

Weighing THE VARIANTS



The installation of an Anaerobic Digestion Plant has led to the expansion of the services offered by a Leicestershire based contracting company, alongside a significant machinery investment. Matthew Tilt reports.

The Holmer Terra Variant is a specialist tractor unit, imported into the UK by Agrifac. Sales and Marketing Manager, Matt Carse, stated that there are currently eight machines operating in the UK, four of which have been specified with the Zunhammer slurry tanker and dribble bar applicator. The latest unit was purchased by Taylors Agricultural, a contracting subsidiary of Leicestershire farming enterprise PS Taylor and Sons, to spread the digestate produced by a 2.7mW AD plant near Atherstone, Warwickshire.

The company was established by Sam Taylor way back in the 1920s, who was then joined by his son Pat in the 1950's. The business is now managed by Pat's sons Adam and Shaun Taylor who moved away from general contracting in the 80's and 90's to focus on contract and share farming. The company now farms approximately 5000 acres over three counties, Leicestershire, Warwickshire and South Nottinghamshire, including a tenancy at a farm in Kingston-on-Soar and a contract farm agreement at the Merevale and Blyth estate near Coleshill.

The significant investment in the Terra Variant, with a mounted Zunhammer 21m³ slurry tanker and Vogelsang 18m Compax dribble bar, represents the first time that Adam and Shaun have dealt with slurry or digestate, which was instigated after the Merevale and Blyth estate installed an AD Plant in partnership with Biogen.

"Matthew Dugdale, the owner of the

estate, saw an opportunity to reduce fertiliser costs across approximately 2200 acres of arable land, and we were approached early in the planning stages about spreading N, P and K rich digestate," explains Adam.

"The idea appealed to us because it meant that we kept complete control of the operation and could apply the product when and where it was needed in our own timeframe."

Being a wholly new venture the Taylors looked at several options in cooperation with Biogen and the estate before deciding on the Holmer unit, including umbilical systems and trailed applicators.

"Neither of these options were suitable for the conditions; there's seven miles between the plant and the block we are currently operating in with roads and households in-between so an umbilical pipeline was unfeasible," says Shaun. "As for a trailed unit, the majority of the estate is on sandy soil which becomes waterlogged very easily. A self-propelled was really the only option when it came to reducing ground pressure and the risk of the machine becoming stuck and creating ruts."

Interjecting, Adam points to a windsock in the field and explains that flexibility was also paramount with the presence of villages in the vicinity. "If the wind changes direction we need to be able to move to minimise the chance of the odour becoming a nuisance, especially as there's a wedding venue close to where we are now."

It was also important because the plant is not PAS110 certified, meaning the digestate cannot be considered a bio-fertiliser. While Biogen is in the process of achieving this certification the product must be treated as bio-waste and spread

in deployments arranged with the Environment Agency.



Steven Pass (left) stands next to Adam and Shaun Taylor in front of the Holmer Terra Variant.

While researching the range of machines available Adam and Shaun were impressed by several key features of the machine. "We could see how the Holmer's crab steer distributed the weight to the point where you could only just see where it had run, and that the tanker and dribble bar were more than capable of applying the 30-35m³ of digestate per hectare that we required," says Adam.

Shaun expands on this, mentioning the versatility of the Holmer. "The fact that we could remove the dribble bar from the three point linkage and tow our Gregoire Besson disc cultivator, with a mounted macerator and applicator, to integrate the slurry before planting was very appealing to us."

Following this the Terra Variant was ordered, the first in the UK with an 18m Vogelsang dribble bar, along with three 18m³ Zunhammer slurry tankers fitted with

rear steer axles. The tankers were purposely specified to be smaller than the application unit so that the Holmer does not need to be empty before it is refilled.

In the cab there are four terminals – one for the tractor unit, one for the tanker, one for the dribble bar and a Trimble FmX to control guidance

technology, which Adam and Shaun have specified with OmniStar sub-1m accuracy autosteer. Steven Pass, a tenant on the estate and operator for the Taylors, commented that it had been a lot to take in at first.

"The technicians were here on the first day to help set the system up and it was easier than expected to get used to the various controls, even though none of us had used a machine like this before," he says.

They all agree that when the machine arrived it was 'pretty much right', and Adam and Shaun are now looking at further investments to utilise the maximum output of the Terra Variant, as on the day the machine was working at less than 50% of its true capacity. "Due to the distance between this block and the plant, three tankers are not enough to keep the machine

moving so at the moment we're applying 600m³ per day," states Adam.

However the fact that the machine can unload the tankers in just over two minutes has meant that when the tankers arrive the Holmer is quickly back in operation, and efficiency will continue to increase as the Taylors move closer to the plant. "It's important that downtime is kept to a minimum, especially when you take into account the distance the haulers have to travel. Biogen are currently working on a pipeline with a reservoir to halve this travel time, but for now the speed of unloading means that the machine is utilised as fully as possible," comments Shaun.

