

# Varidome S3 100HiFlo

## An innovative inter-row sprayer for weed control in arable crops

With growing production costs and tight margins, arable farmers are increasingly turning to alternative farming techniques to protect their yields and profits. Gaining the upper hand over resistant weeds such as black-grass is particularly high on the agenda, as they compete for valuable soil nutrients and can thus significantly reduce crop yields.

To help tackle the problem, Micron has developed Varidome – a range of innovative band sprayers that enables farmers to improve weed control whilst reducing their herbicide usage and impact on the environment.

Varidome incorporates a hooded design to minimize spray drift which also means that non-selective products can be used where available. Each shield is mounted on ground following carriages to ensure consistent shield height and further reduce the drift. From the launch of the first commercial unit a few of years ago as a 3 metre working width unit aimed at vegetable growers, the Varidome range has evolved into a complete, tried and tested product range. Today, the largest Varidome sprayer in the fleet is 12 metres wide and packed with a whole host of user friendly features such as a quick release carriage system. Thanks to its flexible and fully modular design, it is being successfully used in a broad range of crops including sugar beet, oilseed rape, maize, vegetables, herbs and horticultural applications.

### Varidome S3 100HiFlo model

represents the culmination of Micron's innovation and continuous research and development for arable farmers. Specifically aimed at cereals and root crops, the sprayer features a 6 metre hydraulically folding toolbar with ground following carriages fitted with the newly developed Varidome 100HiFlo spray shields. The innovative hoods incorporate unique patented double membrane skirts around the base. The membrane's inner section prevents spray material from coming into contact with the outer section which is also tapered each end to push the crop away from the area to be treated. These features combined virtually eliminate any risk of spray drift being transferred onto the crop and subsequent crop damage.

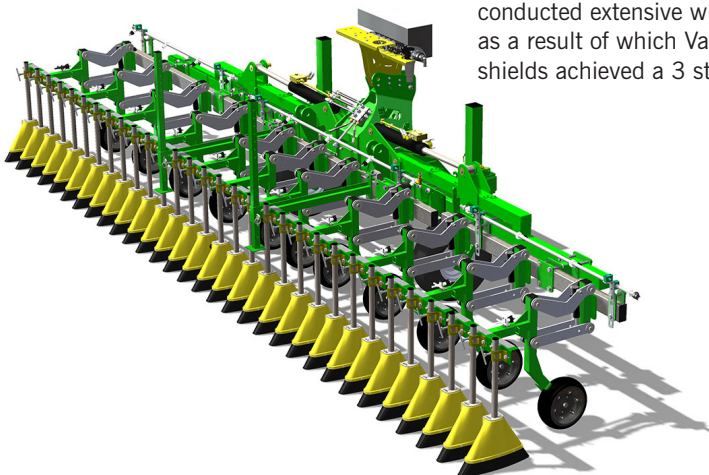
To prove their DRT (Drift Reduction Technology) credentials, Micron have conducted extensive wind tunnel testing as a result of which Varidome 100HiFlo shields achieved a 3 star LERAP

accreditation – the highest UK rating attainable. Furthermore, the shields have actually shown potential to reduce drift by over 95%.

As well as its unique shield design, Varidome S3 100HiFlo sprayer incorporates new triple shield carriages which allow it to achieve closer shield spacing, making it ideal for work in narrowly planted crops. Furthermore, the working width on each individual hood can now be easily adjusted to spray bands from 100mm to 450mm wide.

Varidome S3 100HiFlo can be fitted with an optional over-the-row spray line and Micron Dual Spray Tank. The dual spray system means users can simultaneously apply two products – e.g. a non-selective herbicide under the shield and a second product such as selective herbicide, fungicide, foliar fertiliser or insecticide directly over the crop.

- Patented double membrane shields to eliminate drift
- 3 star LERAPS accreditation
- Ground following carriages to ensure consistent shield height
- Easy adjustment of treatment width on each individual carriage
- Triple shield carriages allow to achieve closer spacing in between the rows of crop





## Edward Banks from Thomas Banks & Partners explains how the Varidome “chemical hoe” fits into their weed control programme...

