

Manure Matters



Meeting the Manure Demand

In this edition, we profile four users of Bunning spreaders from around the UK.

- Yorkshire based Adamson Contractors now run five Lowlander 175 HBD spreaders to keep up with a growing workload and an increase in spring applications.
- Charlie Steer, farm manager at Grosvenor Farms near Chester, tells us how his Lowlander 230 HBD is helping to accurately apply valuable nutrition.
- Cumbrian farmer William Miller explains why he bought a Lowlander 105 TVA instead of regularly hiring spreaders to have greater control of when he applies manure.
- A Farmstar 80 HBD, owned by mixed organic farmer Michael Rutherford, is allowing the farm to make little and often applications of a variety of manures.



SPREADER FLEET INCREASES PRECISE MANURE APPLICATION

Application accuracy to 24m for a variety of manures has meant investment in five Bunning Lowlander 175 HBD spreaders for Adamson Contractors to ensure accuracy with every tonne, along with access to the latest technology, such as variable rate spreading and weigh cells.

Based in North Yorkshire, Adamson Contractors is run by David Adamson, alongside sons Steven and Martin. The contracting outfit has always had a keen eye on applying products accurately and this attention to detail, along with investment in the correct machinery, has seen the spreading side of the business grow considerably to run five Bunning Lowlander 175HBD machines.

FIRST SPREADER INVESTMENT

An initial investment in two Bunning Lowlanders in 2018 allowed sewage sludge to be spread from July to October, and meant the spreaders could drop onto jobs with varying products at other times of the year.

Part of the reason for choosing Bunning was the consistent application to 24m, as the dynamically balanced horizontal beaters feature Boron shredding cutters to break down the bulky material to an even consistency.

The 1.1m diameter spinning discs feature five adjustable blade positions to alter the spreading width and apply the product evenly. The 175HBD machines can carry 17.5t and feature a heavy-duty driveline and fully welded construction.

“Buying two new machines was a significant step up in output, but also accuracy of spread width. During the demo the Lowlander spreaders created a carpet over the field as

they applied. The combination of the horizontal beaters and discs offer an accuracy that just wasn't possible with the other equipment,” says David Adamson.

Mr Adamson says he was told that 600t/day was achievable by loading the spreaders with a telehandler, whereas with a loading shovel, that figure could be 1,000t/day.

FARM MANURE INCREASING

The two machines handled the sewage spreading works as well as the local farmyard manure applications during other parts of the year. With farmers seeing the benefit of increased accuracy, a third 175HBD was added in 2020 to keep up with demand. The three machines could run together if required, but also handle separate jobs from existing customers.

In 2021, the business hired in two vertical beater spreaders to get through the farmyard manure workload, which was increasing year on year. However, customer feedback was less than glowing about the hired machines.

“There wasn't a lot of enthusiasm from our customers about having their manure spread by the hired vertical auger machines. It was nothing to do with the brand, but the Bunning HBDs had done such a good job of breaking



Spreaders: 5X BUNNING LOWLANDER 175 HD HBD

down the bulky manure and shown farmers the huge benefits of applying a product in this way.”

FIVE SPREADERS

This upturn in demand for the Bunning spreaders on products such as compost, farmyard manure and chicken litter, meant the three existing machines were too stretched at peak times, as the sludge contract was demanding three spreaders to be most effective.

The contractors took delivery of their fourth and fifth Bunning 175HBD machines in the summer of 2022, to help handle the spreading workload that now stands at around 115,000t/year.

“With just three machines, we’d either be reducing output of the



sludge team by only running two machines, or not being in two places at once if they all ran together.”

When he purchased them, David was unsure if his workload would justify keeping all five spreaders, but the advantages of spreading the risk and workload, while allowing the older machines to carry out the smaller jobs, has been really helpful. A Schaffer pivot steer loader was bought to keep the pair of spreaders loaded.

