Improving spray coverage with magnets

Stephen Robb takes a look technology company MagGrow which aims to improve the efficiency of spraying.

FOCUS > SPRAYS - CROPS & GRASSLAND

Stephen Robb on 03 Jun 2020 IRISH FARMERS JOURNAL

MagGrow is designed to be retrofitted onto a new or existing sprayer.

Despite advances in sprayer and nozzle technology, spray drift can still be a challenge. MagGrow, a tech firm headquartered in Dublin, caught the attention of many growers in 2016 when it claimed its system could reduce spray drift by more than 70% compared to conventional spraying.

MagGrow is a patented, proprietary technology which aims to improve the efficiency of pesticide applications.

The technology results in better pesticide coverage on the target plant canopy while using a lower application rate, the company claims.

Gary Wickham and his co-founder David Moore set up MagGrow in 2013, in NovaUCD, the Irish incubation centre in University College Dublin. It was supported by Enterprise Ireland under its High Potential Startups programme and now has offices around the world.

Its technology is aimed at commercial arable farmers and horticultural producers as well as smaller enterprises.

How does it work?

MagGrow's technology is a two-component system. Pesticides pass through magnetic fields under appropriate flow conditions, changing the physical properties of the fluid so that the resulting spray-fluid has a much better droplet profile. This profile results in more even spread, reduced spray drift and reduces run-off. The system only contains two main parts – the manifolds (with the magnets) and the spray-line magnetic rods (inserted inside the boom spray-line). It is designed to be retrofitted to a new or existing sprayer, regardless of make or model.

The cost of a MagGrow system varies according the size of boom but for a typical 32-metre system, it is in the region of €35,000.

It can be fitted to any sprayer sprayer boom, regardless of make our model.

Results

The company has carried out extensive trial work in Ireland and around the world on high-density crops. In one trial carried out on tomatoes in the US, using the MagGrow system at an application rate of 100% resulted in twice the coverage of a conventional system at a rate of 100%. The MagGrow system at a rate of 85% increased coverage by nearly half compared to the conventional system at 100%.

MagGrow claims its system delivers over 20% increased coverage on target plants and up to 70% drift reduction. It also claims the technology can reduce inputs by up to 25% and water volumes by 50%, extend spray windows and reduce labour, while also meeting environmental regulations and objectives.

MagGrow is committed to progressive research and development and is working with one of the world's leading authorities on magnets and magnetism. This has been achieved through the work of its research and crop science teams and collaborations with external bodies.

For example, MagGrow has partnered with Trinity College, Dublin around research through its Science Foundation Ireland-supported AMBER (Advanced Materials and BioEngineering Research) facility. It also has IRES (industrial engineering and research) and crop science facilities in the UK.

The company's product has been internationally recognised for its innovation, recently chosen as one of Thrive's Top 50 Agtech and Foodtech companies for 2020 – listing them among the exceptional companies who are pushing the boundaries of innovation and technology.

Last year, MagGrow was chosen as a Trimble Select partner for agriculture. The global partnership has allowed MagGrow to accelerate their global expansion through Trimble's international network.