“ Since 2007 when I took over the management of 1100ha farmed by Thomas Banks & Partners, I have been looking for new and better ways of bringing our blackgrass population under control in our break crops. In 2009 we upgraded the existing GPS systems to RTK accuracy on all machines and that made us begin to think how we could use this technology to help in our fight against blackgrass. This is when we came across Micron Varidome.

When we first looked at the machine, it looked very promising, but only had one spray line which was for a desiccant under the protective hoods. This posed a problem for me, as it would be great to desiccate between our rows of oil seed rape (OSR) and sugar beet, but I would then still have to spray the expensive prescriptive herbicides with my normal self-propelled sprayer to ensure no weeds grew on the row itself. However Micron very quickly developed a split tank and a second spray line to allow us to spray desiccant between the rows of crop and prescriptive on the row all at the same time. I therefore purchased a 6m Varidome S3.

The machine itself was very easy to use. It was controlled by the existing Trimble FMX screen in my tractor so no need for another expensive control box in my cab. This helped my operators as well as they are all used to using the FMX so there were no new controllers to get used to. We have therefore used it on every sugar beet crop since then, doing two or three applications on around 80ha each year.

The benefits are very clear to see straight away. If you are able to get on the field early and do the first application while the plant is small, you can spray desiccant rows of up to 35cm wide which means you can desiccate 70% of your field while leaving your growing crop intact. Subsequent applications may not be as wide as you have to adjust the desiccant row width relevant to crop size, but the benefit of the chemical hoe over a conventional mechanical hoe is that it doesn't disturb the soil in-between rows and therefore makes the perfect sterile seed bed. As a result we have found that we only have to spray the desiccant once or twice as there is normally very little re-growth after that in-between the rows. The prescriptive row is on an 80 degree flat fan nozzle and you simply adjust the height of it to gain the width of application you require. Traditionally this is between 25 and 35cm from the ground, which gives a much better efficacy of the spray compared to traditional boomed sprayers. If you are spraying the desiccant row at 35cm then this means you will only be spraying a prescriptive row of 15cm per nozzle. This means there is a potential 70% reduction in the cost and use of prescriptive herbicides.

As well as the sugar beet, we are now also using the Varidome in our OSR. We drill our OSR at 50cm spacings like the sugar beet and so

can use the Varidome technology to great effect. In OSR we have a slightly smaller reduction in chemical costs, as we still spray Kerb with a conventional sprayer even after the Varidome, due to the concern of a spring flush of black grass. However our trials last year showed a significant reduction in black grass population in the following crop, in the areas where the Varidome was used. It was estimated we had between 60 and 75% less black grass in those areas. We are therefore hoping in the future this could lead to variable rate pre-emergent wheat sprays and so a substantial reduction in herbicide costs in our wheat crops as well.

With the ease of use, the reduction in expensive prescriptive chemicals used and a reduction in weed seed return, you can see why I am a big supporter of Micron Varidome! On our farm we have seen a variable cost saving of up to £96/ha in our sugar beet and now we are doing a similar spray regime in our OSR, therefore the cost of the Varidome was paid off within 3 years.

Micron have now taken the machine and the hoods further by developing a smaller hood [Varidome 100HiFlo]. Our farm is part of a winter barley trial this year, where we have drilled hybrid winter barley at 25cm and 50cm row spacings. Then with the new smaller hood we have band sprayed a desiccant between the rows. On the 50cm spacing row, this is no different to our sugar beet or OSR regime, however the 25cm spacing is considerably harder to achieve. However the trial has been a great success with no damage to the growing crop and great grass weed control. This just shows a great potential future use of the machine, especially with the reduction of the available active ingredients.

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**Edward Banks, Thomas Banks & Partners**



Thomas Banks & Partners' Varidome S3 working in sugar beet

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