Nitrogen is an essential nutrient for yield and plant health, but its overuse has been the single largest cause of Nitrate pollution in Britain’s waterways.

Hummingbird’s Variable Rate Nitrogen Management tools help farmers and agronomists to target their nitrogen applications more effectively, reducing their inputs, maximising yields and protecting the environment.

“Hummingbird’s Variable Rate nitrogen tool allows us to generate detailed application plans based on the actual needs of the crop. I use their high resolution NDVI alongside the variable rate nitrogen maps to add another level of insight to my decision making. The shapefile download enables me to move the plans easily into my machinery.”

Farm Manager, Gloucestershire
HOW IT WORKS

- Hummingbird’s drones fly up to 250 Ha/dat, taking thousands of multispectral images at 4-8cm resolution.
- Hummingbird’s unique algorithmic analysis generates an application plan according to canopy variation measurements taken at different stages of crop development.
- Hummingbird’s analysis creates Variable Rate Nitrogen Application maps, delivering them to farmer’s and agronomist’s devices in a format that can be exported directly into their machinery.

WHY USE VARIABLE RATE NITROGEN?

- Precisely target fertiliser applications.
- Reduce nitrogen leaching into water courses.
- Encourage even canopy growth & optimise crop canopy size.
- Maximise yield.
- Increase control over grain protein and nitrogen levels.
- Manage lodging risk, reducing need for PGRs.
- Stay ahead of future regulations.

Great workshop by @TechHummingbird to #facilitationfund group today. Demonstrating use of #drone technology to improve use of fertiliser and reduce leeching into #rivers
APPLIED TO REAL ISSUES ON THE GROUND

Our Norfolk customer has used Hummingbird’s Variable Rate Nitrogen Application maps to target his fertilizer applications responsibly, avoiding areas at risk of flooding and only applying fertilizer where it is needed.

“This is how technology is developing on our farm. The red area is where the field has flooded and there was no crop growing, the dark green areas of the crop had high biomass and high yield potential.

At the timing of the last nitrogen application, nitrogen applied to the red areas would have been wasted, whilst in the high biomass areas there was a risk of grain nitrogen dilution. A variable rate application between 0 Kg/ha and 100Kg/ha targeted nitrogen where it was needed, efficiency at its best.”

Landowner, Norfolk

A farm manager from Wiltshire uses Hummingbird’s Variable Rate Nitrogen Application maps to create a more even crop, applying nitrogen in higher rates where it is needed, and lower where it is not.

This saves him money, reduces waste and minimises the ecological impact of his farm upon the environment.

“This year we’ve used the Variable Rate Nitrogen Application tool. This allows us to increase the amount of nitrogen applied to poorer areas of the crop, which has evened the crop growth across the whole field. We’ve also seen a saving as the better areas of the crop required less nitrogen, which meant we applied less overall.

Hummingbird’s platform is intuitive, easy to use and accessible on both my computer and phone when I’m field walking.”

Farm Manager, Wiltshire
WHAT OUR CUSTOMERS ARE SAYING...

Our customer used Hummingbird’s Variable Rate Application tools to reduce his Nitrogen inputs by 87 Kg/Ha.

By measuring the Green Area Index of the crop’s canopy, Hummingbird was able to deliver Variable Rate Nitrogen and PGR maps to him within 24 hours of each flight.

He used our Nitrogen calculation tool on the Hummingbird platform to tailor the application to his preferences, and then uploaded the map to his sprayer.

“Hummingbird provided a GAI assessment flight which showed high levels of variability in the canopy, but strong overall early growth.

Measured GAI recommended an overall requirement of 18 Kg/Ha nitrogen, as opposed to standard farm practice of 109 Kg/Ha nitrogen.

The GAI map also highlighted the requirement for a slightly higher dose of PGR on the thickest part of the crop, but far less on the delayed growth.

By applying Nitrogen and PGR based on precise canopy requirement, the field has seen a successful reduction in input costs of £49/ha.”

Farm Manager, Dorset