

Diversifying with digestate



Ninth-generation farmer James Nott has grown a thriving business around digestate spreading. With Samson kit now at the heart of the operation, CPM finds out about the drivers behind the enterprise and the machinery that makes it possible.

By Charlotte Cunningham

Farming has been in the Nott family for nine generations, and James Nott is the first to admit that resilience and adaptability are stitched into the fabric of the Suffolk business.

"We're a relatively small family farm, but contract farming has given us scale and efficiency," he explains. "Even so, agriculture is cyclical – there are always good years and bad. We've had to diversify to create income that supports the core farming."

Diversification has taken many forms over the decades, from business lets and contracting, to moving into digestate application seven years ago. But in fact, what began as a pragmatic attempt to tackle the limitations of heavy clay soils has become one of the farm's most important enterprises.

"It started from a simple realisation: our soils required more than bagged fertiliser," says James. "Clay is slow to release nutrients, so you can apply N, but crops don't always get it when they require it. I wanted to put something back into the soil that would build fertility, improve nutrient availability,

and support long-term resilience."

The answer was digestate. Today, the team spreads around 140,000-150,000m³ each year, between February to October, across a wide swathe of East Anglia. Feedstocks are drawn from both farm-fed AD plants and food waste digesters serving London, with material transported out of the capital and onto arable land from Thetford to the Suffolk coast.

"The difference is visible," says James. "You walk into a field and can see the areas that have had digestate and those that haven't. Over time, fertility is clearly improving."

One of the enterprise's driving forces is operator Gareth Waite, who joined the farm straight after university. "I'm not from a farming family but I always had a passion for it," he says. "In my third year at university I trialled different application rates of digestate on winter wheat, and that gave me real insight into how it can be integrated into a modern farming system."

When the pandemic curtailed arable operations, Gareth threw himself into digestate spreading. Three years on,

he now manages daily logistics, co-ordinating haulage and operators. "Each year we spread more," he says. "Our land bank is wide and having the tanker-based system gives us reach. We can travel seven miles from a lagoon, which opens up land that would otherwise never be available."

At the heart of the operation is a Samson PG II Genesis 35 tanker – a flagship model designed for high-output contractors – which was purchased following a factory visit to Denmark



No changes required

Operator Gareth Waite says in the three year's he's been driving the Samson PG II, there is little he'd change – having spread nearly 390,000m³ with minimal issues.

► a few years ago, explains James. “Samson is decades ahead in terms of slurry and digestate handling. Seeing the thought that’s gone into design gave me the confidence that this was the right choice and a major upgrade compared with our previous kit.

“From the moment it arrived it was a game-changer,” he adds. “The engineering is spot on – robust, fit for purpose, and clearly designed by people who know exactly what they’re trying to achieve.”

Gareth shares the same view:

“The booms fold out smoothly, the fast-fill system keeps downtime to a minimum, and everything just works. Once you’ve used a Samson, it’s hard to imagine going back.”

Delving into the detail behind how exactly the PG II works, Samson’s David Bowman explains that James’ workhorse is a 35m³ tanker with a centrifugal pump capable of 15.5m³/minute at 4.5 bar. “That pressure is key – it’s what drives liquid to the end of a 36m boom, ensuring the smallest triangles of non-application in the industry.”

Unlike vacuum tankers, the PG II creates vacuum only in the pipework to draw liquid into a turbo filler, which then rapidly loads the tank. Construction from Domex high-tensile steel keeps the machine lighter than conventional builds, explains David. “We can empty an artc in three minutes. James’s machine also has a front-mounted filling arm that reaches over hedges or tankers, which gives great flexibility.”

Boom design is another differentiator, compared with other options on the market. “The 36m boom was engineered as such from the outset,” he continues. “Epicyclic packs replace folding rams, meaning widths can be adjusted on the



High-output option

At the heart of Nott Farming is a Samson PG II Genesis 35 tanker – a flagship model designed for high-output contractors – which was purchased following a factory visit to Denmark a few years ago.

move – 34m, 32m or 30m – directly from the cab. Four macerators ensure high-capacity distribution so you can apply 30m³/ha at 8kph with even spread.”

