

Drilling down into fixed costs

New Machinery Tool provides in depth fixed cost analysis



Improving financial performance on combinable crops relies on a true and accurate understanding of fixed costs, says Will Foyle farm business consultant with Hutchinsons.

"Whilst a focus on yield is still important, understanding and being able to control overheads or fixed costs, is key to financial integrity. We know that a higher wheat yield improves financial output, however, it is a lower level of fixed costs that will make the greatest difference to performance/hectare," he says.

Mr Foyle recognises this is a complex area as machinery depreciation costs are often misunderstood or incorrectly valued which can make a large impact on profit/hectare.

"It can be difficult to clarify the metrics of depreciation of machinery, linked to areas worked and work rates for example, alongside the more visible labour and diesel costs."

"You don't receive a monthly statement for your fixed costs in the way you do for variable costs."

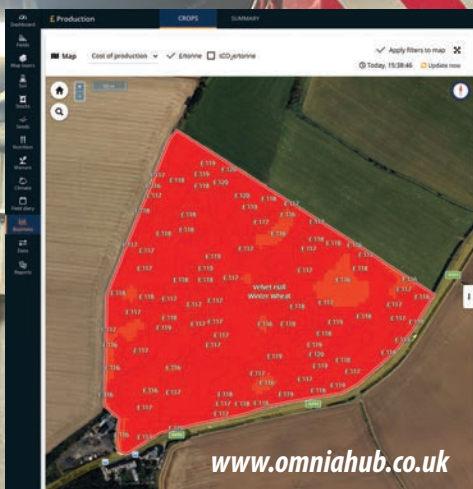
As a business, looking at costs of producing a crop is an area that Hutchinsons has been working towards making simpler. This began last spring with the launch of the Business Performance Module on the Omnia digital farming platform, which allows for retrospective calculation of the cost of production of field operations in both £/tonne, CO₂/tonne or CO₂/hectare, based on a slider measurement for where those costs sit.



Will Foyle (Hutchinsons Farm Business Consultant)

However, the new **Machinery Tool** takes this one step forward and provides a simple way of calculating actual and accurate operational machinery costs before committing to field operations, for individual farm businesses based on its own figures.

"This is done by breaking down all the components of cost related to running a particular piece of machinery to realise the true, not approximate, costs of operation," explains Mr Foyle.



Within the Machinery Tool depreciation ranges take in to account the age, value, areas/hours worked per annum, alongside servicing and repairs to give the fixed costs of a particular piece of machinery, so instead of an approximate figure being used, as was previously the case, real costs can be inputted. Work rates alongside diesel and labour costs are then calculated giving a total cost per ha and per hour for running both the tractor and machine.

This cost can then be added into the virtual machinery shed in the Business Performance Module on the Omnia platform and when overlaid with yield and variable costs gives the real costs of producing a crop in that field.

Once calculated it is possible to look at how invisible or fixed costs may be better managed. For example, if the depreciation cost is higher than anticipated, is it that the capacity of the machine is greater than needed? Perhaps it is possible to run the machine for longer, say six years rather than four?

Mr Foyle quotes an example of how a farm changing over from a mixed tillage system using a 2015 4m Vaderstad Rapid to a direct drilling regime with a new Claydon Hybrid.

Looking then at what the Vaderstad is used for – it was retained for drilling 40ha of grass seed annually but alongside power unit fixed costs, fuel and labour the calculated depreciation of £1,680/annum across a small area meant this operation was now costing £66/ha as opposed to £27/ha when covering 200ha annually.

“So, in this situation, a discussion around whether to keep the drill for flexibility purposes or sell and use a contractor for the grassland re-seeds, would be sensible.”

Helix host farmer, Thomas Todd, of Bareless Farm, Cornhill upon Tweed, Northumberland was one of the first to trial the new Machinery Tool.

“With the demise of the BPS it is more imperative than ever before to have an accurate figure for fixed costs. This is for two reasons, one just to know exactly what it is costing to grow a crop, but also for future planning and making decisions over cultivation changes and the implications of buying new machinery.

In the main Mr Todd is happy with the machinery he has and feels he achieves a competitive cost/hectare.