They've also been impressed with the fuel consumption of the unit; before sitting in the cab with Steven, Matt had noted that the dribble bar can be operated at 1100rpm as the Zunhammer and Vogelsang



High product flow during filling means that the 18m³ tankers can be emptied in just over two minutes, meaning the Taylors can maintain a level of efficiency despite their distance from the plant.

gear requires just 200 of the 598hp available. While in the cab the Holmer terminal confirmed this, registering a 33-litre per hour consumption during application, and 10 litres per hour when filling. With a 1000-litre fuel tank it has provided four days of operation before refuelling.

Having only operated the Terra Variant for a matter of weeks, Adam and Shaun say that while there are ideas about further utilising the unit, nothing has been decided. "We purchased the machine solely for the work generated from the Biogen plant which we believe more than justifies the expense," concludes Adam. "However this does not mean that we're not willing to work for local farmers if requested, but this will always take a backseat to the land we contract farm."

THE MACHINE

The Terra Variant is powered by a 598hp Mercedes Benz engine and driven by an 18x6 powershift transmission with a maximum road speed of 40km/h. The operator can choose between Eco and Fixed Speed modes to get the best performance depending on the task; in Eco mode it will automatically find the most efficient gear in accordance to the power requirements, while in Fixed Speed the driver can define each gear to reduce engine speed.

The chassis features two planetary steering axles, each with a 25-tonne carrying capacity (depending on tyres chosen) providing four possible steering modes – two-wheel, four-wheel, crab steer and an additional manual rear steer which gives the operator control of the rear axle using the integrated joystick. The crab steer

system is operated by a three point mount behind the tractor unit which keeps the outfit in a straight line at all times. Five double acting controls, with load sensing and Power Beyond ensures the flow of hydraulic oil is always available when needed.

The Zunhammer tanker has a capacity of 21m³, with a 10" diameter, 5.7m long suction pipe which can be pivoted up to 170° for filling over

hedgerows and ditches. Intake is controlled by a Vogelsang rotary piston pump capable of up to 9000 litres per minute and to protect the pump, a Rotocut unit chops or separates foreign objects such as grass, straw and stones and is fitted with auto-reverse to avoid blockages and features a stone trap which can be emptied from the cab.

Customers have the option of a Vogelsang dribble bar or injection system, attached to the rear three-point linkage, for application rates of up to 160m³ per hectare dosing or 25m³ when injecting. On the 18m dribble bar specified by the Taylors, there are twelve sections, each containing 10 outlets with manual section control, and a macerator each side of the boom to ensure smooth product flow. ■

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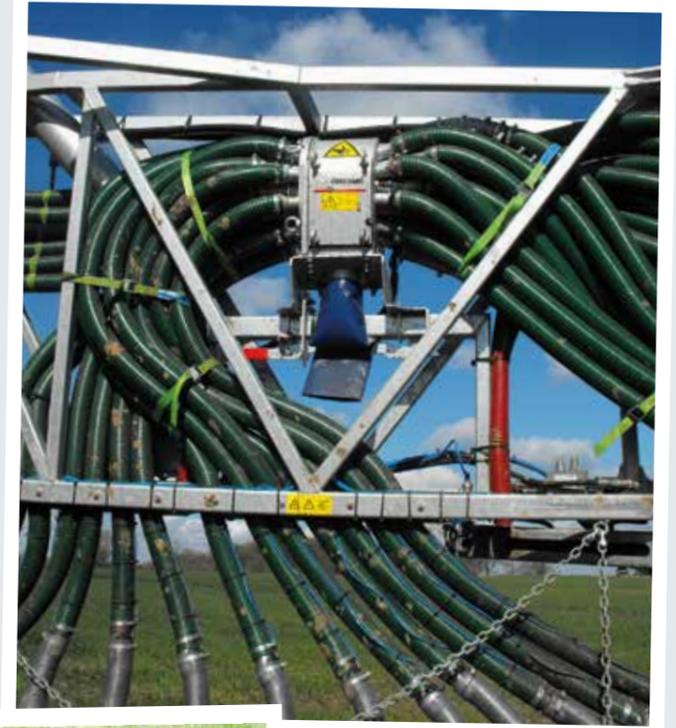


The 598hp engine can be accessed via wide opening panels, and the cab can be tilted forward for easy maintenance.



During filling, up to 9000 litres per minute can be transferred with the Vogelsang rotary pump. The red unit positioned next to the pump is the Rotocut, which has automatic cutting control to maintain pressure and automatic reversing to avoid blockages.

Each side of the boom is fitted with a Vogelsang macerator for additional product refinement, ensuring a smooth flow of slurry or digestate.



The dribble bar is mounted on a fully hydraulic, pivoting three-point mount to keep the unit in a straight line at all times, even when operating in crab steer mode. The linkage also means that cultivators specified to apply slurry can be operated behind the tanker for product integration.



The Holmer specified by the Taylors has four terminals fitted, one for each aspect of the unit and a Trimble FmX screen for guidance. Most functions are controlled either through the Holmer terminal or the multi-function joystick, with a minimum of switches and dials at the side of the operator.



The 10" diameter, 5.7m suction pipe pivots up to 17° and can operate at any point for filling over hedgerows and ditches. This means that operation can continue and efficiency can be maintained even if the tankers are not able to access the field.

The 18m Vogelsang Compax dribble bar was the first to be specified in the UK and is fitted with manual section control. For travel, it folds to within the Holmer's 3m width.