HIGH SPECIFICATION

A mix of German tractors are used to power the spreaders, with two Claas Axion models – a 920 and 950 – along with a Fendt 936 on the sludge spreading team, and two Fendt 828 models handling the bulk of the farmyard manure jobs. All the Lowlander spreaders are ISOBUS, which makes operation a lot easier through the in-cab terminals.

The spreaders have a near-identical high specification, which helps if operators switch machines.

Accurate tonnage records are logged via the on-board weigh cells and all use on-the-go rate control, which is crucial to comply with the audits carried out on a weekly basis by the waste management company.

The rate control uses the four weigh cells located on the body and recalculates the rate based on forward speed and changes in product density. The rate is then adjusted by altering the speed of the full-width moving floor.

However, it is the option to offer variable rate spreading via the Bunning HBD machines that the Adamsons believe will be a big part of their work in the future.

“As manure becomes more valuable, having the ability to target specific areas of the field with the exact nutrients required will allow growers to assess what effect the manure is having on their soil. It makes maximum use of their investment in soil mapping and our investment in the technology to apply it accurately.”

All machines have the adjustable rear canopy, that can alter the spread pattern for different products, along with wide angle PTOs and road lighting packages.

Another option on the most recent spreaders was the switch to larger diameter tyres – BKT 750/75 R46 – in a bid to raise the angle of the spreading discs. “This means we can now spread evenly into standing crops later in the spring as the height of discs has been raised by the new tyres,” says David.

Keeping five spreaders busy throughout the year is a tall order but having multiple reliable machines offers Adamson Contractors the option to keep customers happy and guarantee the spread quality from any of the five machines.

SPRING SPREADING

The benefits to the environment, through quicker absorption of manure and nutrients into the soil and an even coverage no matter the product, means the HBD spreaders are now integral to the business.

“The market has changed and there is now a smaller pool of customers that I can take a vertical auger machine to.

This has been driven by the price of fertiliser, and the value farmers are now attaching to manure means it must be spread in a way that is accurate and accounts for every tonne.”

The dry spring in February 2021 saw the spreading workload increase considerably and all three machines we owned at the time were spreading farmyard products onto arable crops for a constant six weeks, which Mr Adamson admits surprised him.

“The demand for spring applications has been growing, and the HBD machines create and spread a consistent product that is top-dressed to growing, hungry crops, so bought-in fertiliser can be scaled back. There are no big lumps of manure that sit in the crop for weeks waiting to be broken down and losing nutrients to the atmosphere, and the canopy of manure helps to retain moisture in the soil,” concludes David.

**Original article first published in Farm Machinery Journal.*



SPECIFICATIONS

Model: **Lowlander 175 HD HBD**

Spreading mechanism: **Horizontal beater and spinning disc (HBD)**

Max carrying capacity: **17.5t**

Cubic meters heaped: **23 m³**

Floor drive: **Hydraulic**

Floor chain size: **20mm**

PTO speed: **1,000rpm**

Axle: **Single**

Optional tyre size: **BKT 750/75 R46**



SPRING SPREADING SUCCESS

Operating a truly sustainable farming system can only be achieved when all parts of the farm are playing their part towards the end goal, and at Grosvenor Farms on the outskirts of Chester, this circular approach is key.

When a new dairy unit was installed at Grosvenor Farms' Eaton Estate in 2014, it took cow numbers from 1,600 up to 2,650, and prompted the farm to seriously consider how they could best use the 190,000t of manure that was being produced annually, which meant investment in a larger Lowlander 230 HBD.

The 6,000-acre farm is part of the Duke of Westminster's estate, and the dairy herd is housed all year round and bedded on sand, which was a key factor when choosing how to spread the manure, says Charlie Steer, Grosvenor's arable manager.

"The solid manure is higher in dry matter and acts as a soil improver, as well as providing extra nutrients. Whereas the liquid manure is higher in available nitrogen and allows us to apply it to standing crops when the demand is highest."



