



Last spring we operated the Bogballe Quadro M2W Plus in a range of crops and conditions. Optional storage wheels are removable.

Bogballe M2W Plus fertiliser spreader:

A nice slice of Danish

Bogballe's mounted M2W spreads fertiliser from 12m to 42m and aims to make work a pleasant experience. Last spring we put one through the profi test mill: here are the results

Denmark won't necessarily top most people's list as a prime source of spreaders. Yet the Laursen family has been quietly making machinery for distributing fertiliser for 60 years, and its machines carry the name of the village where the factory is still based – Bogballe.

History lesson over; time for work. Here we concentrate on the next-to-top model within the company's 'M' range – the M2W – which is marketed in the UK under the KRM banner. A comparative distribution test carried out by the DLG back in 2011 found that this machine delivered the most consistent spread pattern of the group, a performance it rated as 'very good'.

Models are split into 'Base' and 'Plus' spec.

The M2W Plus comes with 1,800-litre capacity, extendable to 3,000 litres; if that's not enough, the top model M3W can hold up to 4,040 litres. The M2W Plus's stainless steel weigh cell can handle up to 6t so shouldn't be overtaxed in this application.

The spreader uses Cat II couplers. There's good access room between the machine and the tractor, and all you need do is to connect the pto, the lights and a cable to the cab controller. There are no hydraulics.

Everything stores neatly when the machine is off the tractor. The test machine came with four storage wheels (£395) which are rated to carry (and move) only the empty spreader; they work, but their securing pins aren't made from stainless steel so will rust.

Material in the twin-compartment hopper is protected by a cover that's secured by a basic locking arrangement, whose rather awkward operating lever has been modified since our test. For those who like to stay in the cab, hydraulic folding is an option at £375. Also on the extras list is an external, foldable four-rung ladder (£395); if you go for this, don't forget to fold it away in the field, or it'll be sandblasted by granules. Inside the hopper is a substantial grid, with a second one on offer for £500 – useful if a batch of fertiliser is particularly lumpy.

Dimensions for the 3,000-litre test hopper were 2.89m x 1.41m (external, without the cover) and 2.83m x 1.31m internal. Filling height is 1.39m without the 200mm-tall

park wheel set. The bad news is that the hopper cover adds 160mm to overall width, taking the spreader just beyond the all-important 3m; the better news is that there are two windows to check hopper contents. A parallelogram linkage corrects for uneven distribution of hopper contents, so the single load cell should always produce reliable output.

The spreader's two agitators live partly under cone-shaped protectors which lift up with the hopper grid. Material is fed only to the sides of the agitator fingers, an arrangement that the maker says gives granules an easier life and helps stop packing in transport; our test impression agrees with this. Agitator design is unique – mounted eccentrically, their range of movement and rotation speed is decided by fertiliser resistance. As a result, low-resistance material like urea is agitated gently, while denser stuff like

normal spreading, headland spreading and emptying. Calibration is about as easy as it gets, takes around five minutes and needs no tools or disc removal to complete. You take out a section of a disc, fit a small chute, turn the disc so it lines up with the hopper outlet, lock off the disc and put a container underneath the machine. Automation then opens and closes the slides. You weigh the fertiliser material delivered, punch the result into the cab controller and replace the disc segment. The same section is taken out for hopper emptying.



The hopper cover folds manually, with hydraulic operation optional. Also an extra, the rear folding ladder is useful. Storage wheels let the empty spreader be moved around on smooth floors.



Standard grids can be doubled if lumps are a problem. Two agitators (inset) are covered by a cone when the grids are down, which force side entry and so minimise granule damage.

potash prompts faster, more vigorous action; speeds range from 12rpm to 60rpm. And while the set-up does require greasing once or twice a season, it worked extremely well in the field.

Below the agitators, patented double shutters control outlet size and hence material flow from the hopper. Each outlet is policed by a pair of slides, which open and close in unison; this means the rate can be varied without changing the delivery point to the underlying discs, or any other setting. Bogballe's Quadro system derives its name from its four prime functions – calibration,



Disc vanes lock into one of several positions.

This procedure is usually only needed where application rate differs from that suggested by the excellent rate tables, or where rate setting information is not available. The latter comes with the machine and is also online, covering a wide range of brands and materials by trade name. We found these suggestions realistic and useful, being never more than 5% adrift of the field result.

Manual calibration with the material in use can improve on the stock figures slightly; and, to cover all bases, a fertiliser test kit is supplied with the M2W Plus. This contains a hardness tester and sieve set so you can check the physical properties of a specific material; the results, along with calibration info, can then either be entered into the spreader's controller or on the manufacturer's website, where machine settings are generated for that material, working width and forward speed.

