HORTICULTURE

Recommendation for use of TwinN for horticulture.

TwinN is currently used in a wide variety of vegetable crops including potato, carrot, onion, celery, cabbage, broccoli, lettuce, pepper, pumpkin, tomato, watermelon and others. TwinN is also used in berry crops such as blueberries, raspberries etc. It is also used by banana producers in Australia and overseas. Flower producers use TwinN to push their plants towards flower growth and away from excessive vegetative growth. TwinN is used in hydroponics and high intensity glasshouse production.

TwinN reduces input costs and boosts yields but another key benefit is in produce quality. Most producers prefer to reduce nitrate levels in their produce before harvest to improve texture and storage shelf life. TwinN allows producers to achieve this by reducing late season nitrogen fertiliser rates without risk of lowering yield.

Improved profitability

TwinN can be used to increase profitability by decreasing nitrogen fertiliser costs and when produce prices are low this is of value. When prices are higher improved profitability is driven mainly by improved yields and producers usually make small reductions in N and target high yields.

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

Three 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%. 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.
3. If N fertiliser is applied in two or more applications per season then keep the initial planting application at standard rates and reduce the later application. This ensures the crop gets a strong early start.

Application

Application timing

- For fast growing, short growth cycle crops apply TwinN soon after emergence of the crop. The aim is to apply TwinN early enough to drive a strong early growth but not so early that there is only a limited amount of roots available for the microbes to colonise.
- In crops that have distinct vegetative and fruiting stages a second application at start of fruit growth is valuable to maximise yields.

Application methods

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

- 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. If banding is possible then band the application onto the crop rows.
- Drip irrigation, micro-sprinkler irrigation, overhead irrigation or any fertigation system
- Trickle tape irrigation
- Liquid inject with a cutting disc or tine combined with standard liquid inject lines. Do not mix TwinN solution with pesticides or strong chemical fertiliser solutions.

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