

# Precision decisions

“Optimal distribution can result in fertiliser savings of up to 15%.”



## Machinery Fertiliser spreaders

Spreader technology has come on leaps and bounds in recent years, with many new exciting precision machines making their way onto the market. *CPM* takes a look at some of the newcomers to the scene.

By Charlotte Cunningham

**The technology behind fertiliser spreaders has advanced rapidly over recent years, with growers now able to get their hands on more precise, cost-effective kit than ever before.**

Now spreading is all about precision and doing everything you can to get the best yield from your crop, so having a machine that's capable of applying accurately, and minimising overlap is key.

*CPM* has taken an in-depth look at the latest spreaders to hit the market and what benefits they could bring to growers.

### Kubota

New from Kubota is the Geospread range, which was showcased at last year's Agritechnica as well as making an appearance at LAMMA earlier last month.

The range is available in a number of different models and boasts individual

control — with section widths of just one 1m — which optimises precision due to the ability to shut off section by section in order to minimise overlap, resulting in fertiliser savings.

As well as this, accuracy is boosted by the manufacturer's unique reference sensor technology which eliminates and corrects any external factors which could impact on the spread pattern — really coming into its own when trying to ensure precision on hillsides, adds the firm.

The range comes with eight vanes per disc as standard and according to Kubota, this means fertiliser is released on a high frequency for constant flow and even spread pattern.

Spreaders also benefit from an integrated section control system to provide optimal use of nutrients to the crops. The weighing system continuously checks and controls the desired application rate, regardless of forward speed or fertiliser flow characteristics.

A new variable rate feature — Multirate — on board the spreaders also helps the range go one step further in terms of its accuracy. This means operators can now move the spreading pattern depending on the requested application rate per section. Depending on the field variation and variable application map, up to eight rate sections can be used, says Kubota. "As result, this means more accurate application of nutrients for better efficiency, yield and to reduce costs."

### Sulky

French firm Sulky has updated its XT range of trailed fertiliser spreaders with the addition of ISOBUS connectivity in the Econov models.

According to the firm, this new feature allows farmers with high capacity needs to benefit from the same precision placement technology as used on Sulky's mounted spreader ranges.

As well as enhancing existing models, Sulky has also added a new model with the 13,000-litre capacity XT 160 — meaning the ▶



*Precision is optimised on Kubota's latest offering by the manufacturer's unique reference sensor technology.*

# Fertiliser spreaders



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► XT Econov range is now available in three capacities: 7200 (XT 100), 9500 (XT 130), and 13000 (XT 160).

The new range offers 12 spreading sections and working widths of up to 50m for granular products.

A neat feature, which is claimed to be exclusive to Sulky, is the curve-shaped spread distribution which is said to promote control over rate and targeted application, says the firm.

As well as this, application can also be modulated independently on both the left and right sides. "Optimal distribution using Sulky's Econov technology can result in fertiliser savings of up to 15%," says Sulky UK's managing director, Robert Thurstkettle.

For those looking for some added extras, growers can also opt for the ISOBUS Quart 800 terminal, designed to optimise fertiliser spreading and application management, he adds.

## App happy

Joining the latest installments of app-based technology is the mySpreader app from Amazone, which is claimed to be the first all-in-one package containing the firms FertiliserService, EasyCheck and EasyMix apps for straight-forward, and easy spreader adjustment.

With each previous app having success in its own right, the powers at Amazone have married them together to create a one-stop-shop for growers in order to simplify usage.

In practical terms, this means that fertilisers that match the spreader settings can now be found and selected with ease and the same app is used when doing a test with the EasyCheck kit.

According to Amazone, this can save time and help to prevent input errors. "In addition, each customer can develop their own personal fertiliser database, in which they can recall fertiliser properties, spreading results and spreader settings at any time."

As well as the functionality available due to the combination of apps, some neat new features include a tool that calculates setting recommendations for blended fertilisers, known

## Kuhn

While Kuhn's Axis has been around for quite some time, the firm has recently made a few updates to bring the trusted workhorse in line with current requirements.

The latest generation benefits from an updated spreading module which, according to Kuhn, delivers an infinitely adjustable spreading pattern and boasts an increased hopper capacity as well as a redesigned chassis for up-rated payload capabilities.

Sitting pretty at the top of the range is the Axis 50.2 which ranges from 18m to 50m spreading width, and a hopper capacity of 3200 to 4200 litres.

A nifty addition to the new series is that all Axis machines are now equipped with wear-resistant VXR+ coated spreading vanes as standard and use Kuhn's CDA (Coaxial Distribution Adjustment) system for accurate metering at high speeds.