However, he used the Machinery Tool to look at the potential implications of moving from direct drilling to predominantly min till. “We have been looking at going down the min till route. What we found using the Machinery Tool is that the costs of a new machine just didn’t play out, particularly as we would not be using it for 100% of our cultivations.”

“It has made us look at how we can use what we have more efficiently, and we have even thought about dropping some cultivations, for example on the rape.”

“Using the Machinery Tool has certainly challenged our perception of what crops are the most profitable; for example, our spring barley can be as profitable as winter wheat, as it is a lot cheaper to grow in terms of not only less fixed costs, but also lower variable costs.”

“We are going to carry out the same exercise with other break crops and it will be interesting to see what comes out on top.”

“We are very fortunate as Helix farm hosts as we are privy to trialling exciting new tools and technologies to improve farm profitability and the Machinery Tool is the perfect example of this. We have found it straightforward and easy to use and invaluable to managing profitability going forward. It certainly challenges us against taking the approach I’ve always done it this way so why change”.

For more information about the Machinery Tool, please contact your local Hutchinsons or Omnia representative, alternatively please visit the Omnia website: <https://omniadigital.co.uk>

Managing cereal disease before the Spring



*As combines begin to roll (when the rain allows) it is worth reflecting on what has been one of the most challenging cereal disease management seasons we have had in recent years and what we can learn from it, says **David Howard** (Hutchinsons Head of ICM).*

It is of course essential not to be caught in the trap of farming this year's crop with last year's approach, but this year's high disease pressure across the country has highlighted the importance of the basic agronomic decisions in decreasing your disease risk and making a difficult season manageable.

In the season we have just been through we saw disease pressure build in crops early with Net blotch in Winter barley crops and Septoria in wheat being found before Christmas. This was then exacerbated by high rainfall throughout the winter and early spring. In fact, up until early May the amount of rainfall received across the country was startlingly similar, meaning that areas of the country which traditionally experience low Septoria pressure were under the same conditions as the much higher-pressure West and South West. Temperatures fluctuated and luckily, at times remained cooler than average, with cold nights. Had this not been the case then disease could have become unmanageable. We then saw the season warm up and dry weather proliferated reducing Septoria pressure around T2, but the sudden change in weather condition brought with it a change in disease pressure with the previously unseen

yellow and brown rust rapidly exploding in crops. Yellow rust had been present in low levels in crops before then, but it was only because cold weather in the autumn delayed its entry into crops, and many T1 applications were early, that it was relatively absent until the change in conditions. Then finally, as we are acutely aware of at the moment, we have seen a return to wet and warm conditions which have favoured disease pressure once again.

So why is understanding how disease pressure is built important? The reason is it informs several key management decisions.

Rotation

A wide and balanced rotation is something which is becoming increasingly difficult to create or maintain as more crops either become too great a risk to grow or are financially challenged. This means relatively "safe" crops like Winter wheat tend to increase their proportion in the rotation. This must be monitored carefully, as in high disease years as we saw last year there was a greater risk to those crops on closer rotations. This is primarily because the more regularly the crop

is in those soils to host disease, the greater the inoculum carry over into subsequent years. Though traditional cropping options remain challenging, there are now new more flexible options in the SFI which might make them more suited to being included in the rotation, and therefore offer a lower risk break crop solution.

Drilling date

A key factor which has been obvious this year is drilling date. Though many know intrinsically that the earlier or later you drill a crop increases the likelihood of enhanced pressure from the different diseases. There was a clear move last year to drill earlier than standard, perhaps off the back of the last few testing years in terms of drilling windows. This led to an increased Septoria pressure on those crops. In some cases, there was 90 day degrees difference between those varieties drilled mid-September vs those drilled mid-October. Meaning the crop was exposed to any early spores for significantly longer and any disease present was able to move that much further through its lifecycle in that time. AHDB have done great work looking at exactly this area and they have shown that taking a variety drilled around the 7th of October and moving that drilling just 2 weeks earlier to the 22nd September reduced the



► Septoria resistance score by 0.6. The converse is also true by taking that same variety and drilling it 2 weeks later it adds 0.6 to the score. Drilling date becomes crucially important where the varietal resistance is already mediocre, as disease risk quickly becomes a concern. As such, where scale or workload mean early drilling is a necessity this risk should be buffered by the selection of appropriately robust varieties. Where weaker varieties are required for their traits or specific markets these should be left towards the end of the drilling campaign. It is also important to remember that yellow rust is favoured by later drilling, therefore any variety chosen for this later slot should ideally have a robust yellow rust score.

