

HOLISTIC NUTRITION FOR POTATO PLANTS

EMERALD Crop Science has launched a service which uses soil and crop analysis to provide a balance of micro and macronutrients along with bio-stimulants products. Independent, replicated field trials hosted by Branston at Sledmere in North Yorkshire last year are said to have improved market-able yield while also increasing net profit. 'Potato yields have remained fairly static over the last 25 years, despite the breeding of new varieties,' says Emerald director and crop nutritionist Simon Fox. 'One of the key reasons for this is that there hasn't been anything like sufficient focus on holistic crop nutrition.'



'Soil nutrient availability is not just about nitrogen, phosphate and potash indices, he adds. There are complex interactions with pH, cation exchange capacity, organic matter and a wide range of other soil factors which can prevent availability of important nutrients and minerals.'

'Failure to account for this when creating nutrition programmes results in wasted products, sub-optimal yields, reduced quality and reduced gross margins,' warns Mr Fox. Calculating precise crop requirements and nutrient availability to allow for such interactions is complicated, he explains, so Emerald has created software for the purpose.

'The first thing we do is carry out a detailed soil analysis. This then goes into the computer to model nutrient availability with crop demand at specific growth stages, and produce a tailored and extremely accurate nutrition programme.'

Better timing

Mr Fox says that because most growers apply fertiliser at planting time, micronutrients may be locked up by the soil or leached before they are required. Equally, applying foliar nutrients at the wrong time can do more harm

than good. Emerald is offering products based on organic acids that can be absorbed by the leaf.

'Salts like manganese sulphate cannot be taken up and delivered systemically throughout the plant, so we've created products that can be transported in the phloem, he claims. Farmers can apply nutrients alongside their fungicide programme with no additional field passes.'

The company has developed bio-stimulant products (Aztec, Phi-Gold and C-Weed) said to trigger specific effects, including improved root growth.

'People have been using a few of these compounds for years - some are present in seaweed, for example,' says Simon Fox. 'Trials have shown that they significantly reduce the impact of stress on plants, and may improve natural resistance to fungal diseases like blight.'

James Hopwood, Head of Farming at Branston, reckons Optiyield looks promising.

'In hand-lifted trials our marketable yield increased by an average of 7.3% *for each component*, thus a healthy **22.0% increase overall**, and it more than pays for itself.'

Taking the extra costs into account, that's an increase in net profit of over £600/ha, based on average market values at the time.'

He was also pleased to see improved quality in what was a very dry year without irrigation. 'If the plant is under stress, it has a direct impact on the tuber,' he observes.

'You always need an integrated management system - the beauty of this is that it fits in nicely with our existing fungicide programme.'

Branston is rolling out the Optiyield system across 280 hectares this year. 'It will be interesting to see how it performs on different soils and in different situations,' says Mr Hopwood. Until now soil sampling has focused on the major nutrients.

'Micronutrients are equally important, and I don't think enough attention is given to them during the life of the plant. It's all about driving efficiencies, and attention to detail is so important.'

There are a lot of key factors to get right in potato growing, and this is another link in the chain to get the best yields, quality, and returns possible.