

# Microbe mix aids nitrogen delivery

New eco-fertiliser products are a hot topic, but do they really work?

*Olivia Cooper and Paul Spackman* examine two newcomers to find out

**A** freeze-dried nitrogen-fixing soil improver from Australia, TwinN, is being trialled in the UK as a nitrogen replacer.

Mapleton Agri BioTec says its product is based on a mix of microbes.

Bacteria fix nitrogen in the plant, while other micro-organisms improve soil health and structure and increase nutrient availability.

One small vial, when mixed with 200 litres of water, is said to treat 5ha and deliver 125kg/ha of N. It can be used in conjunction with ammo-

nium nitrate to improve yields, or completely replace AN use.

It is claimed to strengthen plants, increase root systems and improve soil structure, and has minimal

## TwinN

- Microbe mix
- N replacer
- Costs about £33/ha
- Cheaper than N – higher yields?
- Minimal leaching



leaching so can be used in nitrate sensitive areas. It is approved by Organic Farmers and Growers, and Soil Association approval is pending.

TwinN has been used on crops in Australia, Africa and the UK, and Mapleton hopes to run official trials this year with IGER and ADAS.

Arthur Bentall farms 240ha near Southend-on-Sea, Essex, and trialled TwinN on 4ha of wheat last year. "We had 10ha of Soissons and used normal AN on 6ha at 125kg/ha," says Mr Bentall. The rest was treated with TwinN only.

"The TwinN crop didn't yield quite as much, about 7.2t/ha compared with 7.9-8.1t/ha. But grain was bigger and the TwinN was £25/ha cheaper than AN.

"We will trial it again on a larger acreage; it does seem to be a promising product."

Warwickshire Agricultural College

used TwinN on 5ha of Cellar spring barley last year. The farm had been applying liquid organic nitrogen on some crops.

"I was pleasantly surprised," says farm manager Richard Price. "The crop was taller and stronger, with good grain size, and yielded about 2.5t/ha more than the untreated crop, at 6t/ha."

TwinN costs about £33/ha, about £6/ha less than the organic N. This year he plans to use TwinN on 20ha of winter barley to see how it affects the growth stages.

"I really liked its ease of use, reduced costs and increased points under the Entry Level Stewardship Scheme from using lower inputs. I think this product has definitely got a future."

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## Plocher range lowers artificial input costs

A novel product said to improve the availability of soil nutrients could help cut reliance on artificial fertilisers and sprays, if claims from its manufacturer are to be believed.

Use of the Plocher range of products together with organic manures has typically reduced agrochemical inputs by up to 30% in the first year and 50% in year two, says Swift Nature's Charlotte Wilson.

The soil-working product is generally applied with organic manure or slurry to enhance aerobic decomposition and reduce the harmful compounds associated with anaerobic conditions, she says.

"Including it also improves soil hygiene and reduces the incidence of many fungal diseases," she adds.

It is based on ingredients including molasses, magnesium sulphate, calcium carbonate and dolomite, which stimulate aerobic microbial activity, Mr Wilson says.

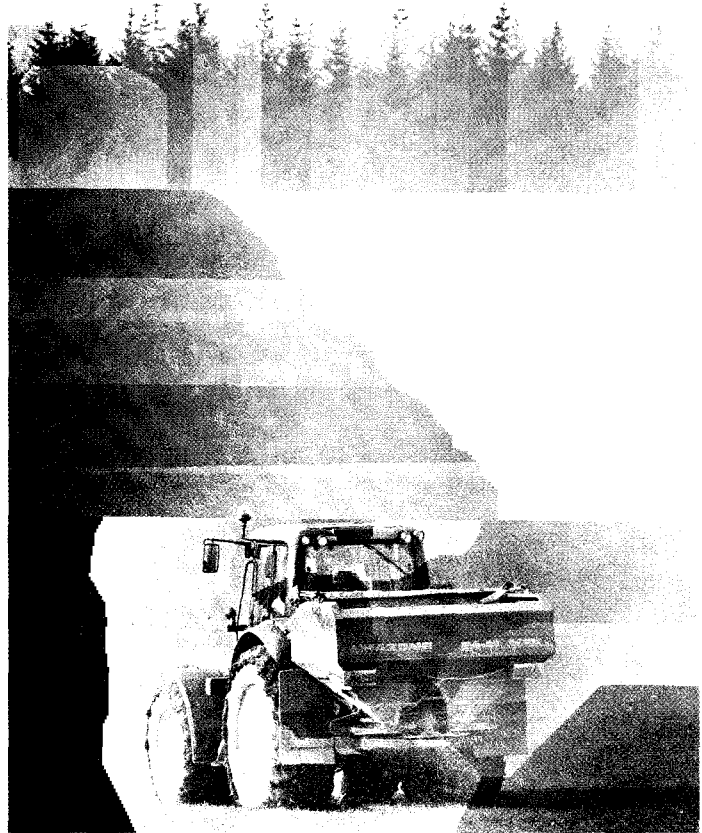
"Unless we stimulate aerobic microbial activity to build up humus levels, nutrient loss is inevitable, drying-out is exacerbated and the lack of oxygen at the roots will cause poor crop health – encouraging soil-borne pests and disease."

At typical application rates of 100-200g/ha, Plocher costs about £33/ha for the first year in cereals and oilseed rape, and £24/ha for subsequent years. Mrs Wilson claims this cost will be covered by savings in fertiliser and sprays.

Philip Meadley is repeating his trial of the full spectrum of Plocher products on half of a 15ha field of second wheat on medium clay loam soil at Grange Farm, East Yorkshire.

Last season's unsettled weather disrupted harvest and hampered yield and quality comparisons, but he is keen to give the product another try this season.

"It is especially interesting if we can start to reduce our fertiliser and



Artificial fertiliser use could be cut with no loss of yield by using organic manures plus Plocher, says Swift Nature's Charlotte Wilson.

sprays by 30% in year one and 50% in year two," he says.

Last year, Mr Meadley found *Septoria tritici* was less advanced on Plocher-treated Solstice first wheat

and root growth was also stronger. In addition, no T3 fungicide was required on Plocher-treated crops, he says.

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### Plocher

- A range of products to increase nutrient availability
- Typical application rate 100-200g/ha
- Cost £24-33/ha
- Potential chemical input reduction
- See [www.swiftnature.co.uk](http://www.swiftnature.co.uk)