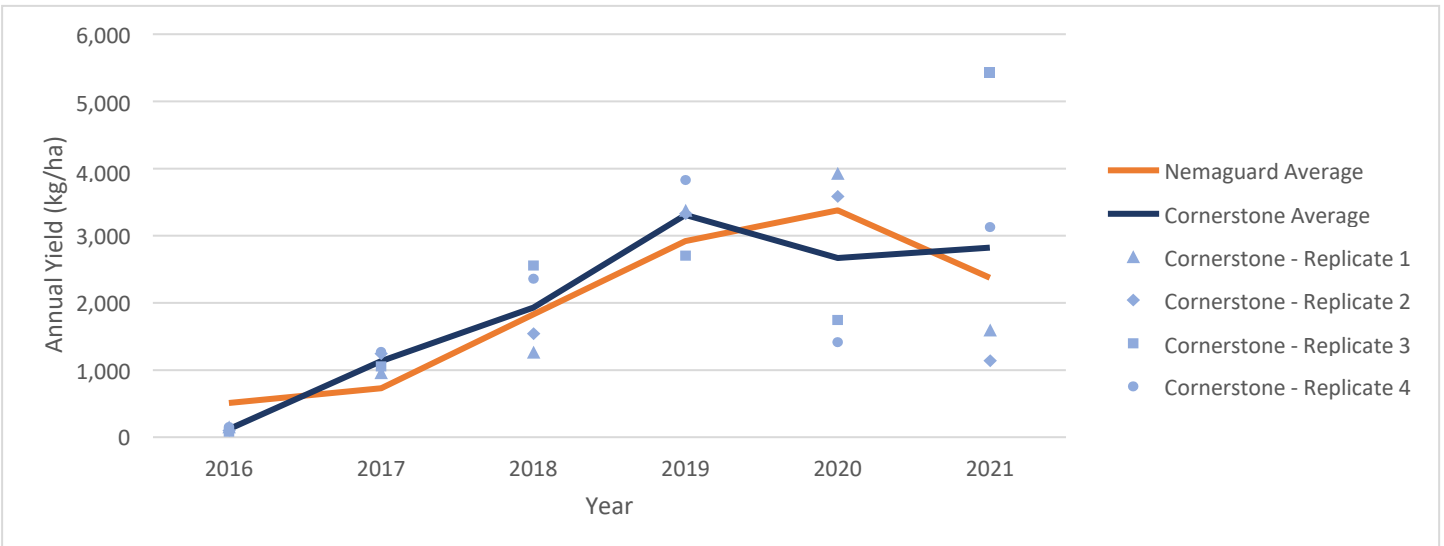


Figure 51. Average annual yields 2016 to 2021 (3rd to 8th leaf)

Rootstock characteristics

Low levels of ring nematode were detected and requires ongoing monitoring. On average earlier flowering was observed for Adafuel bringing forward the start of flowering by two days. Full bloom and end of flowering were also earlier than Nemaguard (Figure 2).

Table 21. Rootstock characteristics.

| Root knot Nematode | Lesion Nematode | Ring Nematode | Crown Gall | Armillaria | Phytophthora | Salt exclusion | Chlorosis | Vigour | Propagation by cuttings |
|--------------------|-----------------|---------------|-------------|-------------|--------------|----------------|-----------|--------|-------------------------|
| High | Susceptible | Susceptible | Susceptible | Susceptible | Susceptible | Excluder | Tolerant | High | Good |



Figure 52. Juvenile tree - 2017.



Figure 53. Mature tree - 2021.



Figure 54. Graft union - 2021.