

## PROFESSIONAL DEVELOPMENT

Free online tuition is available for all IPF Toolbox users. An interactive conference can be used to help clearly communicate training via the internet.



## TWO EXCITING NEW ADDITIONS TO THE IPF TEAM

We welcome Nick Strelczuk and Max Dafforn to the IPF Team. Nick and Max have graduated from The Royal Agricultural College and Warwick University respectively. Both have a keen interest in precision farming and will enhance the service you receive.

Please find an enclosed sheet for more detailed information about Nick & Max.



## UPCOMING ISSUES

- **Winter 2012**
  - Looking forward to eyeCrop 2012
  - Spring variable rate seed planning
  - Field Recording
- **Spring 2012**
  - Grain Protein
  - Field Recording
  - Nitrogen

## INDEPENDENT JOURNALISM

We believe our independence as a business is one of our main strengths. We are delighted to have independent articles provided by Andrew Blake.

Andrew has worked as an agricultural journalist for 24 years concentrating mainly on arable crops. He managed arable farms before taking up journalism giving him ideal experience for contributing to this magazine.

## LIFE CAN BE SUPRISING!

Farmer John was so excited with his variable rate muck spreading, he forgot to stop digging the muck once the heap had run out!!



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**EG Watson and Partners - From left: Phil Watson (Father), Shaun Watson & Anthony Watson (Sons)**

“We felt that as Courtyard was an independent company they would help us achieve our aims of savings costs and increasing yields by going down the precision farming route,” says Robert.

“I admit I was a bit sceptical at first,” says Shaun. “But last year we zoned half of the farm including some reclaimed land; and after the firm’s attention to detail and some outstanding yields we’ve decided to zone the other half this autumn.”

Although soil sampling and analysis of the fields had long been adopted it relayed only average nutrient levels, he points out. The IPF zoning maps, drawn up with the help of the Courtyard’s Will Walters produced some big surprises.

“On our lighter land, where we thought production was already quite good, we could see

exactly where we’d previously had horse muck heaps, and why, at the hungriest end, we hadn’t been getting the yields we’d expected.”

**The IPF zoning maps, drawn up with the help of the Courtyard’s Will Walters produced some big surprises.**

The subsequent specific fertiliser recommendations for phosphate and potash were gained via an on-line conference which turned out to be unexpectedly easy, he adds. “Will Walters is very patient and can even take over my computer screen remotely to guide me if I get stuck.”

**Right- Agronomist Robert Sullivan of Strutt & Parker has helped the Watsons with technical farming decisions and PF planning.**

New equipment to put the precise advice into practice included a Trimble Nomad computer with integrated GPS guiding and a Kverneland Accord Exacta TL spreader which replaced the farm’s outdated Vicon machine.

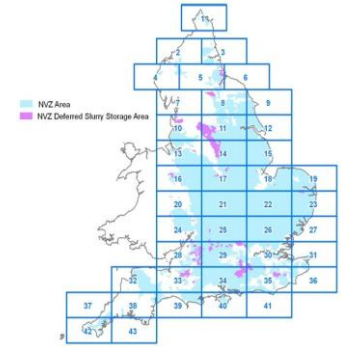
“We chose the Kverneland spreader as it was the highest spec machine for variable rate application,” says Shaun. “The recommendations are saved onto a memory stick which fits into the Trimble in the tractor cab.”

Changing to precision fertilising meant switching from compounds to straights – triple superphosphate and muriate of potash – and the yield increase in winter barley last harvest was encouraging. “It did 4.8t/acre compared with our more normal budgeted 3t.”



# NVZ Manure Risk Maps

## New to the IPF Toolbox



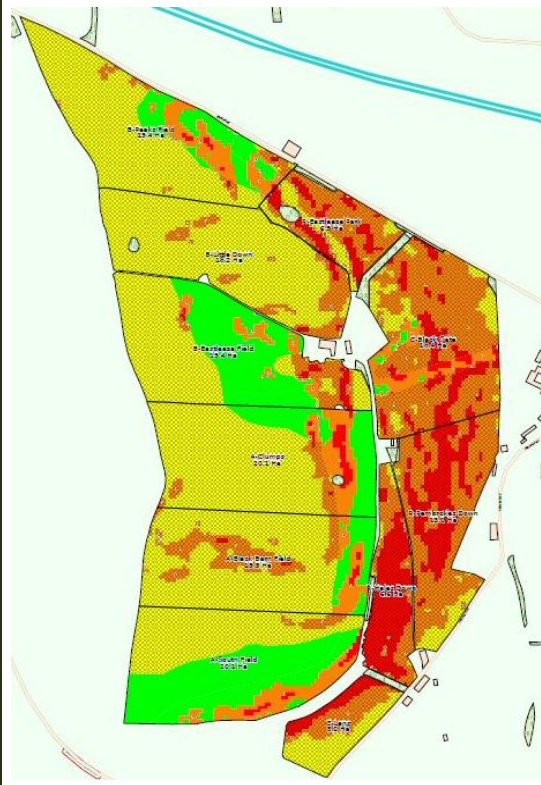
The Nitrates Directive, adopted by the European Union in 1991, aimed to reduce water pollution caused by nitrogen from agricultural sources and to prevent pollution in the future.

Nitrate Vulnerable Zones (NVZs) include all land draining to waters that are affected by nitrate pollution. Virtually all farms are covered by NVZ compliance now and we have upgraded the IPF Toolbox to help make your farms management and compliance easy.

NVZ Manure Risk Maps can be downloaded from your IPF Toolbox account. These maps have incredible detail with an Ordnance Survey background and a 10 meter altitude grid to accurately assess slopes.

