

TREE & VINE CROPS

Recommendation for use of TwinN in tree and vine crops.

TwinN is currently used in a wide variety of tree crops including nut crops (almonds, pecan, macadamia etc), olives, citrus crops, avocados, apples, pears, nectarines, peaches, plums, cherries and various other tree fruit crops. TwinN is used in commercial tree plantings for both fruit and timber/paper pulp production. In this role it is added on top of standard nutrition programs to speed establishment and early growth to reduce time to first fruit, or to increase critical early growth rates for timber crops.

TwinN is also used in vine crops such as wine and table grapes, raspberries, boysenberries, kiwi fruit etc. TwinN is used in three N. American states for hop production.



Improved profitability

- TwinN can be used to increase profitability by decreasing nitrogen fertiliser costs.
- TwinN assists longer term profitability by setting up tree and vine crops with a vigorous, healthy root system and a thriving, resilient root/soil microflora and this assists crops to yield well across varied seasonal conditions.
- TwinN is used to grow crops with reduced N fertiliser applications and this helps growers to produce a fruit crop with lower nitrate levels which can have a significant effect on fruit quality and shelf life.

Environmental Benefits

Reduced leaching of nitrogen into waterways

An additional benefit of reduced nitrogen fertiliser application and better nutrient capture is that leaching of nitrogen compounds into rivers, lakes and oceans is greatly reduced. In areas where nitrogen fertilizer use is restricted by legislation, TwinN allows producers to comply with environmental legislation while maintaining good yields.

Reduced Carbon Footprint

TwinN enables reduced application of nitrogen fertilisers, such as urea, that have a very high carbon footprint associated with their manufacture, transport and NO₂ emissions. This allows farmers to grow produce with reduced carbon footprint. TwinN has been audited for carbon footprint and MAB has purchased carbon credits to allow TwinN to be accounted as carbon footprint neutral.

Fertiliser Recommendations

Four rules:

1. Apply the normal rates of P, K and other nutrients. If these nutrients are limiting then the crop will be unable to respond to TwinN application.
2. Reduce N fertiliser application rates by up to 25 - 40%. Please refer to Crop Application Guidelines for specific recommendations for the crop. Some growers who are using lower N rates as their standard practice apply TwinN on top of their normal program to target increased yields. If growers are targeting larger cuts to N, such as 40%, it is recommended they start with smaller cuts and work down to lower N rates over several seasons.
3. If N fertiliser is applied in multiple applications per season then keep the initial seasons application at standard rates and reduce the later applications. This ensures the crop gets a strong early start to the season.
4. For organic growers TwinN is typically applied in combination with the usual composts and other sources of nutrition.

Application

Application timing

Use one application or two applications of TwinN per season, depending on whether the crop returns are enough to justify one or two applications. For crops where one application is used, apply it at the start of active growth in spring. If a second application is used then apply it after harvest or near the end of the growing season, before the crop enters the dormant stage. For wine grapes use a single application only.

Application methods

Application needs to deliver the microbes into the moist root zone. These are commonly used methods:

- Drip irrigation, micro-sprinkler irrigation, overhead irrigation or any fertigation system are an ideal way to apply TwinN. If black irrigation piping is used in hot climates take care to run some water through the lines to cool them or the high temperature may damage the TwinN microbes.
- Boomspray onto moist soil before rain using as much water as possible, or immediately before overhead irrigation. Apply using very coarse nozzles and as much water as possible to wash the microbes into the roots. Nozzles can be removed entirely to deliver a water stream under the canopy fast and accurately. Aim to deliver the microbes into the root zones rather than the inter-row areas.
- For applications at planting use the same standard rate of TwinN per hectare or acre.
 - o Calculate the number of trees/vines per hectare eg 1000
 - o Allocate a TwinN/water volume per plant eg 1 L/plant
 - o Multiple those to get a water/TwinN tank mix per hectare eg 1000 plants x 1L/plant = 1000 L/ha
 - o Mix the TwinN into the water volume and apply into the planting hole with the new plant.