The issue with having two different products to spread throughout the year was that the farm needed to invest in machinery that was suitable to deal with this newly available fertiliser.

SPREADING DECISIONS

"I was aware of the umbilical kit on the market to spread the liquid manure but getting the bulkier organic manures on in the right places and spreading to widths that meet our tramlines proved a bit of a headache," says Charlie.

Soil on the farm is predominantly heavy clay, around 60%, but there is the added challenge of the River Dee running through the estate, which means nearly 30% is prone to flooding and is only suitable for growing forage.

"We decided to spread the bulkier organic manure all year round, or for as much of the year as we could feasibly travel on the land. It is low in available nitrogen, which means we stay clear of spreading limits and it is great for building up soil organic matter," says Charlie.

"This means we load the manure directly from the separator, which equates to around 115t per day and we invested in a Bunning Lowlander 120 horizontal beater and disc (HBD) muck spreader that could be run on the farm's existing John Deere 6210R."

It allowed the farm to have a wide spreading window as the single-axle flotation tyres helped keep compaction to a minimum in the wetter months. It proved to be a cost-effective way to get nutrients onto the field throughout the year and combined with soil mapping,

Charlie could target the areas that needed it most.

The spreaders have a pair of 695mm horizontal beaters at the rear of the body that breakdown the material before dropping it onto the two 1.1m diameter spinning discs for distribution. A 16mm heavy duty chain and full width slatted floor helps eliminate bridging.

"It was a system that worked well and meant the spreader paid for itself very quickly in fertiliser savings alone. The biggest issue we had was down to the weather not allowing us to travel on the land for extended periods in the year, which caused a build-up of material.

INCREASED WORKLOAD

This meant the significantly increased workload was too much for a single spreader and therefore a second machine was required. Happy with his first Bunning spreader, Charlie opted for a bigger Bunning Lowlander Widebody 230 HBD to allow him to spread comfortably to 24m.

"Ideally the material needs to be bulkier in order for us to reach 24m with the smaller machine - we simply couldn't defy physics," says Charlie. "This is why we went for the widebody 230 HBD, which is a different design to the 120 and has the spreading body mounted above the wheels, rather than sat within them, and a bigger

Spreader: **LOWLANDER WIDEBODY 230 HBD**



20mm chain for the moving floor.”

With this added height and the addition of hydraulic spring suspension, the material was able to match with Grosvenor's tramlines and avoid the spreading outfit needing to run down crop with intermediate bouts. Along with the different design, Charlie made sure the spec of the bigger 23t 230 Lowlander was high to keep output consistent throughout the year.

“As the 230 HBD was a tandem axle machine, we opted for the rear steering axle to help negotiate headland corners, which has been useful for reducing scuffing and crop damage when turning.”

Other handy additions included a GPS rate controller for accurate distribution of the material and Charlie says he can tie this into the soil mapping on the farm, too. There is also Isobus control, weigh cells, slurry door indicator and optional 710/50 R30.5 tyres for helping to reduce compaction.

“We've been really impressed with the build quality of the two machines, especially given the workload we put through them in a year. They are simple to setup and the guys like using them, and being British built, it means the backup is there if we need it. We can adjust the position of the

rear canopy to alter the drop point along with tweaking the blades on the discs through any of the five positions to fine tune the spread pattern.”

SPRING APPLICATION

Keeping the spreaders busy in the spring is key as spreading is governed by the growth stage and height of the crop, so being able to tread lightly means the ability to get on the ground earlier in the year. Other restrictions such as applying organic fertiliser to milling wheat before a certain growth stage can also curtail spreading.

“Application rates vary between the soil and crop requirements, but due to regular testing, we know exactly what we are spreading. Our solid manure has around 0.5kg of phosphorous (P) per ton and 1.5kg of potassium (K) per ton, so it would take a lot of spreading before any limits are reached.”

Before spreading begins, a tray test is carried out which has been devised from cut down plastic cans. Charlie says this is very similar to how the farm tests the granular fertiliser spreader and allows him to work out the material's coefficient and be confident it is reaching the full width.

