



# Getting the most from nature

Based just outside of Peterborough, water tank manufacturer Enduramaxx offers a range of solutions to get the most out of your farm's rainfall

**W**e all moan when it rains. Especially in a catchy harvest like this because it stops work.

Depending on the amount of rain, it can cause soil damage when the following operations are completed. While ample water is a necessity for healthy, high-yielding crops, when it rains, we're not always so happy about it.

UK manufacturer Enduramaxx believes that this shouldn't always be the case and has a range of plastic tanks available to provide various benefits to customers. These range from polyethylene and polypropylene tanks for chemical storage, which range in capacity from 50 litres up to 30,000 litres. More recently, Enduramaxx has focused its attention on water storage, specifically rainwater harvesting.

Above ground tanks, which can be mounted alongside shed and farm building guttering, are available from 150 litres up to 30,000 litres. The company has a range of options to suit different farm sizes and space availability, including low profile units, vertical or horizontal setups and slimline tanks. Multiple tanks can also be connected, and various filters are available to remove debris. There are also underground systems available



from 180 litres up to 10,000 litres.

Speaking with sales director Chester Gilbert and business development manager Roger Lebett, they explained that there were clear benefits to rainwater management.

With rising costs across the country, including for mains water, collecting rainwater for use on non-consumption activities, such as washing down equipment, amenities (if events are held on the farm – the Cherry family, who run Groundswell, has invested in several potable water storage tanks), and even spraying can have an impact on monthly outgoings.

It can also help national infrastructure to deal with extreme weather events. Enduramaxx's own calculation for deciding on the size of

**TOP**  
Using rainwater in sprayers can help to improve chemical efficacy

**ABOVE**  
Chester Gilbert and Roger Lebett

tank required states that the square metre area of the shed roof should be multiplied by the average annual rainfall (in cubic metres) and divided by 12 to figure out the monthly storage requirement.

$$\begin{aligned} \text{Roof area} &= 450\text{m}^2 \\ \text{Annual rainfall} &= 750\text{ml} (0.75\text{m}^3) \\ 450 \times 0.75 &= 337.5 \\ 337.5/12 &= 28.125\text{m}^3 \end{aligned}$$

The base calculation shown suggests that per month, the example building could be subject to 28,125 litres of rainfall, and in extreme weather scenarios this can be up to three times as much.

Without storage, this water must go somewhere, and it will run-off on to fields, potentially overloading their drainage capacity and making it difficult to travel over the ground; or it will run off on to roads and concrete yards, leading to flooding. The final place it will end up is into waterways, leading to flooding downstream and potential contamination from soil, oils or chemicals.

Enduramaxx recommends enough storage for three months of average rainfall. While this might seem like a significant upfront investment there are grants available through the Rural Payments Agency's Farming Equipment and Technology Fund (FETF), as well as



**LEFT**  
EnduraMaxx makes a wide range of plastic tanks for chemical and water storage



**LEFT**  
Products are manufactured at EnduraMaxx's base, with recent investment in new buildings and improved process

boom systems.

The underground tanks can also be used as run-offs for silage clamps, dairy parlours and sprayer clean-off areas, keeping contaminated water out of waterways and helping farmers to meet ever-more stringent environmental regulations.

**“ We’ve seen examples of growers collecting rainwater but storing it in metal tanks which have rusted and contaminated the water, particularly with longer term storage ”**

**Improving efficacy**

There are also benefits that may not be immediately apparent. Around 60% of the UK receives hard water through the mains.

Hard water contains more than 200ppm (parts per million) of cations, such as calcium carbonate. More than 300ppm is considered very hard water. Counties in the south east and the east of England have the hardest water in the UK, as well as large areas of the Republic of Ireland.

While mains water should not get above the 300ppm level, Andrew Watson, head of membership technical services at NIAB, explained that some farms using boreholes had sent samples that far exceeded this.

For domestic use, hard water causes limescale, which can damage appliances over time, similarly, in farming, very hard water can also negatively impact spraying operations. The cations can react with the active ingredient, binding it to the cation and locking it up and making it unavailable to the plant. Water conditioners are available, but these create additional costs.

Mr Watson explained that while NIAB

found that water conditioners were only required when the water hardness reached 500ppm – therefore mainly required for those using boreholes – he reemphasised the importance of testing water sources to ensure this is not required.

He also added that the benefits of collecting rainwater went beyond this and that careful consideration should be given to the type of tank.

“More damaging to sprayer systems and the efficacy of any chemical used is iron,” he said. “We’ve seen examples of growers collecting rainwater but storing it in metal tanks which have rusted and contaminated the water, particularly with longer term storage. We would recommend that growers do not store water in metal tanks, and instead look at corrosion-proof plastic solutions.”

He added that another benefit of harvesting rainwater was the impact it can have on slurry storage. Slurry storage and the rules around this are a key concern now, with many farms potentially looking at high levels of investment to meet current legislation.

“On farms that are not collecting rainwater, this water can end up in the slurry lagoon, reducing the storage capacity,” he explained.

Returning to the tank size calculation earlier. The example farm would see at least part of that 28,125 litres of water enter the slurry lagoon, on top of the slurry collected. In particularly wet months, this could cause significant issues, forcing the grower to move slurry, or spread it when conditions are not right to avoid overflows.

Therefore, investment in water harvesting systems could not only take create a soft water, neutral pH source for various operations, it could also take pressure from slurry lagoons and potentially reduce the level of investment required to meet slurry storage rules. 🌱

from some water companies to help with this. Taking the above example (and this is for just one shed), three months of average rainfall would equate to nearly 85,000 litres of free water.

If you look at a large sprayer, with a 10,000-litre tank, that’s eight refills just from one shed. Even if monthly water costs are not the biggest concern for a farm, over time this could lead to significant savings. It’s the same for farms with irrigation requirements, especially those to have already invested in water-saving techniques such as drip irrigation, or irrigation

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