N=xt FERTILIZERS

'The soil is the cow's first stomach'

Grass that tastes good, has a good structure and balanced nutritional value, a healthy livestock herd and top quality milk. "The one follows virtually automatically from the other", explains Marco van Gurp. "But it all starts with the soil." According to the fertilising specialist many livestock farmers are still seriously underestimating the importance of optimum soil fertility and health. "In fact, the soil is the cow's first stomach. That's where it all happens."

"The soil is the engine of the livestock farm. People sometimes forget that. The structure, chemistry and biology of the soil form the cogs that drive this engine. The organic matter is the engine oil." This is Mr van Gurp's way of explaining that all factors affecting soil fertility affect each other and have a strong impact on crop growth and even more on crop quality.

Mr van Gurp comments: "It's not the crop that fertilises but the soil. That is certainly the case now that the use of animal and artificial fertiliser is being cut back." The soil has to do more and more under its own steam, to maintain its fertility using the organic matter and soil life present in the ground. "You get the best results by optimally supporting these processes. With our ´N-xt Fertilizers´ we steer by grass yield, grass quality, crop resilience and healthy soil. These are the four pillars of the vision of N-xt Fertilizers on future-oriented fertilisation.

Grass yield

Practical tests in which the outcomes of fertilising grassland with KAS and N-xt Fertilizers are compared show striking results. We see, for example, that crops develop much better with the use of N-xt Fertilizers products both above ground and underground. In long-term practical tests in Friesland in which the effects of four different fertilisers were compared, the products of N-xt Fertilizers consistently achieved the highest dry matter yield per hectare. Similar results were achieved in tests conducted in Overijssel and Drenthe.

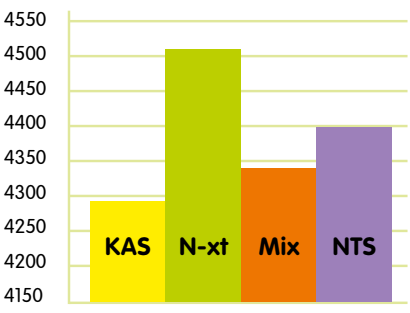
Grass quality

As well as extra yields, N-xt fertilisers also guarantee improved grass quality. Comprehensive analyses of the amino acids pattern of grass fertilised with N-xt and KAS show big differences. Independent studies have shown that in the analysis of all of these 20 amino acids in the raw protein, the key aspect is the overall balance between them. The contents of the essential amino acids Methionine and Lysine in the grass fertilised with N-xt are clearly higher than in grass fertilised with KAS, and with KAS we also see a higher proportion of 'Non-protein nitrogen'. This

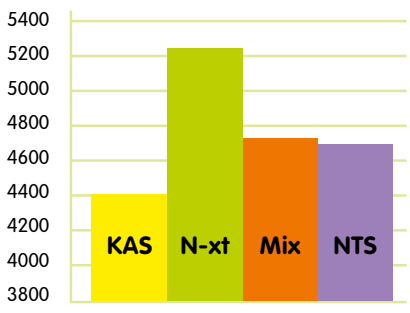
is apparent from the much lower actual raw protein compared to the raw protein calculated by BLGG. Non-protein nitrogen is less valuable to cattle as a building block for the formation of animal proteins (milk or meat).

All in all this makes it clear that an imbalance between amino acids and the presented protein leads to the protein in the animal being less effectively used. Only the complete set of amino acids delivers the desired animal protein, both for the animal's growth and the protein in the milk. This balance is plainly better with N-xt Fertilizers.

Higher dm yield of grassland with N-xt fertilisers



Independent study Friesland 2011(kg DS/ha)



Independent study Friesland 2012(kg DS/ha)

‘N-xt Fertilizers makes the grass stronger’

“The trick is to get and keep the cow in balance, says cattle expert Bernard Simons. “Fertilising with N-xt Fertilizers helps to achieve this.” These fertilisers stand out because their formula keeps the nutrients in balance. “N-xt Fertilizer makes phosphor active and nitrogen less aggressive. It also contains sulphur”, he explains. “This makes the grass stronger, ensures the cow is in top condition and produces quality milk.”

Practical approach

Offer a cow five different types of silage and she’ll choose ‘N-xt silage’. Mr Simons confirms this. “I’ve seen with my own eyes that cows can be very clear in their choice of good quality roughage.