“Output of the spreaders is determined by a multitude of factors, not least how far away the manure stack or separator is from the fields, but a comfortable day with the Lowlander 230 HBD can see 800t put through the beaters, with the record standing at over 1,000t shifted in one day,” says Charlie.

CIRCULAR ECONOMY

Another sizeable benefit of the Bunning Lowlander 230 HBD is the variable rate spreading, which allows

Charlie to vary P and K requirements of the soil to the yield map from the combine along with the soil mapping that is carried out during the year.

“When we started soil mapping, I noticed there were indices in our fields that we simply weren't addressing by just applying muck as a kind of waste disposal job,” comments Charlie. “Now we know what the manure consists of, and we have the machinery able to spread it accurately, we can target certain areas of the field and specific crops with the manure in spring when the crop requires it.”

“We are most efficient when loading the Bunning spreaders directly from the separator and being able to maximise the spreading window. This is where we have seen undoubted savings in fertiliser and improvements to soil health that have been huge benefits,” says Charlie.

**Original article first published in Crop Production Magazine.*



SPECIFICATIONS

Model:

Lowlander Widebody 230 HBD

Spreading mechanism: **Horizontal beater and spinning disc (HBD)**

Max carrying capacity: **23t**

Cubic meters heaped: **26m³**

Floor drive: **Hydraulic**

Floor chain size: **20mm**

PTO speed: **1,000rpm**

Axle: **Tandem**

Optional tyre size: **710/50 R30.5**



User: **WILLIAM MILLER**

Spreader: **LOWLANDER 105 TVA**



SIMPLE SPREADER MAKES BIG IMPACT

When William Miller's new Bunning Lowlander 105 manure spreader arrived in December 2021, the price of bagged fertiliser was nudging £800/t, which placed even greater significance on accurately spreading his organic manure at the optimum time.

The flexibility to accurately spread his own manure has led Cumbrian farmer William Miller to buy a simple manure spreader rather than hiring one for his regular applications.

Mr Miller, who farms in partnership with his wife Emma at the 145ha High Aketon Farm in Fletchertown, Cumbria, bought a second-hand 2012 Bunning Lowlander 90 TVA in 2018 after spending the best part of a decade hiring in machines to spread his stockpiled heaps. Last year, he upgraded from the 90 to a new Lowlander 105 TVA.

"One of the ways I justified buying a spreader initially was comparing it to the cost of a lorry load of fertiliser. The Lowlander 90 was the equivalent of two loads of fertiliser, but at today's fertiliser price, the cost to upgrade to the new Lowlander 105 was the equivalent to just 75% of one load."

SPREADER UPGRADE

The purchase of the Lowlander 90 was all Mr Miller needed to convince him of the benefits of owning rather than hiring. Financially, it looks more attractive to hire as there are small costs a couple of times a year rather than an initial outlay and ongoing maintenance. However, from a field management point of view, Mr Miller's inflexibility to spread when it was right for the crop was causing him concern.

"The Lowlander 90 was a huge step up in efficiencies and allowed me to make little and often applications,

targeting specific fields one load at a time. It also meant we stepped away from having peak spreading workloads from stockpiled farmyard manure, which was tricky to achieve the right application timings for some crops and the knock-on consequences could mean requiring more bought-in fertiliser later in the year."

The Lowlander 105 has a heavy-duty fully welded construction and uses twin 695mm dynamically balanced augers that feature 10mm thick Boron auger flights. The augers are fed by a full-width slatted floor with 16mm chains, and it has a capacity of 12.6t.

REAR CANOPY

During the build of the 105, Mr Miller added a rear canopy, which attaches to the rear of the machine and forces material to be spread by the bottom blades rather than applied from the full height of the auger

The canopy helps with spreading dry products such as lime and compost to achieve a positive accurate spread. On farmyard manure, the canopy breaks down bulky or heavy straw content manure and ensures an even-sized product is applied across the whole field.

