

Tips to help you take the heat out of pasture management in dry weather conditions

Dig deep to beat drought

With some parts of the UK already experiencing drought conditions, we take a timely look at how to ensure that your grassland performance is optimised, even when water is in short supply.

text **Rachael Porter**

There's not a lot that producers can do about the weather, but good soil structure will help to combat drought and there are grass and other forage species, such as chicory and lucerne, that are also more tolerant to dry conditions.

Maintaining good soil condition is a vital part of forage production, according to Charlie Morgan of independent grassland consultancy Grassmaster. "And it is all the more important if drought conditions are prevalent," he says.

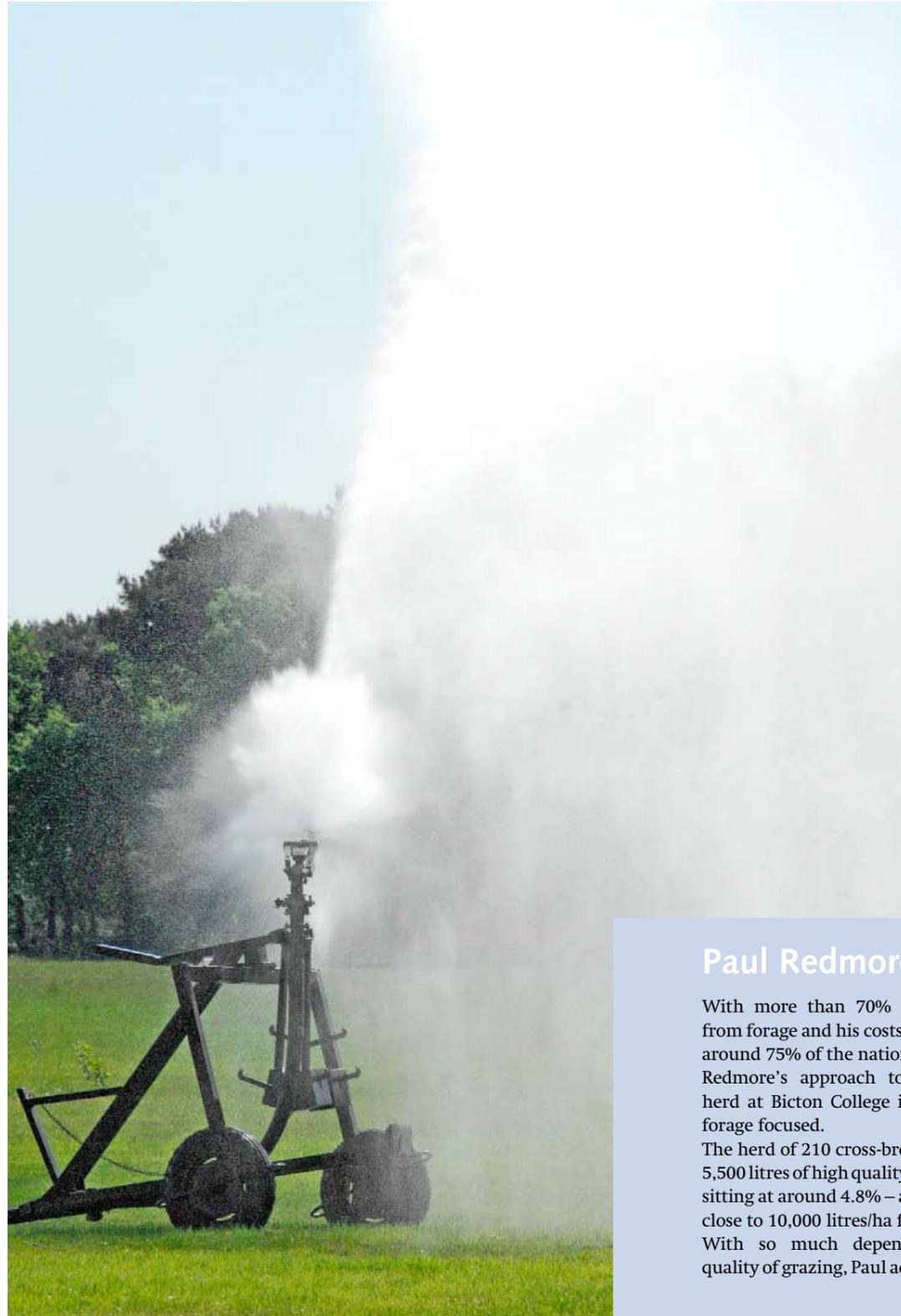
"The better the root structure of your swards, the more productive they will be, and this is exacerbated when moisture is harder for the plants to find," he says. "Soil structure should really come ahead of everything else when considering how to improve pasture productivity."