N-xt silage simply smells better”, says Simons, who is known for his unerring ability to see whether the cow has a shortage of energy, protein, minerals or trace elements. Mr Simons has seen the quality of roughage deteriorate in recent years. “Grass is definitely weaker. This has to do with the structure of the protein and the sugars. The building blocks retain the water for too long, which reduces the production of sugars”, explains Simons. “Not much can be done about this, so I look for different solutions, such as fertilising with N-xt. You soon see that the structure of N-xt grass is much better.”

Bernard Simons of AgriVAK

Crop resilience

A bit later in the growing season the grassland often faces stress caused by drought, heat or dampness. An active and healthy crop is much more resistant to these conditions. That makes it very important to fertilise grassland in the early spring with easily absorbable phosphate and sulphur. This makes the crop active and resilient. During stressful periods it is by no means always the nitrogen that is deficient: a sulphur component could be missing, for example. We often recommend spreading extra organic liquid sulphur. This helps the process of converting nitrogen into growth. It also makes the crop more resistant to rust, for instance. Using 2-4 litres of N-xt Ferti-S per hectare can often make a big difference. This product contains biological sulphur particles that are produced by bacteria and are smaller than the grass stomas. This causes the product to be taken up very effectively by the soil and the crop.

Rust, untreated

No rust, treated with N-xt Ferti-S

Healthy soil

N-xt Ferilizers has been studying the effects of its fertilisers compared to other ones for a number of years at a test field in Wageningen. The yield, quality and various soil aspects have been studied. Also, last autumn N-xt Fertilizers had an independent study conducted into the soil biology at these test fields.

The soil biology of the plots fertilised with N-xt were compared with those fertilised with KAS. The study produced a number of interesting findings. It turned out, for example, that there is a difference in the indicator ‘ratio of active bacteria biomass/ total bacteria biomass’. This value is higher for plots fertilised with N-xt than those fertilised with KAS. Mr van Gurp comments “That means that using N-xt fertilisers

Amino acid study, grass		
3 repetitions g/ kg/dry matter	Block 3 **N-xt**	Block 3 **KAS**
Cysteine (Z)	0,3	0,3
Hydroxyproline	<0,1	<0,1
Methionine (Z)	0,6	0,5
Aspargine acid	2,5	5,5
Threonine	1,3	1,2
Serine	1,2	1,3
Glutamic acid	3,1	4,1
Proline	1,6	1,5
Glycine	1,5	1,3
Alanine	2,4	2,1
Valine	1,7	1,5
Isoleucine	1,3	1,1
Leucine	2,4	2,1
Tyrosine	1	0,8
Phenylalanine	1,6	1,4
Histidine	0,7	0,6
Lysine	1,8	1,6
Arginine	1,6	1,4
Tryptophan	0,54	0,49
Total amino acids	**27,14**	**28,79**
Actual raw protein	**170**	**179**
BLGG raw	**154**	**200**
DM (BLGG)	190	178
DM/hectare	3357	2848

probably produces a higher active bacteria biomass than using KAS fertilisers." The overall mould/bacteria ratio is also higher with the N-xt applications than with KAS. This shows that N-xt Fertilizers create a more evenly balanced ratio between moulds and bacteria. This is a promising result.

Unique technology

The N-xt Fertilizers are produced using a unique technology that ensures that the right form of nitrogen (ammonium) and easily absorbable phosphate remains naturally (organically) available to the crops. "The fertiliser uses urea as the basis for naturally binding other minerals. This makes the product plant-friendly rather than acting as a salt in the soil, which is what many other fertilisers do.

The N-xt fertilisers are formulated in such a way that they are actively taken up in the root system. The minerals bind to the clay-humus complex within 24 hours and do not leach out. Also, the conversion of nitrate is prevented by the organic properties of the fertiliser (no chemical additives). This causes the nitrogen to remain in the desired, easily absorbable form and optimum use is made of the phosphate and trace elements in the fertiliser.

Future-oriented fertilising

"N-xt fertilisers make it possible to fertilise the soil and the crop simultaneously", says Mr van Gurp. "The products increase the strength of the soil in order to achieve extra yield capacity. They stimulate the soil life rather than bringing it to a standstill. This makes it possible for a livestock farmer to operate in a plant-friendly way and allow the soil processes to find the right balance. Of course the soil management as a whole calls for more activities, and N-xt Fertilizers can advise you on those activities, too. That's what we call working together on future-oriented fertilising."

For more information about N-xt Fertilizers
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Next FERTILIZERS