

COMING SOON: VICKERY BROS AERIAL DRONE SERVICES

VICKERY BROS.

THE FERTILISER PROFESSIONALS

"Granules of Knowledge"
September 2023

Vickery Bros has acquired not one, but two new agricultural application drones. We are currently busy working on our operator licences, preparing policies and procedures, updating our JSA's and risk assessments, as well as installing some very smart mapping software. We are also in the process of acquiring all the necessary ancillary equipment required for ensuring the operation of this new venture will work the way we want it to.

We have identified a number of scenarios where ours or other's equipment render the job impossible or uneconomic to complete. These scenarios have created a niche within our organisation where our drones will complement our existing operations - filling these operational gaps.

Whilst we have sat on the sidelines and observed the industry's use of drones with interest for the last 12 months, it is obvious that payloads and CASA regulations will only get bigger. Although the barriers to entry (i.e., cost) should reduce, regulatory and insurance requirements will eventually escalate.

How the process works

We will come out to your farm with a small drone designed solely for mapping. This takes multiple images which are processed back in the office to create an up-to-date overhead image of the field selected for spreading/spraying.

From this image we will create a field boundary and exclude the obstacles in the paddock (sheds, trees, powerlines, etc). We will then input the flight parameters into our drone navigation system (selected areas to be covered, height above crop, swath width), which will allow the program to automatically set the flight path for the drone.

Our drones can work a field side by side either spraying/spreading. They can each hold 50kg of granular product in the spreading bin and 40L of liquid in the spraying tank. We are only limited by the weather, however our trained and licensed pilots will assess the weather before and during the operation to ensure the desired results are achieved.

Application Rates

Application rates can be manipulated on the fly; however, the hectares calculated for the targeted area and the application rate you have discussed with your agronomist will generally be used to deliver the correct amount of product (fertiliser/chemical).

E.g., You have a 40ha area of thistles you want sprayed with a broadleaf mix designed by your Vickery Bros/ McDonald Rural Services agronomist at 20L/ha. We will bring out 800L of mixed and agitated chemical in our batching tank.

Typical water rates found on the chemical label for aerial applications usually range between 20-30L/ha, however we can manipulate this to suit your requirements from 10L/ha to 100L/ha.

The logistics of fertiliser delivery will depend on the job size and could range from elevated Jacky Bins, to Leg Bins or elevating from tipping trucks.

Fertiliser rates and products can also be manipulated to suit your situation. Typical application rates will range, with urea applications of 60-100kg/ha and slug bait going as low as 3-5kg/ha. Targeted cricket infestation areas and aerial application of small seeds such as Balansa etc can also be applied.

Accuracy

Our drones have an onboard GPS system which utilises multiple satellites to allow accuracy while flying. To enhance this, we have also purchased an RTK (Real Time Kinematics) base station to be set up in the field, providing the drones with 2cm accuracy while flying.

Price Structure

Every job presents different challenges. For this reason, there is no 'one size fits all' pricing structure we can apply. What we do know is the reduced costs involved in running the drone; the high prices and long wait times currently seen with aerial applications; those jobs that no one wants to do because they are too small, too steep, too uneconomical and only targeted areas in a paddock – which are all, from a farmer's perspective, critical to them enhancing productivity. From the information we collect, the spreading/spraying price will be competitively quoted to you on a per hectare or per hour basis.

Get in touch with your Vickery Bros/McDonald Rural Services Agronomist for more information.



LOOKING TO BOOST HAY YIELD?

Now that paddocks are starting to dry up again, preparing hay paddocks to optimise yields is now front of mind. However the window of application is quickly closing with the ideal application time being six to eight weeks prior to cutting. So how worthwhile is applying haybooster?

To answer this question we need to take into account the paddock's fertility, pasture composition and how regularly said paddock is cut.

Responses to Nitrogen

Soil temperatures have consistently been above 12 degrees Celsius for the last three weeks. We can now expect responses to nitrogen to be 10-20 kg DM/Ha for every Nitrogen unit applied. Standard nitrogen application rates are between 30-60 KgN/Ha (65 to 130 kg/Ha urea).

Working off a 15: 1 response rate, this means the potential to grow an extra 450 to 900 kgDM/Ha. Naturally, the biggest responses to nitrogen occur when we have good soil fertility, which means an Olsen P of at least 10. Phosphorous is the backbone of soil fertility and therefore effort should be put into making sure phosphorous levels are adequate on paddocks, especially those from which you are demanding extra performance.

Grass dominant paddocks will also give bigger responses due to being naturally hungrier for nitrogen through low clover numbers putting limited nitrogen into the system. As can be expected, you will see greater responses from annual ryegrass, especially new and improved varieties as opposed to older and outdated perennial grasses.

Replacement of Nutrients

Table: Nutrient Removal in Hay & Silage

Total nutrients removed by 1 ton of hay or silage				
Fodder Type:	N	P	K	S
Pasture Hay	25	2.5	17	2.5
Pasture Silage	30	3	15	3
Cereal Hay	20	2	12	1.5
Cereal Silage	14	2	25	2
Lucerne Hay	34.5	2.7	19.6	3.2
Legume Hay	30	3	22	2

The table above gives a handy guide to what removal rates can be expected. Expanding on this a 4t/ha pasture hay crop will remove - 100 kg/Ha Nitrogen, 10 kg/ha Phosphorous, 68 kg/Ha Potassium and 10 kg/Ha Sulphur. As you can see hay production is a particular strain on nitrogen and potassium reserves, therefore applying haybooster helps to cover some of the fertility costs of making hay. The price of these removals is super-charged when you have a designated hay paddock that gets cut every year.

Generally, if removals are not replaced, over time you will get a decreased paddock performance due in most part to nitrogen and potassium reserves being mined. Potassium is especially of concern as unlike nitrogen, it cannot be mineralized in the soil or "fixed" by clover. This means replacement is solely reliant on more potassium being put into the system through fertiliser. Potassium is important to replace in terms of plant health as it plays a big role in keeping plants strong. It is therefore more resilient against bug attacks, as well as controlling water loss through the leaves.

What Booster should I use?

Boosters should not be looked at as a replacement to proper Autumn fertiliser, but more as a way of ensuring there is nothing limiting this year's hay production. In order to properly account for nutrient replacement, hay paddocks should be treated accordingly the following Autumn and provided with additional phosphorous and potassium.

Some common blends are as follows:

Straight urea - "cheap" option to get some extra growth. Where removals have been accounted for in the Autumn.

Urea/MOP - paddocks with good fertility, to optimise grass growth and supply some potassium.

NPKS Booster Blends - OK to poor fertility, or to just generally cover all basis to improve nitrogen response through providing all major nutrients.

NPK Booster Blends - where extra phosphorous is required to replace hay removal which has not been accounted for in the Autumn.

Contact your Vickery's Agronomist if you would like someone to assess what would suit your situation best.

TIMERITE

OCTOBER 2023

Don't miss your chance to control Red Legged

Earth Mite in 2023

Edenhope: 2nd October - Mt Gambier: 7th October

Cavendish: 10th October - Coleraine: 11th October

Hamilton: 15th October - Heywood: 16th October

TimeRite dates are fast approaching!



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