



Quality and legislation force seed-potato growers into action

“The soil is the heart of the arable-farming cycle”, argues Marco van Gulp of N-xt Fertilizers. “A healthy soil produces a fertile result. It’s the reason why N-xt fertilisers do not contain salts, but organic acids. These acids do not impede the soil process and improve the quality of the seed potatoes.”

Quality as the starting point

In a search for suitable fertilisation strategies, many arable farmers are looking for a product that feeds the crop. Marco van Gulp does not start with feeding the potato plant, but believes that feeding the soil is the most important issue. “The soil is the home of biology. A proper soil analysis is an important starting point and must serve as the construction plan for the soil.”

“We want to go totally liquid”

Nico Gebbink has an arable farm in the Noordoostpolder. He has been an N-xt user for many years and over the years has become absolutely convinced of its effects on his crops. “We started with blocks of 3.5 hectares and now we do all our crops with N-xt. Since we started using N-xt we see more soil life. There are definitely more worms in the soil. We want to go totally liquid.” Nico Gebbink uses the fertiliser in combination with compost and other soil improvers. “This enables better nitrogen management. We still have to see where we get to this year, but after a few years of looking for

the right ratios we have achieved a good distribution over the last few harvests, less collapse, improved tuber setting and more tubers per plant. We don’t use the product for the yield as such, but largely to improve the quality of the crop and the soil. The higher quality requirements that are imposed on our product and the stringent legislation regarding the use of fertilisers force us to take measures aimed at improving soil health.”

“Importance of calcium still underestimated”

Besides the soil fertiliser, Nico Gebbink also uses the quality fertiliser N-xt Calcium. This fertiliser was developed by Marco Van Gulp, amongst others, to make calcium more available to potatoes.

“Calcium is a tricky mineral in the soil, but it is essential to the plant.” Enough calcium prevents the blocking of nutrients, but its absorption depends on many factors - root zones, growing conditions, displacement and evaporation all play a role. “The importance and the effects of this mineral are still underestimated. High concentrations of sodium and chlorine impede calcium absorption. Too much nitric nitrogen encourages growth above ground, but at the expense of root growth and calcium absorption.”

Calcium is crucial to tuber formation because of the role it plays in the structure of cell walls and membranes, but also in enzyme control and a proper cell division and cell elongation. Potatoes absorb most of their calcium at the start of the growing season. “The optimum

administration time for this quality fertiliser is just after planting and before ridging up. “It is applied very easily with the field spray. As soon as the young hair roots start to form, there is enough bioavailable calcium. Calcium fertilisers in seed-potato farming are worth their while immediately if you have issues with scab or the quality of the skin”, comments Marco Van Gulp.

Optimum use

The main properties of N-xt fertilisers are that they make ammonia (nitrogen) and bioavailable phosphate available to the crop in a natural way for a longer period of time. “The minerals bind to the clay-humus complex within 24 hours and do not leach out. The conversion into nitrate is prevented naturally, which means you do not require chemicals that affect soil life. This ensures the phosphate and the trace elements in the fertiliser are used to best effect.” The focus is explicitly on creating a natural soil balance for the plant. “From the soil this starts with an optimum chemical balance. This in turn produces an optimum structure or physical balance and that is a prerequisite for a healthy soil biology.” Marco Van Gulp values the use of organic material. “In all our fertilisers we use urea as the basis for binding other minerals on a natural basis. It is a vegetable product and environmentally friendly.”

Kinsey-Albrecht analysis

Nico Gebbink admits that it takes a lot of patience to work with these products. “You have to do it for several years before you can start measuring real differences. They say ‘measuring is knowledge’, but it is easy to get bogged down by too much knowledge. With

these sorts of things it is a question of having a go, trying it out and always asking yourself what works for you. Working with liquid fertilisers, such as N-xt, requires a different mind-set and calculation modules. We are still learning every day. A good example is using leaf fertilisers to improve tuber setting. You can do this too early, but you have to be careful that you don't administer it too late. The ideal time varies enormously and even differs from variety to variety of potato. In order to obtain more insights, we had a soil survey based on the Kinsey-Albrecht method carried out last year. As soon as we have the results we will adjust our fertilising schedule accordingly."



Potato grower Arnold van Woerkom (left) with Marco van Gulp. Mr van Woerkom has used N-xt fertilisers for 16 years and recently started to supply W16 potatoes to hospitals. The main reason why hospitals choose Van Woerkom potatoes is that they contain 30% more minerals.