If you apply any organic manure to your land you should have a risk assessment map like displayed below. If you have not already created one please download it from your Toolbox account, the environment agency will expect you to have one!

The great news is that these maps are provided as part of your IPF service and you incur no additional cost.



"I was spreading on the second day with the tractor rear window open. I heard the spreader shut off altogether and wondered what had happened. But after I'd gone another 10-20 yards it started up again – and I realised that it had stopped where we'd once had a large pile of horse manure. It gave me the confidence that the system obviously knows what it's doing."

The capital outlay for adopting the precision route came to about £14,000. "On top of that we paid about £250 for the mapping and £1.50 per acre for 300 acres of satellite imaging."

The farm saved about £7,500 on potash in the first year, he calculates.

"But that was just about offset by our having to apply more phosphate because some parts of the farm were particularly hungry. So overall we didn't make any savings. But I'm happy with that because looking to the future I feel that what we're now doing is good farming practice."

In Robert's experience variable rate spreading does not generate significant savings unless there are vegetable or potatoes in the rotation, or muck is being applied.

"However, almost without exception yields increase. We are now confident that the nutrients applied meet the needs of the crops resulting in improved yields from the poorest areas of fields."

Already Anthony has been using the IPF maps to guide muck spreader applications of green waste compost to the poorer land areas, he notes. "It was Dad's idea."

The compost, delivered for £3/t, is a cost-effective way of boosting not just P & K indices but sulphur and magnesium levels as well, he explains. "We use a lot of horse manure, but it doesn't have much sulphur or magnesium. With the price of fertiliser going through the roof the compost is very beneficial."

"Based on the production levels so far we feel we can drop second wheats from the rotation. Our next step will be to introduce variable rate seeding and complete zoning on the whole farm"

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**Below Left – Tynegrain's David Young and Phil Watson with the farms new Kverneland Accord Exacta TL spreader.**

**Below Right - Watsons Väderstad 3m drill will be upgraded next season to enable variable rate seeding.**



# Yield Maps on the IPF Toolbox!

For many years farms have been using yield maps as an interesting dataset but have not been reacting to the variations in an accurate and proactive way. We are pleased to announce that the IPF Toolbox now has fully integrated yield maps; this enables you to combine your yield maps with variable rate plans for truly accurate precision farming.

This summer we worked with the leading combine retailers throughout the UK in order to gain access to their individual yield map file types and software. Once we had collected the information we handed it over to the development team who spent the last few months developing the first online yield mapping viewer to the IPF Toolbox. You will notice that there is now a new tab located alongside the eyeCrop tab on the IPF Toolbox called Yield Maps; this is where your yield maps data will be held. The yield maps which can currently be uploaded onto the IPF Toolbox are:

- Claas
- New Holland
- Massey Ferguson
- Case
- RDS
- John Deere (Coming soon)



MASSEY FERGUSON

NEW HOLLAND



JOHN DEERE



The addition of yield maps to the IPF Toolbox is going to allow farmers and advisors to analyse the overall performance of their crops post-harvest alongside all of the other data held on the IPF Toolbox account. This will allow you to refine and improve future variable rate plans with the aim to maximize yield.

If you have yield maps which you have not yet sent to us please follow these instructions.

1. Copy the yield data from your Flash card or if it's on your PC then backup your yield data from the yield mapping software.

2. Email the files to:

[will@courtyard-partnership.co.uk](mailto:will@courtyard-partnership.co.uk)



Phosphorus (P) is an essential macronutrient required for:

- Healthy root development and tillering
- Flower and seed development
- Improved water use efficiency and overwinter survival

Phosphate added to the soil in conventional fertilizers becomes unavailable, especially in acidic or calcareous conditions. Our database shows that very calcareous soil codes (eg E2k, A2k and B2k) generally have a low P index

New complexed superphosphates claim to reduce soil retention of phosphate and improve its availability



# *Under the microscope:* Conventional Vs. Complexed Phosphates

By Zhigang Liu and Max Dafforn

Phosphorus (P) is an essential macronutrient needed by plants in relatively large amounts for healthy growth. In early plant growth it is required for root development and tillering.

However, it is also involved with the conversion of light into energy for the plant, so is important for flower and seed development later on in the season. Good P status can also improve water use efficiency and help plants survive through the winter.

Phosphate added to the soil in fertilizers is initially quite available to plants, but as it comes into contact with soil particles, various reactions begin to occur which 'fix' the phosphate and make it unavailable. This process is affected by soil conditions; in acidic soils phosphate will react with aluminium (Al) and iron (Fe), whilst in calcareous soils it reacts with calcium (Ca).

Therefore efficient uptake of P is very important.

The manufacture of organic-complexed superphosphate can improve phosphate availability compared with conventional superphosphate, such as Triple Super Phosphate (TSP).

The Roullier Group has developed a new complexed superphosphate (CSP) product, Top-PHOS, which is claimed to reduce soil retention of phosphorus and improve availability to plants. Top-PHOS is also reported to have soil microbe enhancing properties which accelerate the decomposition of organic matter and increase root development.

The Courtyard Partnership carried out trials on four farms with different soil types to compare Top-PHOS with TSP to investigate its effect on soil phosphorus availability, root development, growth and yield. Fields previously split into Intelligent Precision Farming Management Zones containing winter oilseed rape (WOSR), winter barley (WB), and winter wheat (WW) were chosen for the trial. Trial areas were sampled for P before and after winter applications of TSP and Top-PHOS to assess the available P in the soil. Tissue analysis was also carried out to find out the P content in the crops. Satellite images showing normalized difference vegetation index (NDVI) were used to compare differences in crop vigour resulting from the two products.