For operators, those features translate into real gains, believes Gareth. “Our old spreader would take 8-10 minutes to unload a lorry. Now we’re down to 2.5-3 minutes. Turnaround time is night and day.”

Digestate spreading often prompts debate regarding whether tanker or umbilical systems are best. James and Gareth are clear why they’ve committed to the tanker route.

“Umbilical has its place – it’s lightweight and can achieve high output close to the source,” says James. “But it’s limited by distance and rate; you can’t push it beyond 24m reliably, and nutrient loading around lagoons is often too high. With tankers we can apply accurately at 36m and much further afield.”

For Gareth, it’s also about practicality. “With umbilical you have downtime setting up and rolling pipes, and it ties up haulage. With the Samson, I can finish one field and be applying in the next within minutes. In the right conditions, umbilical may edge daily

volumes, but with the PG II we regularly hit 1500m³ – my best day was 1900m³.”

Concerns about compaction are often raised, but both men argue the design of modern tankers has addressed this. “We stick to tramlines, and with tyres up to 800mm across five axles, the footprint is surprisingly light,” says Gareth. “Compared with older designs, the pressure on the soil is well within acceptable limits.”

In terms of the value of the digestate itself, every load applied is PAS110 accredited, with monthly testing of feedstocks. Additionally, James’s machine is fitted with a John Deere HarvestLab 3000 sensor to deliver real-time nutrient data. “That gives us flexibility,” says James. “If a client wants variable-rate application, we can deliver it. Even if not, we can demonstrate exactly what’s gone on the field. It’s reassuring for us and our customers.”

For Gareth, the sensor makes day-to-day work more precise. “It takes away the guesswork – I know what I’m applying and can make adjustments instantly. It’s another reason clients have confidence in us.”

The capital cost of replacing a tanker



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and tractor together can approach £800,000 – a daunting figure. But Samson argues ownership costs must be measured differently. “Yes, initial outlay is high,” admits David. “But these machines are designed for two tractor cycles – 8-10 years – and residual values are excellent. I’ve had machines with 800,000m³ through them still selling at 60% of new price. Once you divide depreciation by volume applied, the cost per cubic metre is very low.”

James agrees: “It’s a big commitment, but it’s paying back. Clients want us year after year, soils are improving, and crops show the benefit.”

Looking ahead, regulation remains a watchpoint. “Digesters have to be empty for winter, but Farming Rules for Water are tightening,” explains James. “Finding compliant windows may get harder, so we have to keep adapting.”

From Gareth’s perspective, refinements could further improve operations. “I’d like a more accurate flowmeter on intake – currently it’s just a needle gauge. Some systems show exact volumes which would be useful. Beyond that, there’s little I’d change; in three years, we’ve spread nearly 390,000m³ with minimal issues.”

So while digestate spreading may once have been seen as a sideline or a way to dispose of waste, at Nott Farming it’s evolved into a core enterprise built on sound agronomy, robust machinery and a clear business vision.

By blending family heritage with forward-looking technology, James and his team are showing how a by-product can be turned into a valuable input – and a profitable service. “It’s a reminder that with the right kit and mindset, farming’s challenges can often become its biggest opportunities,” he concludes. ●



Industry-leading tech

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At a glance – Samson PG II Genesis 35

- **Tank capacity:** 35m³
- **Pump:** Centrifugal, 15.5m³/min at 4.5 bar
- **Filling system:** Turbo filler with pipework vacuum; artic unload in around 3 minutes
- **Construction:** Domex high-tensile steel for a lighter build and stronger structure
- **Boom:** 36m design with epicyclic folding; adjustable to 34/32/30m widths
- **Macerators:** 4 high-capacity units for even distribution
- **Filling arm:** Front-mounted, capable of loading over hedges/into road tankers
- **Options:** Driven axles available on models 20m³+

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