While rear discharge spreaders may be the fashionable for applying manure to fields, other spreader types still play a valuable role in providing much needed nutrients and organic matter to soils.

One of the lesser seen machines is Keenan’s Orbital spreader, but one has been the mainstay on a Warwickshire farm since its inception. Farming 120 hectares on the outskirts of Rugby, Austin Welton first saw the spreader when it was launched at the Royal Show in the 1990’s. Buying the machine on show, based on its principal, it has since been replaced by the newest model, after two decade worth of dung throwing graft.

The latest Orbital was purchased three years ago and has been busy working through the farm’s muck heap, contributed to by 300 head of fattening cattle, which are bedded on woodchip during the winter months and fed a TMR ration. Operating the spreader when we visited was Mr Welton’s grandson Jack Cave.

Mr Welton says the spread pattern produced by the Orbital on his muck is fine and consistent. The Orbital has a fly wheel at the front of the machine, which shreds and propels the material across the field.

“The orbital will throw the muck about 20 metres,” he reports. “It produces a very fine spread pattern, making it suitable for spreading on permanent pasture, without the fear of large lumps of muck not rotting down.”
Its flywheel is 1.8m in diameter and features six paddles for propulsion, with intermediary blades fitted for shredding. The tractor’s pto is run at 1,000rpm with drive transfer to the spinning disc via a heavy duty chain and sprocket arrangement, stepping the flywheel speed down to 170rpm.

Power comes courtesy of a 115hp New Holland T6030, which provides ample power, says Mr Cave. However, one of the major differences between the Orbital and rear discharge machines is the direction in which the muck is pushed when unloading.

Unlike with machines with beaters at the rear and thus taking weight off the drawbar when spreading, the Orbital pushes the muck towards the tractor, taking weight off the implement’s wheels and transferring it to the tractor.

This, says Mr Welton, allows a smaller tractor to be used on the 12 tonne capacity machine, without worrying about the tractor being ‘bossed’ about by the spreader.

He adds; “A swing down door separates the load area from the flywheel during loading and transport, providing low start up torque.”

“Spreading rate is easily adjusted”, says Mr Cave. “A hydraulic valve on the side of the spreader controls how much oil is sent to the large ram at the rear of the machine, which pushes the muck forwards.”

Loading is done with a Manitou MLA-T 533, although a tractor and loader can be used. Three of the pivot-steer’s buckets of muck are generally sufficient to fill the spreader, without it falling over the sides, or becoming over compacted which can become difficult to extract, he says.
He also notes that at under seven metres and weighing less than 5,500kg when empty, it is manoeuvrable and kind to the land, allowing a lighter tractor to be used, preserving the grassland and maize ground it spreads on.

But the defining feature of the spreader for Mr Welton is the fineness of its spread. "This allows me to graze cattle earlier, knowing the muck has rotted down well, and given the pasture an even application of nutrients," concludes Mr Welton.
Operators need to pay careful attention to the discharge rate, says Mr Cave, stopping the flow from the spool to the pushing ram if the spread width drops, to allow the flywheel to re-achieve its optimal working speed.

“You only push it too far once,” says Mr Cave, speaking from experience. “If it does block, you have to shovel the muck off the flywheel, so you quickly learn to watch the output. It is not difficult to slow down and stop the pushing action if needed, however, it is easy to adjust the pushing speed on the valve if you get into looser muck.”

Upon exiting the spreader, a set of vanes further obliterate the material, and provide some directional control. These are adjusted hydraulically and can be extended or retracted if the muck needs breaking up further.

The spreader rides on a pair of BKT 550/60-22.5 tyres, proving an easy pull, with little imprint, says Mr Cave.

Mr Welton adds that the simplicity of the design and sturdy construction were also major factors that influenced his purchasing decision. “The first one had very few problems in its 20 years here, and anything that does go wrong is easily fixed. Compared to chains and beaters, with a long driveline, this is compact and simple.”