

The proof is in the pudding

“YieldOn is quite unique in how it works.”

Research Briefing

Data from the latest trials from Valagro UK has shown a statistically significant increase in yield where its biostimulant product, YieldOn, was used. CPM explores the findings.

By Charlotte Cunningham

In a world where it's possible for cars to drive themselves, or to control your household electricity through voice activation, it seems slightly unfair that growers don't benefit in the same way when it comes to being able to flick a switch to boost yields.

And though a yield-building app might be a bit too far off to envisage, what growers do have access to is an enriched plant-based biostimulant which has proven quite literally to turn up the yield potential at the business-end of the season.

Biostimulants have been causing quite a stir — positively and negatively — for some time now and as the market and demand for such products has progressed, offerings from manufacturers have gone from 'snake oil' to more proven, science-backed solutions.

But as the ability of these products have grown so has the hunger for data to substantiate manufacturer claims.

And this is exactly what Valagro UK has aimed to demonstrate in its latest set of independent trials on its product, YieldOn. Globally, YieldOn has a strong heritage of evidence to back up its claims, with Valagro — formerly Maxicrop UK — having a foot firmly in the door with biostimulants from plant extracts long before the acquisition in 2002, says Shane Deaville, country manager.

Spring barley trials

Mike Garner, technical manager, explains that the aim has been to demonstrate that the proof really is in the pudding when it comes to YieldOn and the results growers can expect to see under UK conditions. “After successful trials on both wheat and oilseed rape, we wanted to see if we could prove the same effect on spring crops — namely, spring barley.”

Shane picks up the conversation and adds that having independent data was incredibly important. “Carrying out our own in-house trials wouldn't carry the same clout. We're really excited about the product and wanted to be able to show that, independently.”

The latest trials were carried out over two years (2020-2021) in North Yorkshire by independent contractors Cropsure.

The first year looked at the effect on YieldOn on a crop of Planet, drilled at the end of March following spring barley, at a seed rate of 350 seeds/m². “YieldOn was applied on 31 May under good — albeit dry — conditions when the crop was between GS37-39,” explains Mike.

Looking at the post-harvest numbers, the YieldOn treated spring barley demonstrated a 0.37t/ha uplift in yield at an average of 6.94t/ha — compared with 6.57t/ha in the untreated Planet, he explains.

Year two looked at the effect of YieldOn on a crop of Diablo, drilled at 350 seeds/m², following forage rape. Drilling took place on 2 April and the site was a sandy loam, recalls Mike. “YieldOn was applied on 15 June when the crop was at GS37, at a rate of 2 l/ha and the crop was harvested on 31 August last year. “Untreated yields averaged 7.21t/ha, whereas the spring barley which had received YieldOn came in at 7.55t/ha — a 0.34t/ha uplift.”

Across the two years of trials YieldOn was attributed to a 0.355t/ha uplift in spring barley yield, with untreated yields of 6.89t/ha compared with treated yields of 7.245t/ha (see table on page 69)

Similarly positive, consistent results have also been observed on further recent trials on wheat and OSR, concludes Mike.

As well as the recent trial data to support the use of YieldOn, Hutchinsons' Dick Neale is also an advocate for the biostimulant, having spent the past four years assessing whether it's a tool worth considering. “Biostimulants tend to get a notoriously poor result in terms of statistical significance in small plot trials, but we quickly realised this wasn't the case for YieldOn which made it stand out from the rest immediately.

“The product was presented to us with a proven efficacy in a lot of trials so we wanted to look more at exactly how it did and could work — both alone and as part of a biostimulant programme.”

Hutchinsons look at many products within



YieldOn has a lot of potential across a wide range of crops, explains Mike Garner.

YieldOn – everything you need to know

YieldOn is a biostimulant formulated with a blend of plant and seaweed extracts and enriched with trace elements essential for crop production — manganese, zinc, and molybdenum.

The product is specifically designed to be

used at flag leaf/early ear emergence in cereals and during flowering in oilseed rape. It works by stimulating cell number and size in the developing grains, as well as enhancing the movement of sugars and nutrients into the grain sites.

