

Rootstock/fertiliser management systems for almonds

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It has been known for many years that rootstock influences the mineral nutrient (*i.e.* nitrogen, phosphorus *etc.*) status of grafted scion in horticultural crops.

Almonds are no exception.

Despite this, rootstock is not a factor in almond orchard fertiliser programs. It has yet to be determined whether the variations in the ability of rootstocks being used to take up nitrogen impart significant differences on the levels of vigour in scion varieties grafted on to them.

Preliminary Glasshouse Trial

Under controlled conditions

- characterise the response of selected almond rootstocks to increasing nitrogen supply, &
- identify the minimum nitrogen concentration that maximum uptake is observed for those rootstocks.



Result

Nitrogen uptake and growth differed between rootstocks as nitrogen supply increased.

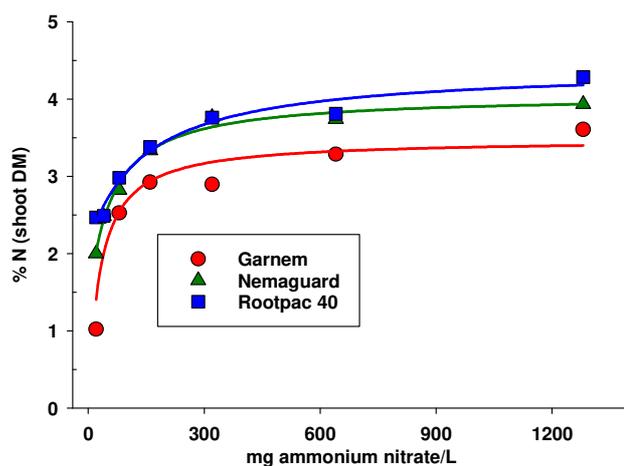
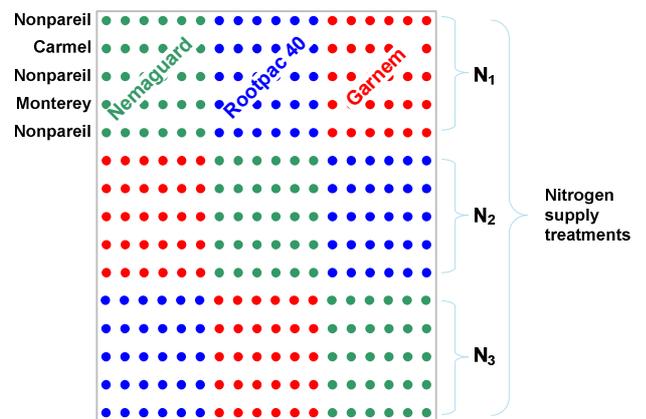


Figure 1. Relationship between ammonium nitrate fertilization rate and % N in the shoot dry matter of selected almond rootstocks

Experimental Planting

A field trial — consisting of three rootstocks of interest, grafted with three different scions and fertigated with different rates of nitrogen — is being established to test the glasshouse trial results in an orchard situation.



Potential Outcomes

More efficient use of fertiliser through optimised fertigation strategies for existing almond orchards and for the advanced almond production systems of the future.



Figure 2. Field layout to test impact of ammonium nitrate fertilization rate on growth and N nutrition of selected almond scions on three rootstocks