Compacted pan

He says that compaction is more common on grassland farms than many people imagine, and the easiest way to check is to dig a 30cm-square hole to a spade's depth and look for tell-tale signs.

"Often you can see horizontal cracks, or your spade will meet resistance, or there may be signs of water-logging," he says. "Other signs include foul smelling soils and an absence of worms. In newly reseeded swards, roots may not penetrate a compacted pan, whereas in more established swards – where the roots may penetrate – the pan will prevent

Charlie Morgan: "Look for tell-tale signs of compaction"



moisture and nutrients permeating deeper into the soil profile. Either way there is a problem."

In addition to restricting root growth and uptake of nutrients, compaction will also reduce the activity of earthworms, which perform a vital function in helping incorporate organic matter and improve soil structure.

"If you are ploughing in preparation for reseeding, this will sort out any possible compaction problems provided the plough goes below the existing pan and not into the sub-soil. But if you are direct drilling it's vital to check soil condition in advance.

"Otherwise, the problem is relatively easily remedied through the use of a soil aerator or a sward lifter, depending on the depth of the compaction. This should not be done, however, in wet conditions or if the soil is too dry, and the best time to sort the problem is during spring or autumn when the right conditions occur.

"It's important to avoid smearing and capping of the drainage channels you've created."

Selecting drought-tolerant grass varieties and other deep tap rooted forages can also help producers get more from their grazing and silage leys in dry conditions.

Plant breeding that aims to produce stress-resistant *Festulolium* varieties is on-going at IBERS Aberystwyth University and is showing the potential to offer a grass-based solution to drought.

IBERS' Mike Humphreys says that work looking at increased drought tolerance is a major objective and results have already been promising.

"We have recorded an improvement in water use efficiency in some *festuloliums* of 88%," he says. "Drought resistant lines from the trials are



Mike Humphreys: "Results have been promising"

now being field tested for their suitability for entry into National List trials this year."

Fescue genes

Earlier breeding work has resulted in the first *festulolium* coming onto the England and Wales Recommended Lists for 2012. AberNiche, which is an Italian-type ryegrass x meadow fescue, is now available from British Seed Houses in drought-tolerant seed mixtures.

"We are also working towards the introduction of the beneficial fescue genes into perennial ryegrasses," says Dr Humphreys.

For the time being, the approved and available *festulolium* can be combined in short-term mixtures with Italian or hybrid ryegrasses.

Those seeking a longer term grass-based mixture can consider the inclusion of cocksfoot alongside perennial or hybrid ryegrasses, plus white clover.

Lucerne and chicory are other forage options to consider if your unit is prone to drought or dry conditions, due to their deep tap roots. |

Paul Redmore: "The cows like the chicory and milk well off it"

With more than 70% of milk coming from forage and his costs of production at around 75% of the national average, Paul Redmore's approach to managing the herd at Bicton College in Devon is very forage focused.

The herd of 210 cross-bred cows averages 5,500 litres of high quality milk – butterfat sitting at around 4.8% – and is producing close to 10,000 litres/ha from forage.

With so much depending upon the quality of grazing, Paul adopts a discipline

of reseeding every five years, and – to ensure new leys establish cleanly and well – he avoids following grass with grass.

In terms of new grazing leys, Paul looks no further than the best available UK-bred varieties from the NIAB Recommended Lists, and currently uses the Aber HSG III high sugar perennial ryegrass mixture for his grazing leys. Sown in March/April, he expects a first grazing by mid-June.

In addition to the high sugar ryegrasses and white clover, Paul has also included Puna II perennial chicory in his latest grazing leys.

"The cows have a real appetite for the chicory and milk well off it," says Paul. "But there are other advantages. It has a deep tap root and is therefore relatively drought tolerant, and it helps to alleviate any soil compaction. It also adds variety to the pasture, which I believe helps to increase intakes," he adds.