

“ Now more than ever, farmers have to demonstrate the measures being taken to reduce slurry pollution and safeguard the environment. ”



Nutrient rich brown-gold

Machinery Muck and slurry

Out with the new and in the with the old. With pressure growing for farmers to cut back on inorganic inputs, natural fertiliser — specifically manure and slurry — use on arable systems has come back around. *CPM* looks at the latest application equipment on the market.

By Melanie Jenkins

Mixed farms are seeing a comeback as arable growers look to bring livestock and grass back into the rotation to increase soil organic matter, humus, improve structure and incorporate carbon capture. And even strictly arable farms are also keen to incorporate the by-product of livestock to achieve similar results, all while feeding a new season of crops.

Organic manures are being flagged as the more carbon and planet-friendly alternative to the inorganic fertilisers which have predominantly driven crop growth for

a number of decades.

Though some farmers may be cautious because of the increasing number of nitrate vulnerable zones (NVZs) they have to work in, there are plenty of tools on the market for the precision application of muck and slurry. And at the same time, farmers can provide their crops and soils with the benefits of this nutrient-rich fertiliser.

Below, *CPM* picks out some of the latest innovation in muck and slurry technology.

Tankers

Slurrykat's Premium Plus Super tanker series is available in capacities ranging from 7250 litres to 25,000 litres, and includes new features across the board as standard — such as lighter booms as well as a new braking system, drawbar and pump.

A five-point linkage system for all dribble bars, as well as a trailing shoe, has also been fitted to all models, while new high speed vacuum pumps come complete with auto vein lubrication and a crash protection system.

The tanker has an autofill system capable of 10,000 litres/min and a larger overflow valve system for more air flow and faster filling.

At the rear is a new dribble bar discharge system which should mean faster application, claims the firm, as well as

three and four-point linkage for all spreading equipment.

From Abbey Machinery comes its new Smart tanker, with a near infra-red (NIR) sensor to measure nitrogen, potassium, phosphorus and dry matter in slurry — which enables accurate application of nutrients where needed.

It also features a flow meter, sense gate valve, automatically operated electric actuator and is ISOBUS compatible.

The ISOBUS solution should free any potential blockages by reversing the distributor head automatically if it senses any pressure, according to Abbey



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When beginning spreading, the wide-angle PTO is engaged at 1000rpm to drive the rear discs and rotor, and a galvanised reinforced slurry door is set to the desired height depending on the material to be spread.

The vanes on the spinning discs are also adjustable to allow varying spreading patterns.

Another new addition to the range of trailers available on the market comes from G T Bunning and Sons. The Lowlander Mk 4 Compact series has been expanded to include the new 120C and the 150C, with capacities of 14t and 16.6t, respectively.

Both have twin 695mm diameter dynamically-balanced vertical augers, with flights laser cut from boron steel. The reversible hardened cutters are able to



The three axle VT7138 includes a Scania V8 Stage V engine.

shred and spread material widely, while three fixed position boron steel bottom blades per auger give a wider spread ▶

Machinery, and if the blockage can't be freed, the operator is sent a warning on the screen.

The Smart tanker is fitted with a water-cooled vacuum pump, with ballast ports, a complete water jacket around the normal rotor assembly and a filtering system to the traps on the tanker. This helps the tank to run for prolonged periods of time, and its cooling system keeps the pump at an optimum working temperature automatically, claims the firm.

Trailers

Though there are a wide range of trailers to choose from on the market, HiSpec claims it stands out from the rest thanks to the unique shredding rotor and spinning disc system on its Xcel spreader — enabling precise manure application. It has a spreading width of 24m — dependant on material — with a 12t capacity which can be spread in approximately three minutes.

The chain and disc spreading system uses two high strength chains to convey the manure towards the rear beaters, while the hydraulically driven floor — complete with box iron slats — provides a constant flow of manure to the shredding rotor.

The shredding rotor consists of 22 heavy duty marine chains along a Hardox flail head, which rotate in excess of 220rpm.

