

drainage

Drainage success in north Kerry

In some places, farmers have what is called 'boys' land' – ground so easy and forgiving that even 'young lads' could farm it. Michael and Donal Keane, who farm in partnership at Drumurrin, Lisselton, Listowel, Co Kerry, definitely don't have 'boys' land'.

These successful dairy producers are farming a layer of peaty soil on top of 'virtually impermeable clay; like a sponge sitting on a saucer. Almost 1.3 metres of rain falls on the fields each year. Add in the fact that the peat is riddled with bog oak, which Donal has spent numerous hours removing with a digger, and you'll understand why local Teagasc adviser John Paul Lenihan says their achievement borders on the heroic.

KEY TIPS

- Do not roll land or work soil unless it's dry.
- Low ground pressure tyres, spreading load (double wheels), good grips (flotation) reduce damage to soil. A large diameter tyre will roll out of a rut much easier than a smaller tyre; wider rim widths and treading will also give more potential for the tyre to revolve. Silage trailer tyre pressures of up to 60psi mean that the side walls of the tyre have to be stiff whereas lower pressure tyres can have a softer/flexible sidewall (carcase), thus reducing damage.
- Using on/off grazing and backfencing reduces damage and there is also potential for zero grazing to be employed to protect land. Adapted balers and zero grazers are better again.
- Existing drains, especially outlets, should be checked and freed where necessary. When cleaning ditches (dykes/gripes), 'basting' or 'smoothing' the side walls of the ditch (while looking better) probably impedes drainage, especially in clayey sites.
- Subsoiling, etc, works best under dry conditions (shattering effect on soil).
- Liming will also improve soil structure in clay soils.

"Improving these fields is fairly painstaking," said Michael "But you don't mind doing it when you know you'll reap the benefits later."

Donal added: "These fields are close to the parlour so improving them is a priority. We drained and reseeded over four hectares in 2011 at a cost of €16,000 and we intend to continue a programme of drainage over the next number of years."

The Keanes plan to expand from 75 cows to about 100 on their 56 hectares, which are split into the main milking block of 34ha, and the remaining outside block of 22ha.

David Trant, also of the Teagasc Listowel office, has wide experience of difficult soils in Kerry. "The silty clay layer below the peat creates an impermeable barrier for water to percolate downwards and causes (at certain times) rising groundwater to appear as springs and seepages in areas where the impermeable layer is thinner or more fractured," he said.

Water from two directions

David Trant has worked closely with Michael and Donal over many years to gradually understand and counteract the drainage problems on their farm. He said: "The Keane farm has been drained over the years with (spaced) drains put in to 'lower the water table' in certain fields, and drains have also been sited to deal with springs and seepages where necessary. These drains are critical to stop the water from underneath 'bursting upwards', but the rainfall finds it difficult to percolate down into this drainage system."

He added: "Farmers on these soils must be exceptionally careful to avoid compaction by machinery or damage due to poorly timed application of farmyard manure. Donal and Michael are part of the Teagasc heavy soils programme which aims to fine tune management of these exceptionally difficult farming situations."



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Michael and Donal Keane, who farm in partnership at Drumur-rin, Lisselton, Listowel, Co Kerry. In the background is a huge pile of bog oak taken from the drained field.



Michael and Donal Keane with Teagasc advisers John Paul Lenihan and David Trant.

Approximate costs

Hire of a track digger is approximately €50/hour or €450 to €500/day and stone is €12/tonne plus VAT. A 100m roll of 3" pipe is about €70 plus VAT and general drainage costs for remedial land drainage works, not including reseeding, are often around €500 to €800 per acre.

Subsoiling, moling and aerating cost between €60 and €120 per acre. Gravel moling is much more expensive. Full drainage, including gravel moling, can be in excess of €1,500/acre.

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Teagasc heavy soils dairy programme

About 30% of the milk produced in Ireland originates from farms classified as having heavy soils

Farms in Clare, Limerick, Tipperary, Kerry and Cork are participating in the Teagasc heavy soils dairy programme. The most efficient and profitable land and pasture-based technologies will be evaluated and demonstrated.

The new programme will explore and communicate the most cost effective and efficient means of increasing profitability on heavy soils through intensive advisory and research initiatives.

Research findings from Solohead drainage trials will be an integral part of the programme.

The programme is a collaborative project between Kerry Agribusiness, Dairygold, Tipperary Co-op and research and advisory personnel from Teagasc.

To date, seven farms, including Michael and Donal Keane, have agreed to participate in the programme.

Over the course of the summer of 2012 all farms were visited to establish soil type, grass utilisation challenges and possible drainage solutions.

This involved having an excavator on site to dig a number of test holes on each farm.

“Farmers are always fascinated by soil profiles, because soils are key to not only management of land but also profitability,” said Ger Courtney of Teagasc, one of the programme coordinators.

“What 2012 confirmed for us is that any drainage system must be robust,” says dairy heavy soils programme manager James O’Loughlin. “That involves not only the drainage itself but, also, like Michael and Donal Keane having good farm infrastructure — farm roads, drinking points, etc.”