Bogballe's Trend spreading system builds

TEST ASSESSMENT

How we rate the Bogballe M2W Plus

Attachment to tractor	⊖
Connector storage	+
Hopper	++
Hopper access	+
Hopper cover	+
Metering	++
Spreading	++
Distribution	++
Headland spreading	++
Pattern test kit	+
In-cab controller	++
Build quality	+
Maintenance	+
Operator's manual	+
Parts list	+

Ratings: ++ = very good; + = good; ⊖ = average; ⊖ = below average; ⊖ = poor

full application rate between tramlines by using two double overlaps. The spreader's discs spin inwards, with each able to cover the machine's full range of working widths (12m-42m). On the first pass a double overlap applies half the required rate, and then on the matching pass a second double overlap finishes off the job. This little-and-often method builds to the required rate in four steps, thus reducing the variations that may come from wind, terrain or pto speed.

For headland work, disc rotation is simply reversed via the in-cab controller, and pto speed reduced according to a chart. The test machine carried Bogballe's option for spreading alongside streams and other sensitive areas (£410), a job achieved by closing the right-hand slides and lowering a plate between the discs. With this set-up in play, losses were 0.25% and the coefficient of



An accessory kit lets you pattern-test the spreader in the field. It's easy to use.



variation (a measure of difference from the average) was 16.6% – good results, comfortably inside the relevant EU guidelines.

There's no need to change discs or vary the delivery point manually on the M2W Plus. But you do need to swap vanes when changing material, something which doesn't alter spread width. It's a job that's quickly done via two bolts on each vane.

The machine may also need to be adjusted front-to-rear for angle, using a factory-supplied gauge and the top link. For maximum

durability, the spreading vanes are made from manganese steel.

The M2W Plus is operated from Bogballe's Zurf in-cab display. This allows calibration chart import, along with application data for up to 99



We liked the Zurf controller for its clear display, ergonomic design and intuitive operation.

fields. Via the office PC it's possible to plan up to four applications for each field, and then in work you're presented with just the data for that field and application.

We really liked the Zurf unit for its neat ergonomic design, intuitive operation and the way that the big screen stays readable in all types of light. Main functions are chosen by button rather than by drilling through menus; the latter is

seldom necessary. Forward speed data can be taken from the tractor through an accessory cable (£55) or from a conventional wheel sensor, a pto sensor or a GPS sensor kit. If you use a TeeJet Matrix or Patchwork Advance console, headland management is available. For tractors with ISObus it's possible to specify a matching spreader at no extra cost; we used it with a Müller terminal. This worked, but didn't support calibration chart import or the allocation of fields to specific customers.



A single disc pictured from the side. During calibration a section is removed, the disc is positioned under an outlet and locked, and a chute is swung into place. Hopper emptying used the same procedure.

What's it like to work with the M2W Plus?

Easy. The Zurf controller spots that the hopper is filling and asks for confirmation. The user looks up the material in the spreading chart or online, checks the right vanes are fitted, and then sets machine angle and pto speed as recommended. Final step is to enter the required rate. An electric motor then operates pairs of slides under direction from

the Zurf controller; there are no springs to break so slides can't stay shut. You can then vary application rate on the move if required. For headland spreading it's necessary to briefly shut off the pto when lowering the deflector plate.

We spread nitrogen sulphate at 300kg/ha and 28m width, travelling at 14km/hr. This translates to 200kg/min, a rate that took the spreader to its limits – the charts say up to 243kg/min is possible. Those wanting even higher application rates can specify a £70 kit which lifts output by 40%.

Other business:

- Hopper is easy to clean
- Hopper base is made from stainless steel
- Driveline is protected by a slip clutch
- Slug pellets and rape are handled by a standard small seeds kit
- Road lighting is standard
- Operator's manual is easy to fathom
- Test trays are an option at £375.

A base-spec Bogballe M2W Plus spreader lists at £13,825 before VAT.

MEASUREMENTS

Bogballe M2W Plus

Empty weight (kg)	720
Transport width (m)	3.05
Hopper width, outside/inside (m)	2.89/2.83
Hopper depth, outside/inside (m)	1.41/1.31
Filling height (m)	1.39
Capacity, standard/max (litres)	1,800/3,000

Summary: Previous profi tests showed that in accuracy terms the M2W Plus performs very well. We can now add that in the field it's easy to operate. Positive points are the quality finish, pleasing design, simple operation and a fine in-cab controller; a small negative are the rust-prone pins on the storage wheels. Also, the fact that the transport width goes over 3m when a hopper cover is fitted should be addressed.