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VÄDERSTAD

Muck and slurry



Tramspread has two new slurry hose pinchers to help reduce the risk of spillages.

► width when materials are fine or wet, says the firm.

The floor slats are the full width of the trailer and are designed to clear the entire area, helping to eliminate the possibility of bridging — an issue sometimes encountered with multi-chain and slat floor systems.

The 120C has a 500-series floor drive gearbox and is hydraulically driven which should ensure an even feed of material to the spreading mechanism. Its reverse

feature means that any foreign objects that are too large to pass through the beaters can be removed, says the firm.

Spreaders

New updates to Richard Western's Delilah vertical beater manure spreader range come in the form of two compact spreaders: The D4100 Compact 10 and the D4120 Compact 12.

With agronomic focus on soil's organic matter content — and its effect on structure and health — having become more intensive over recent years, the role muck spreader design plays in ensuring manure is applied thoroughly and accurately to maximise its value has also become more important.

Therefore, well-engineered design in key muck spreader feature areas such as the rotors, bed and body can help to ensure loads are spread quickly and evenly, for a fast turnaround and accurate application, believes Angus Western, the firm's managing director.

"Large diameter boron steel rotors producing a high tip speed were a key principle when we designed our Delilah spreader range," he explains.

"We use units of 890mm diameter on the D4100, D4120 models and below, and

1100mm diameter on the D4130 and D4150, with optional fitment on the D4100.

Their arrangement, with a significant overlap, ensures full shredding of material across an extensive range of manures, composts and sludges, a critical aspect of getting a thorough and even distribution and breakdown of material and release of the nutrients it contains across the full field profile.

"The 1100mm rotors have a disc base with three blades and replaceable wearing parts, while the option of a hydraulic-folding canopy door or removable hood allows the spreader's use as a vertical beater machine or, with the doors closed or hood attached, as a spinning disc spreader.

"An even feed to the rotors is also important. To ensure this, the hydraulically-driven floor on Delilah spreaders is powered by two 16mm floor chains and a 65mm rear floor shaft on models up to the 12.2m³ capacity D4120, with 20mm chains and an 80mm shaft on the largest D4130 and D4150 machines (12.2/14.4m³). Fitment of a slat between every five chain links of the floor bed provides consistent load to the rotors, ensuring an even spread pattern without pulsing."

The latest editions are claimed to be more easily manoeuvrable and come with standard features including variable floor speed control — with a pressure protected reverse function — two heavy duty floor chains with individual tension in 16mm or 20mm, a 65mm or 80mm floor drive shaft with seven tooth self-cleaning sprocket.

Options include oversized rotors, a hydraulic slurry door, a sprung drawbar, electronic bed speed control and fully automated weighing and recording equipment with GPS.

The D4100 has a 12.1m³ capacity while the D4120 has a 14.5m³ heaped capacity.

New from Dutch firm, Vervaet, is the self-propelled Quad spreader.

Boasting a 550hp six-cylinder Volvo Penta engine, the Quad has 2650Nm of torque at 1200rpm for optimal fuel economy, says the firm.

It has a 21m³ tank capacity and comes with a choice of a Vogelsang and Börger 9000 litre/min pumps or a SuperLoad system with 25.4cm piping and a 12,000 litre/min or 13,500 litre/min Börger pump.

The latest launch from Vredo is its three axle VT7138, which boasts a Scania V8 Stage V engine, with over 3250Nm of torque at 1350rpm to provide 710hp.

Its compact design, alongside steered

Additional aids

When it comes to additional aids, from Tramspread is two new slurry hose pinchers to help reduce the risk of spillages.

'Handy' is a lightweight pincher designed to be carried easily and can clamp hoses 15.24cm in diameter, while the larger 'Heavy' model is for use with pressurised hoses up to 20.32cm in diameter.