Varietal resistance

Because disease built early, we saw higher levels of disease in varieties which we might expect to be more resilient. The reason for this is that many of the varietal disease resistances, aside from juvenile yellow rust resistance, are not working to their full until beyond GS32 of the crop. For this reason, varietal disease resistance was much more variable last year. Particularly those varieties with more average scores as the heightened pressure quickly overwhelmed lower leaves in some cases.

Even though more robust varieties showed more disease than expected they were still noticeably more able to keep disease at bay for longer than more susceptible varieties this year. As such, where disease risk is a concern, resistance should be the obvious starting point going into next season. There are an increasing number of higher yielding and agronomically strong varieties available, therefore finding a suitable resistant variety is no longer the trade-off it once was.

For those wishing to experiment further, and where the end market allows, then the use of varietal blends could be considered. Hutchisons have been trialling them for a number of years now and we continue to see reliable results in terms of disease management. As long as varieties chosen have suitably different genetics then we tend to see a reduced disease pressure particularly in reduced input situations or areas with high disease pressure.

Soil and Nutrient management

Keeping the plant healthy and managing nutrition to reduce deficiency can play a key role in reducing disease pressure as plants which are less stressed are better



David Howard (Hutchinsons Head of ICM)

able to resist disease. The previous season has been challenging nutritionally too as the excessive amounts of rainfall, compromised soils and changes to fertiliser and micronutrient availability meant more crops showed visible deficiency symptoms in the winter and early spring. Improvements to soil health tend to lead to improved nutrient cycling and availability whilst also increasing the ability of plants to take up applied nutrition.

As we continue to see more challenging weather and climate patterns, rapidly changing disease populations and continued fungicide resistance, these early agronomic decisions should all be considered as part of the integrated disease management of the crop.

Questions about integrated disease management? Please contact us: information@hutchinsons.co.uk



Supporting the next generation of agronomists

Earlier this year, agriculture students from leading universities and colleges took part in a competition designed to provide a unique insight into the role of the modern agronomist.

The initiative was organised by Hutchinsons, and attracted around 120 students from Writtle University College, The Royal Agricultural University (RAU), Harper Adams University (HAU), Nottingham University, Riseholme College and Bishop Burton College.

Students had the opportunity to visit one of three Helix demonstration farms in Oxfordshire, Yorkshire and Shropshire, where they were given practical demonstrations of the roles, responsibilities and technology available to agronomists in the field. Attendees then had to answer questions about what they had learnt, from which three winners were chosen, each taking home £100 prize money.

"Since Hutchinsons was formed 85 years ago, the role of the agronomist has changed markedly, and particularly so in the last 10 years, so we wanted to give students a taste of what the job entails, and the technologies available to help us make better decisions for growers," Hutchinsons technical director, Stuart Hill said.

"The agronomist's role now goes far beyond advising on crop protection,

covering anything from strategic business planning and costings, integrated crop management and agroecology, soils, nutrition, traits and digital technology."

Integrated solutions

This holistic approach to crop management was clearly demonstrated by agronomist Amie Hunter, who explained how crop protection was just one of the four pillars of integrated crop management, the other three being; agronomic strategy, risk assessment, and cultural methods.

ICM covered everything from rotation, variety choice, and cultivation policy, to cropping, nutrition and crop protection strategies. All were interlinked and required a clear understanding of the processes involved to make effective decisions, she noted.

"ICM isn't new, but it can be quite hard to manage given that there are so many different factors to consider. This is where technology such as Omnia is really helping growers and us as agronomists, by bringing everything together in one accessible platform."



Winning student

Bogdan Diedov,
BSc Agronomy, RAU

Third year agronomy student Bogdan Diedov, has a passion for sustainable agriculture, and recognises the need for innovative solutions to feed a growing world population.

"I attended the Hutchinsons event hoping to gain an insight into the latest research in agronomy, network with industry professionals, and learn about potential career opportunities."

"The event exceeded my expectations, providing valuable information and possible connections to help me in my future career. Key findings included learning about Omnia Digital Farming, and methods to improve soil health."