"Before the canopy, we would have to put the harrows over the field after spreading to break down the bigger lumps before putting stock back into graze. The rear canopy does an incredible job of delivering a consistent product to the bottom blades. We use

it nearly all the time now to guarantee consistent application."

**Original article first published in Farming Scotland.*



SPECIFICATIONS

Model: **Lowlander 105 TVA**

Spreading mechanism:
Twin vertical augers (TVA)

Max carrying capacity: **12.6t**

Cubic meters heaped: **13.2m³**

Floor drive: **Hydraulic**

Floor chain size: **16mm**

PTO speed: **1,000rpm**

Axle: **Single**

Standard tyre size: **580/70 R38**



NORTHUMBERLAND FARM BENEFITS FROM TAKING SPREADING WORK IN-HOUSE

A Northumberland farm's decision to take its spreading workload in-house has provided flexibility to only spread in the best weather helping to minimise soil compaction and make the best use of the valuable manure.

High rainfall, a wide range of livestock, and an organic production system all combine to provide the Rutherford family with a challenging workload, which is why the purchase of a Bunning Farmstar 80 HBD manure spreader is adding some much-needed flexibility.

The spreader is into its second season and arrived highly equipped, with weigh cells and a variable rate controller allowing accurate and consistent application of a wide variety of products, including lime.

Michael and Graham Rutherford, along with their father George, run the varied 340ha enterprise at Longhorsley, Morpeth, which accommodates 1,800 breeding ewes, contract fattens 2,000 pigs per year, and a flock of 12,000 laying hens, plus a small number of suckler cows.

"We had been using a local contractor but wanted to make little and often applications to grassland, so ended up buying the Farmstar 80 HBD so we could spread a variety of material evenly and consistently."

WEIGH CELL OPTION

Bunning's Farmstar 80 HBD (horizontal beater and spinning disc) is an 8t/8-10 cu m capacity spreader, with a single 695mm dynamically balanced horizontal beater that feeds a pair of 1.1m diameter Hardox spinning discs with reversible Boron blades, to spread a wide range of products.

"Bunning has assured us it would

happily spread up to 24m, but we are happy at the 18m width we currently operate at and can spread loads quickly at 3-4t/ha on grass, and perhaps double that on our small area of arable land. A disc spreader also gives us the opportunity to spread lime ourselves."

The weigh cells mean the Rutherfords can apply specific application rates depending on land requirements and manure analysis. The farm is mostly medium to heavy clay and has all been soil nutrient mapped, as Michael explains.

"Our aim is to gradually build fertility through precise manure applications as needed – we don't want to waste material by just spreading it. Owning a spreader equipped with weigh cells and a rate controller, gives us the ability to do just that. The technology is easy to use and it's especially useful with chicken litter."

LOWER COMPACTION

The spreader was ordered on 650/65 R38 VF (very-high flexion) tyres to minimise ground pressure and match the similar width VF units fitted to the 130hp Claas Arion 610 that powers the Farmstar 80 HBD.

"The VF tyres mean we can run at pressures of only 23 psi (1.6 bar) to spread the weight of the machine and maximise the length of its footprint, which really helps to minimise sward damage. On conventional tyres, we

would have to run at nearly double those pressures.

"Investing in a Farmstar 80 HBD has meant we're able to spread when we want, usually two or three hours every fortnight, and only go when the conditions are right and at the rate we require," concludes Michael.

**Original article first published in Farming Monthly National.*



SPECIFICATIONS

Model: **Farmstar 80 HBD**

Spreading mechanism: **Horizontal beater and spinning disc (HBD)**

Max carrying capacity: **8t**

Cubic meters heaped: **10.2m³ (opt)**

Floor drive: **Hydraulic**

Floor chain size: **16mm**

PTO speed: **1,000rpm**

Axle: **Single**

Optional tyre size: **650/65 R38 VF**





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