The Kinsey-Albrecht method of N-xt Soil Services is about balancing the minerals in the CEC (the clay-humus complex) to ensure the plant has access to all trace elements. This method considers the minimum required amount and the maximum required amount, whilst most soil surveys do not go beyond analysing the minimum required amount. Marco van Gulp says "The products of N-xt Fertilizers and Soil Services (soil advice and support) are developed in accordance with this method. We consider the long-term effects of those fertilisers on the soil. More of the same does not always produce a better result, and then you need to start looking at a different input. I compare it to fast food - it fills you up, but it is not nutritious. N-xt is focused on improving quality as a whole. That is the only way to achieve continuity in the yield."

Continuous dynamic process

In the current spectrum, N-xt is one of the few fertilisers that does not disrupt the soil process and in the long term it can even contribute to recovering soil health. "This starts with a soil analysis and then you come to a sort of transition phase. The fertiliser is administered for one growing season and then you need to take a critical look at the causes of the deficiency, for example available calcium in the soil. Together with the arable farmer we try to get insight into the ratio of calcium and magnesium that is present. We consider where the cycle needs to be supplemented."

Marco van Gulp continues "We do this by putting a healthy soil at the heart. You achieve this with good chemistry, physiology and biology. This produces improved resistance, higher quality and more yield. To optimise that we perform soil analyses and add soil, quality and leaf fertilisers.

We give advice and continue to monitor. A healthy soil and a fertile result are a continuous dynamic process that needs constant work.

The crop is your biggest and most important tool. We see the soil as the house of biology, after which the conglomerate can feed the plant. This must be maintained properly and it needs a solid foundation. The basis is a construction plan of your soil and that is exactly where the Kinsey-Albrecht analysis stands out from other soil analyses", says Marco Van Gulp. Nico Gebbink adds "The soil is the engine of my business. It's what produces the result, so I'm more than happy to put a little more energy into that. With N-xt fertilisers I invest in the soil and the crop for the same money."

"We consider the long-term effects of those fertilisers on the soil"



Long-term studies demonstrate a clear improvement in skin quality in various varieties. Above untreated potatoes, below treated potatoes of the same variety

Unique fertilisers and practical soil advice

N-xt Fertilizers supplies soil and leaf fertilisers that are used successfully for potato cultivation. The products improve the yield, create more favourable size grading and a top-quality product. The N-xt products also improve the crop's resistance to plagues and diseases.

N-xt Soil fertilisers

- Efficient phosphate application with FertiPhos on the tuber
- Complete fertilisers with ammonia, phosphate and trace elements in the row alongside the tuber

N-xt Calcium

- Stimulates tuber development
- Reduces the chance of being affected by scab
- Contains available calcium, boron and ammoniac nitrogen

N-xt leaf fertilisers

N-xt leaf fertilisers are used from tuber setting. As they have the right type of nitrogen, it encourages continued growth of the set tubers.



Step by step to a fertile soil

A healthy and fertile soil is crucial to the yield and quality of your product.

N-xt Soil Services lists the steps you need to take to achieve better soil fertility. The final two steps should always be in service of the first four. A fertile soil is and remains the best basis for a healthy and resistant crop, top quality crops and the best yield.

1. Soil analysis in accordance with the Kinsey-Albrecht method

Considers the exchange capacity of the soil, where the amount of calcium, magnesium and potassium plays an important role.

2. Analysis and expansion of active soil life

What does the soil contain in the way of fungi, nematodes, worms and bacteria. An active soil life produces a proper decomposition of organic matter from fertiliser, compost and crop remnants, improving the availability of minerals and trace elements.

3. Removing any compacted layers in the soil

Many plots have compacted layers that impede soil fertility. In dry times they produce a poor moisture distribution and in wet periods they cause poor drainage. You can use a Penetrometer to measure the layers and a deep subsoiler to solve the problem.

4. Increase the amount of organic matter

Green fertilisers, manure, compost and crop rotation can be used to restore the levels of organic matter and to stimulate humus conversion.

5. Tweaking the amount of trace elements

The Kinsey-Albrecht report tells you exactly which trace elements need to be supplemented to have optimum soil processes. It goes without saying that this should be linked to the needs of the crop too.

6. Fertilising in function of crop needs

On the basis of the crop needs, you add nitrogen, phosphate, potassium, magnesium and sulphur. If the soil is in order, you will only need to add minimal amounts.

Would you like to know more? At www.vruchtbarebodem.nl you will find plenty of knowledge and inspiration to achieve a healthy soil with a fertile result!

For more information about N-xt Fertilizers
Marco van Gorp

www.n-xt.com
+31 (0)6 105 542 38
info@n-xt.com

