

ACCURATE SPREADING OF AVADEX IS CRUCIAL

With increasing restrictions on chemical usage for weed control and the increasing threat of blackgrass spreading across the nations wheat fields it is essential that growers look to all options when controlling the weed. Opico has come up with new equipment designed to apply Avadex, the Opico Micro-Pro.

Despite the fact Avadex has been available since 1959 it is still an important tool in the farmers armoury against blackgrass. However it needs to be spread very accurately and it is notoriously difficult to do so. If you want to apply it properly it is no use using equipment not designed for the job such as the Opico Variocast for example. Avadex needs to be spread evenly across the field in order to create a layer over the field that all the blackgrass shoots have to grow through.

James Woolway of Opico said: "The problem with Avadex is that it is a granule based product and clay based. Out of 15kgs of product there are 13kgs of clay. The particles are smaller than most fertilisers. They vary from dust to sugar sized granules and the different sizes will flow and spread at a different rate and also flow at different rates. Also they are very light and tend to blow in the wind, unlike slug pellets for example which are reasonably heavy and thus spread at a more even rate, especially in windy conditions. Because the granules are so light normal metering systems struggle, you need to get a cell wheel full of Avadex and rotate it and drop it into the airflow.

This is not quite as easy if you are using a metering mechanism designed for wheat and barley for example.

"Avadex particles are hydroscopic which means they attract and soak up water, and when they do that, it means that they meter differently because they flow differently and also they spread differently as their characteristics change completely. Consequently we need something specifically designed to do the job.

"When we looked into getting in the micro-granular applicator market we thought that there would be plenty of products out there that would do a very good job of applying Avadex. However we soon realised that there are fundamental flaws in existing machinery on the market, which is perhaps why growers are not getting the levels of control from Avadex as they should. We need to put the right rate on and spread the material evenly across the full width.

"The metering distribution system is the key to all this and we soon found out that you cannot spread Avadex using a mushroom type metering distribution system. It won't work properly for light seeds or for granules because they are lighter and we are

also trying to put on very low rates. That's because of the pipe lengths and the back pressure you get from the applicator. There is too much friction on the longer pipes and the air does not flow properly. On a three metre air drill with central distribution and 24 coulters the pipes will vary from about 2 metres to 2.5 metres which will not vary that much. However with a 12 metre applicator some of the pipes will be 2 metres long and some of the pipes will be 8 metres long and the difference in the back pressure then becomes a major problem. Because the Avadex is light and carried in the air it will take the path of least resistance and so you are battling against physics if you are using vastly different pipe lengths. This is why we decided to go down the route individual metering for each of the outlets. Outlet spacing and the maintenance of outlets is extremely important. The more outlets the better and we have got down to a maximum of 75cms between each outlet which means that we can get a double overlap spread pattern.

"On the metering side, the NSTS microgranular applicator test states that the rate over the whole width must be within +/- 5% of the target rate,

which for Avadex is 15kg/ha. The outlet the applicator should be able achieve +/-10% with a jug test. That is as far as the NSTS test goes, the spread pattern is not tested. The Opico test is done to a much higher standard. The Micro-Pro is +/-15% of the target rate and the jug test for the Micro-Pro is +/-3% of the target. We also test the spread pattern by using 12.5 metres of corrugated sheet. Every 7.5cm we have swept the Avadex off and weighed it. We do this for every machine that goes out of the building.

"The machine has been evolved from a basic seeder we have been selling for 15 years. It has 16 metering rollers for 16 outlets. We have also added several enhancements. We found that we were blowing Avadex particles between the metering sections so we have introduced a stainless steel outlet dividing baffle plate. We have also modified the pipework, increasing it from 25mm to 30mm to give less back pressure and we have modified the outlets so we can tweak them individually to ensure the correct spread pattern.

"The Micro-Pro has a robust metering drive using a tooth belt with toothed gears to give extremely accurate metering and the hydraulic fan has a speed sensor on it to linked to the control box in the cab. The electronic control box has radar or GPS ground speed drive. The control box can also alter the speed of the metering system to all for the weight of the product from a full or nearly empty hopper and also from a damp or dry product."

Whats available?

1 - Mounted Boomed Micro-Pro 12m boomed applicator with 400L hopper, radar, electronic metering and a manual folding suspended boom with 16 outlets • Optional - Trailed chariot chassis with single or tandem axle to be towed behind UTV or a large ATV

2 - Micro-Pro with fitting kit for 12.3m HE-VA King Roller Loading platform with steps and applicator with 400L hopper, radar, electronic metering and 16 outlets

3 - Micro-Pro for fitting to customers own machine (Opico will set up and calibrate the machine on-farm)

The spread pattern is tested using a simple corrugated sheet.