After graduation, Bogdan wants to become an agronomist and believes sustainable practices are key to helping farmers reduce their environmental footprint, conserve resources and maintain soil health, making the food system more sustainable and efficient.

"As an agronomist, I am fascinated by the potential of biotechnology to solve agricultural problems. I want to explore how biotechnology can improve crops, pest, and disease control, and resource efficiency."

To find out more about the career opportunities across Hutchinsons, go to www.hutchinsons.co.uk/about-us/careers

Encouraging new entrants

The Hutchinsons Foundation is a three-year training programme focussed primarily on giving new entrants a route into agronomy, although it also supports those wanting to pursue a career within the company's other specialist services and technical roles.

There are two main routes into the Foundation; either directly from University, or those who have worked on a farm in different roles and are looking to re-train or specialise.

The programme allows individuals to gain their professional qualifications, and all the technical and "softer" skills training needed to become a successful agronomist. It is a fully employed role, with a good percentage of time out with colleagues, shadowing, and learning from them.

Hutchinsons also offers a year-long student placement programme.

Jade Prince (right)
Services Specialist

Advanced soil analysis: the most important investment you can make on your farm

*Are you looking to unlock the potential of soils on your farm?
Jade Prince (Services Specialist) asks the question.*

This year's Helix events opened a door into the world of soil functionality, highlighting how our advanced Gold soil analysis, TerraMap Gold and consultancy services can be used to capture and then interpret the intricate dynamics at play in our soils.

In this article, we delve into just four areas of the Gold soil analysis that are key to starting your soil functionality journey.

pH and buffer pH of the soil

pH, or water pH, is the measurement you will be used to seeing on a standard soil analysis. It tells us soil acidity or alkalinity at the time of sampling. The Gold analysis goes beyond this, providing an additional measurement, Buffer pH.

This tells us what pH the soil would sit at, if not for our intervention. Ideally, we want pH and buffer pH to be within 0.2 of each other. This indicates that the soil is less likely to undergo drastic fluctuations, maintaining optimal conditions for plant growth as the soil readily accepts or donates nutrients. However, disparity between the two can lead to nutrient imbalances, as the soils' ability to regulate nutrient availability becomes compromised. It can also indicate preferred microbial dominance between bacteria and fungi.

Through Healthy Soils analysis and consultancy, we can work towards correcting any pH disparity and improving nutrient availability.

CEC

Cation Exchange Capacity is important as it determines the ability of the soil to hold on to cations, like Calcium, Magnesium, Potassium, Sodium and Ammonium. Influenced by soil type, OM content and pH, CEC essentially tells us the size of your soil, or its ability to hold on to nutrition. The larger the CEC, often found in clay or high OM soils, the more nutrients that can be exchanged and used by plants, the lower the CEC, often found in sandy soils, the less nutrients will be held in the soil.

From this, Healthy Soils can advise you on how to best manage any nutrition applied to the soil either as chemical fertilisers or organic manures.

Bulk density and texture

The soils' bulk density and texture provide an insight to structure and associated features including water infiltration, available water capacity, soil porosity and rooting ability. An ideal bulk density is around 1.1-1.2, meaning there is space between soil particles for air and water flow and root growth.



Cultivated (R) vs uncultivated soil (L)

We can advise on best steps to improve the bulk density of your soil, to ensure that your crops have the best possible chance of success.

Extractable and total nutrients in kg/ha

Not only does the Gold analysis provide available nutrient quantities, but it also provides total nutrients allowing us to identify real nutrient deficiencies and uncover nutrient imbalances. We will advise on best practice to ensure we make the most of these two pools, with the aim of improving soils' functionality, optimising fertiliser efficiency, and increasing profitability.

These four areas of the Gold analysis are all important soil properties and by measuring them we can forget guess work and embrace data-driven decision making that will optimise resource use, maximise yields and foster sustainable farming practices.

The most important thing is to get these parameters measured and then get the results interpreted, allowing understanding of the interactions and the best management practices to boost your soils' functionality and your farms profitability. The Healthy soils team covers the whole of the UK delivering this service.

To invest in the future of your farm by advancing your soils please contact soils@hutchinsons.co.uk

For more information on any of our products or services, please contact your local Hutchinsons agronomist, or contact us at:

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