As well as this, the range features the firm's EMC (Electronic Mass Control) technology to meter fertiliser flow by measuring each spreading disc's drive torque. In essence, this means that fertiliser flow from each disc is constantly measured and automatically adjusted to maintain a precise application rate across the machine's entire spreading width — a real winner for those looking to be as precise as possible throughout applications.



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as EasyMix, as well as a Bluetooth adapter for ISOBUS machinery.

Via this interface, all the settings for the spreader can be transferred from the mySpreader App to the Amazone spreader. "This saves time and avoids setting errors, whilst, at the same time, being much more convenient. The Bluetooth connection is used both when setting the values from the digital setting chart and when sending the corrected values through EasyCheck."

The EMC system is available in two versions: the PTO-powered M EMC mechanical system, and the hydraulically driven H EMC version, adds Kuhn.

A new Vari Spread system has also made its way onto the latest launch to further promote precision.

## But how does it work?

Electrical actuators continuously alter and adjust the spreading unit's drop points, outlet positions and disc rotation speed to allow adjustment of spreading patterns across the machine's entire working width. The system can be controlled either manually or via GPS to prevent over-spreading at field margins, says the firm.

With a drive to reduce over or under-application, Kuhn have also added the Opti Point system which is designed to target just that.

"Opti Point automatically controls aperture opening and closing at the headlands to minimise over or under-application whatever the shape, size, density or air resistance of the fertiliser," says the firm. "The system works through pre-programming all the relevant information into the Kuhn CCI control box, Kuhn's own Quantron terminal, or third-party control boxes, to determine the optimum aperture opening and closing point in conjunction with GPS guidance."

## Bogballe/KRM

New from Danish firm Bogballe, is its series of L-line spreaders.

Available in working widths ranging from 10-24 metres, the product has marketed itself on being able to spread fertiliser, slug pellets, cover and EFA crops quickly and



*The latest generation of Kuhn's Axis benefits from an updated spreading module.*

precisely thanks to simple setting of the bottom outlet position to allow for a quick switch between materials.

The spreader itself boasts three different settings; micro, minimum and standard.

According to the firm, the micro outlet can handle volumes as low as 3kg/ha, but for bigger operations, the 'standard' setting has the capability to spread up to 370kg of fertiliser per minute.

The minimum outlet is suited for seeding EFA crops after harvest, while the micro outlet position is recommended for spreading of small-grained cover crops and micro-granules such as slug pellets.

Like many other manufacturers, the L-line series also offers fully automatic section control as well as a GPS operating system. "The flexible system is not only a great help for automatic start and stop in headland and field wedges — the system can also be moved and used on tractors that aren't already equipped with a GPS system," says the firm.

When it comes to spread pattern, the L-line series optimises a 'double double overlap' pattern which is claimed to offer the largest amount of overlap possible, and therefore the highest degree of tolerance when spreading, according to the firm.

But how does it work? "As the machine spreads the next tramline another double overlap is applied. It can now be seen that the area between the tramlines which has now had its whole application has received four applications two from each disc," says the firm.

"In this way the spread pattern is built up little and often. When spreading in the real world there are many factors that can affect the evenness of spread, such as wind, uneven ground, material variations and PTO speed fluctuations.

"By using the Double Double overlap system — where effectively four applications are being applied — any external factors will have a much smaller effect than they will with other spread systems offering less overlap."

## Bredal

After first showcasing the concept back in 2017, fellow Danish firm, Bredal, has introduced the K-XE series of trailed spreaders.

The latest launch is the firm's biggest yet, with working widths of up to 48m for fertiliser thanks to a new 6m wide, foldable XE spread section.

Available in three versions — K105XE, K135XE and K165XE — the towed spreaders offer section control and are

fully ISOBUS controlled.

The range is available with two different hydraulic systems, either via the tractor's hydraulic system or via a hydraulic power unit (HPU). "The HPU comprises a PTO-powered hydraulic pump station attached to the spreader and drives the two spread discs," says Bredal.

"The floor belt and two side belts are powered by the tractor's hydraulic system and the HPU ensures a constant, highly effective power supply."

The two hydraulically driven spread discs are mounted 6m apart and supplied by two 40-cm-wide hydraulically foldable side belts.

As an extra, it's also possible to equip the new spread unit with two different types of spread discs for lime and three different types of spread discs for mineral fertiliser, adds the firm.



Danish firm, Bogballe, has recently introduced its new L-line spreader series.

## Amazone

Hot in the headlines from Amazone is the announcement of the updated ZA-V 2600 ecoSUPERIOR.

Available in up to 36m spreading width and offering four-bag capacity, ▶

# We push the boundaries of spreading to make your fertiliser go further



**Accuracy and precision in spreading doesn't start in the field - it starts here in the Amazone technical laboratory.**

Consider, for example, the peace of mind generated by ArgusTwin, where its radar sensors constantly monitor the spread pattern as it leaves the disc and, if the fertiliser properties change and the pattern loses its accuracy, then the delivery system adjusts automatically to get the distribution precisely back on track.

