

GET SMART WITH NUTRIENTS

GROWING healthy potatoes is all about getting the best value and highest yield from your crop, says John Haywood, director of Plant Syence. This means being proactive to provide an environment in which the plants stay green longer – to promote tuber bulking – and are more tolerant to environmental stress.

Mr Haywood points out that phosphorus is critical for root development and also influences tuber numbers. But, he concedes, there are issues surrounding the element. It is not very mobile and does not stay available to the plant for long.

Potatoes in particular are poor at recovering phosphate. As a consequence there is a tendency to apply a lot of fertiliser in order to get some into the plant. This is not a desirable situation given the negative impact that it can have on water quality. 'What we need to do is get smarter about applying it and make the fertiliser more efficient in order to avoid the threat of legislation regulating inputs,' he comments.

In recent trials, undertaken by Neil Fuller of Soil Solutions, four varieties (Maris Piper, Rooster, Marfona and Maris Peer) were treated with phosphite products from Plant Syence.

'What we found was that the plots showed an increase in root mass and tuber numbers, suggesting that the mother plant is using the available phosphorus to produce more daughter tubers,' says Mr Haywood. 'Depending on variety, tuber numbers increased by between 4% and 30% and tubers were of a more even grade. The increased root mass also helps promote water and nutrient



Rooster in a trial plot with increased tuber numbers on the right. The paler skins indicate a need to balance zinc input, says John Haywood.

uptake, helping to build the canopy so the plant can capture more sunlight and so fuel tuber development.

'The root systems of the treated potatoes were also found to be more branched – providing a significantly higher number of root hairs and a greater surface area for nutrient uptake and a point of communication between the plant and the beneficial microbes that feed and protect it.'

Mr Haywood claims that an additional benefit with phosphite material applied at planting and crop emergence, was evidence of improved disease resistance. He says the crop appeared to be healthier, stayed greener for longer and seemed more tolerant to environmental stress but, he adds, getting the right nutrient balance is important.

'Increasing phosphorous uptake gives rise to increased tuber numbers but this can deplete zinc concentrations, particularly in some red varieties such as Rooster. We found this could lead to reduced pigmentation giving a paler skin and lower tuber quality. With a bit of attention to detail and soil testing to match nutrient supply to crop requirements the addition of zinc would have gone a long way to correcting this issue.'

Live 'microbial' materials were also added to the soil and seed at planting. 'When combined with our phosphite material we have found that the microbes work harder and deliver far better results. You need to feed for the crop's potential, assess the nutritional requirements and be proactive – it will pay dividends. □



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