"These pinchers are inexpensive and will prevent slurry being lost if a quick repair is needed when pumping or spreading," says Tramspread director, Edwin Baker. "Now more than ever, farmers have to demonstrate the measures being taken to reduce slurry pollution and safeguard the environment," he adds.

Both are priced at £250, and though they are designed for use with umbilical hoses, they can be used for other agricultural work if needed. "Other applications could be for irrigation pipework or other water pipes on farms. However, we see the main benefit of these pinchers as saving land and water sources from the potential damage that slurry spillages can cause," adds Edwin.

For those incorporating technological advancements to their slurry managements, Tramspread has also launched a new pump

remote control — the Teletram 2020 GSM — for engine driven pumps. The remote control doesn't need radio connectivity but can instead be connected via a smartphone or tablet's 2G-5G connection, to one or multiple engine drive pumps.

It can be used with either Apple or Android devices, has sensors for inlet and outlet pressure, and can monitor the slurry store level. "Operators will be able to start, stop, increase and decrease the throttle, and divert from mix to field, while also being able to monitor the engine for low oil pressure, high coolant temperature, and low coolant level. This will help to avoid costly downtime and it also gives the operator more data and control," he concludes.

Also bringing in the smartphone technology to assist muck management is G T Bunning and Sons' scale app. This is an optional extra for new orders of spreaders with ISOBUS eight cell systems. The app connects to a Bluetooth system fitted to the spreader, which allows the operator to know exactly how much is being put into the machine in real-time via a display on a smartphone or tablet.

axles, should make it easy to manoeuvre when turning on headlands, while crab steer, driven axles and an optional tyre pressure inflation system should allow for early spring spreading with minimal soil compaction, says Vredo.

As standard it comes with a 21m³ or 32m³ polyester tank which can be upgraded to a 32m³ FlexTank. It also has a 12,000 litre/min slurry pump in combination with a 25.4cm suction arm.

The VT7138 can be equipped with a GPS system in combination with section control and NIR application, and also has an eco-mode to adjust the engine speed to the required power — helping with fuel efficiency.

Dribble bars

Tramspread has launched a new Suffolk range of dribble bars in 24m, 12m, and 6m widths.

The 24m dribble bar folds around the tractor cab without obstructing the cab doors or view, while the aluminium twin booms have left and right geometric control as well as twin Vogelsang Exacut macerators. It has twin hydraulic sluice valves for left and right slurry control and dribble outlets are positioned 300m apart.

The centre frame with parallelogram action allows boom spread height adjustment independent of tractor three-point linkage/swinging arm.

The 12m version has a single Vogelsang Exacut macerator and 300mm dribble outlets, but has a front mounted swinging arm to allow for U-turns, making headland turns easier, says the firm.

The 6m is available with or without the macerator and can be easily unbolted from the umbilical frame and fixed to a slurry tanker.

Trailing shoes

To complement its tanker range, HiSpec has launched a range of trailing shoes — the Trail-S.

Available in 6m, 7.5m, 9m and 10m working widths, it has a chassis mounted mast which ensures the shoe is properly supported by the tanker. Using individual spring legs and hardened coulters, it parts the grass and opens the surface of the soil for one pass application.

Downward applied pressure means the coulters are constantly in contact with the ground and the trailing rubber boot deposits the slurry directly into the open channel.

The Trail-S can also be used as a dribble bar without any contact with the

ground and the 9m and 10.5m versions feature a hydraulic self-levelling function whereby each arm of the trailing shoe will lift as it passes over a side incline — ensuring the pressure on the springs is distributed evenly.

Further to this, it features a Vogelsang ExaCut which is a precision distributor that uses a central rotor to chop and distribute material and the rotating action helps to shear any fibrous material.

Slurry exits the tanker from the side of the manhole where it passes directly into the ExaCut. The Trail-S is fitted with an integrated stonetrap and stones and heavy debris are collected in both the ExaCut sock and also in the rear integrated stonetrap as they are pushed towards the splash plate for easy removal. ■



The Teletram 2020 GSM remote control can be connected via a smartphone.

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