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# AMAZONE

# Fertiliser spreaders



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► the ZA-V 2600 comes with the narrow S extension for convenient road transport — particularly around narrow lanes — and is fitted with a manually-actuated roll-over hopper cover to keep out the elements and ensure trouble-free spreading, wet or dry.

The large sight glasses allow for handy hopper contents monitoring and sieves prevent any ingress of foreign objects, adds the firm.

Shutter control is via two double-acting spool valves giving in-cab half-side shut-off when working in short work and a third valve is necessary for the Limiter V actuation. The Limiter V — which boasts special lamella construction that can be lowered in stages into the spread fan — ensures maximum yield up against the field edge, according to Amazone.

The ZA-V range starts at 1400 litres and runs up to the 4500kg payload with the

4200 litre ZA-V Ultra 4200. Where weigh-cell control of the application rate is required then the ZA-V Profis Control is the entry-level weighing machine or, for automatic headland shut-off via GPS, then the ISOBUS 'Tronic' Pack can be specified.

It's currently under offer from the manufacturer and in its offer specification, the ZA-V 2600 ecoSUPERIOR is fitted with the easy-adjusting V-Set 1 discs for up to 21 m spreading and a Limiter V border spread deflector on the right hand side for spreading anti-clockwise around the headland.

The ZA-TS spreader range has also been given a bit of an update with the new addition of the HeadlandControl system.

As a result of automatic GPS-Switch control, the fertiliser spreader now automatically switches on and off very precisely at the headland or in wedge-shaped fields, explains the firm.

In combination with GPS-Switch, the so-called SwitchPoint offers the possibility to ideally adjust the switch-on and switch-off points depending on the fertiliser and the working width.

So how does it work? The SwitchOn-Point is the point where the fertiliser spreader comes on. Especially at large working widths, "the switch-on" point is already far beyond the headland and out into the crop.

In contrast, the SwitchOff-Point is the point where the spreader switches off and describes the point at which the spread fan — which is thrown-back behind the machine — meets the previously spread headland area with corresponding overlap.

As soon as the switch-off point is reached, the spreader switches off automatically.

The values for the switch-on point and the switch-off point are configured in advance on the terminal depending on the fertiliser and can be optimised independently of each other.

Under certain circumstances, however, the switch-off point may be behind the headland tramline so that it would actually have to be driven beyond the tramline in order for the spreader to switch off in an ideal manner.

Since this is often not done in practice, small zones of over-fertilisation and under-fertilisation can arise when turning into the headland. If the driver turns before the actual switch-off point is reached, the spread fan behind the machine is swivelled sideways.

In this way, over-fertilised areas appear on one side and under-fertilised areas on the other side.

Amazone now hopes to alleviate this issue with the HeadlandControl function which is only used where tramline meet headland. While spreading on the headland, the outside disc performs border spreading function, while the HeadlandControl function is carried out in parallel using the field-side spreading disc.

Here, the delivery point is rotated outwards so that the spread fan of the field-side spreading disc can draw further into the crop. The spread headland is therefore increased to the field-side whereby the SwitchOff-Point can be placed in front of the corresponding headland tramline.

By this measure, the spreader switches off before reaching the headland tramline and the associated steering of the tractor. ■

## Small but mighty

For those after something a bit smaller, Irish manufacturer, Quad-X, have developed a new fertiliser spreader that's been designed specifically to be towed by UTVs — in fact, any vehicle with a 50mm tow ball.

Though largely targeted at those with grassland pastures, this lightweight spreader could be a handy piece of kit in the arable armoury, particularly when weather conditions make travelling with heavier kit impossible.

So what exactly is it, and how does it work?

The UTV Pro Spreader comprises a steel frame and has been put through its paces in a seven stage finishing process to minimise corrosion. As well as this, the spreader has extra-wide axles — coupled with low-placed hopper — to increase stability, particularly on hilly ground, says the firm.

In terms of capacity, the Pro Spreader is fitted with a 680 litre hopper with removable sides, while flotation tyres enable travel, even on softer ground.

The dished spinner and specially designed spinner vanes have been developed to give a



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spread up to 15.2m with an even application for maximum results and minimum wastage, claims Quad-X.

As well as this, the spreading system is ground-driven, meaning the revolutions of the spreading disc are controlled by forward speed.

A particularly handy feature is the capability to control the shutter plate from the UTV itself. According to the firm, the Pro Spreader is the only commercially available UTV sower on the market that boasts this feature.



*Amazone has announced an updated offer on the ZA-V 2600 ecoSUPERIOR spreader.*