Spring barley trial summary

| Year | Untreated | YieldOn treated at 2 l/ha | Yield uplift with YieldOn |
|--|-----------|---------------------------|---------------------------|
| 2020 | 6.57t/ha | 6.94t/ha | 0.37t/ha |
| 2021 | 7.21t/ha | 7.55t/ha | 0.34t/ha |
| Average yield across trials | 6.89t/ha | 7.245t/ha | 0.355t/ha |
| 2020; LSD = 0.13 CV P = 0.05 = 0.86 | | | |
| 2021; LSD = 0.234 CV P = 0.05 = 1.41 | | | |
| Source: Valagro YieldOn biostimulant trials data 2020-2021 | | | |

its own trials, and Dick says this has proved how important it is to understand exactly what the function of each specific product is — and what kind of result a grower is trying to achieve — before just applying a potentially costly product. “Quite often biostimulants get tagged with abilities to ‘stimulate’ a crop, but it’s really important to question exactly what it’s supposed to be stimulating and whether or not you need that stimulation in the crop.

“Something like YieldOn is very effective, but if you apply it at GS30, you’re not going to get a result because it’s entirely the wrong time of the year for that ‘stimulation’ to take place.”

Put simply, the function of YieldOn is to upregulate various hormonal aspects of plant growth, but for this to happen, the crop has to be in a good starting condition, he explains. “YieldOn is quite unique in how it works as it’s not there to



Shane Deaville says having independent data adds clout to YieldOn’s performance.

give a poorer looking plant a boost, or to help mitigate against stress — it’s there to literally turn on the yield ahead of harvest.”

Lessons learnt

The importance of this was demonstrated in Hutchinsons’ trial work last year, where YieldOn didn’t perform as well as expected — an anomaly in an otherwise consistent performance in both trials and commercial crops, adds Dick. “Of course, this made us question what on earth had gone wrong,” he explains.

“Quite often, biostimulant applications are targeted at struggling plants and the better-looking ones get skipped, but this is the opposite of good practice with YieldOn. So, we concluded that the reason for the lack of statistically significant yield improvements last year was because the product was applied to poorer, thin looking crops.

“YieldOn is a very targeted product with one purpose — to upregulate the carbohydrates built up in the stem and turn it into grain. However, if the biomass isn’t there, there’s nothing to convert, and in my opinion, it’s a waste of time and money applying this product. This really is the cherry-on-the-cake of good crop production.”

For best effect, Dick recommends applying YieldOn between GS39-65 — though targeting between GS59-60 has had most advantageous effect in Hutchinsons’ own work. “This may not align with traditional spray timings, so it’s important to factor in when you might realistically make an application.”

On commercial crops, Dick adds that the feedback has been similarly positive to



Understanding the biostimulant and optimising when you apply it and on what crops is essential for getting the most from it, says Dick Neale.

what’s been seen in its own trials. “We’ve had a number of growers who’ve carried out split field trials and have been satisfied that there’s a significant return on investment to warrant the spend.

“But understanding the product and optimising when you apply it and on what crops will be essential for getting the most from it. You can’t make a silk purse out of a sow’s ear.”

So what’s next for the firm who has science-backed claims at its core?

Mike says current avenues of interest are exploring the effect YieldOn could have on nitrogen applications, as well as the effect of the biostimulant in maize crops. “Our colleagues in France have noted some good results with YieldOn in maize and we’re wanting to explore this further.

“We ran some trials with the Maize Growers Association last year, and while there’s still number crunching to do, some of the early indicators point towards an improvement in metabolisable energy and starch content where YieldOn was used. It’s certainly a product with a lot of potential.” ■

Research Briefing

To help growers get the best out of technology used in the field, manufacturers continue to invest in R&D at every level, from the lab to extensive field trials. CPM Research Briefings provide not only the findings of recent research, but also an insight into the technology, to ensure a full understanding of how to optimise its use.

CPM would like to thank Valagro UK for sponsoring this Research Briefing and for providing privileged access to staff and material used to help bring it together.

