

Soil compaction - how bad is it?

EBLEX and DairyCo have developed a new soil assessment tool called '[Healthy Grassland Soils](#)'. This has been designed to take farmers through four steps to assess soil compaction, then suggests what they should do based on the level found.

The tool is being launched with the support of the Catchment Sensitive Farming initiative, which is hosting a series of [events](#) to demonstrate how to use it.

The first was held in Cornwall on 16 October and was hosted at Trewint Farm by Peter and Ashley Rowe. The farm boasts an award-winning South Devon herd of 140 suckler cows, producing breeding stock and cereal-finished bull beef. There are also around 200 breeding ewes.

One field next to the farm buildings is heavily stocked through summer and could possibly suffer from poor soil structure in the top horizon. However, the cattle are wintered indoors, limiting poaching damage in wet conditions. It has a medium-textured soil, not particularly known for compaction problems.

The soil structure of this field was assessed using the tool:



EBLEX livestock scientist Poppy Frater addresses the meeting

Step 1: Surface assessment

This showed good grass tiller density, no water pooling and good ryegrass content. There were no signs of compaction on the surface.

Step 2: Digging a soil pit

A pit was dug in the sward using a spade, leaving one side unbroken. A video demonstration is available on the [DairyCo YouTube channel](#). The soil was extracted, leaving a pit approx 40cm deep.

Step 3: Soil assessment

When the block was pulled apart, there were signs of a slight limiting layer in the top few centimetres, although the roots were managing to go down past 5cm depth.

Step 4: Soil scoring

The soil clumps (known technically as aggregates), were no more than 1cm in size, they easily broke apart with moderate pressure and the edges were rounded. The smell was earthy and there were no signs of waterlogging.

Conclusion

Based on the findings at each step and the guidance charts provided, this soil was assessed as a Score 2

Recommendation

No compaction is currently present. Re-assess after heavy stocking or grazing in wet conditions or yearly in spring.



Event Report

November 2014



Looking for worms

Four or five worms were found in the soil block. More might have been expected but perhaps the dry conditions were making them inactive.

Using the [Opal Earthworm Key](#), two black-headed worms and one lobworm were identified. These are great vertical burrowers, creating channels up to 2m deep, so they are good for water infiltration and rooting.

Second field

At the event a recent reseed was also assessed for soil compaction. The ley was established on 1 August 2014 after being chistle ploughed. It was lightly grazed by cattle in early October and followed a winter barley crop, so it was interesting to see whether there would be a plough pan or not.

On the surface the sward had good density, although a lot of volunteer barley was coming through. Repeating the four-step assessment process, this field scored the top mark of 1.

The soil crumbled and the roots had established well in the highly porous, open structure. There was no sign of a plough pan and there were a few worms.

Perhaps this was not the best farm to demonstrate the new EBLEX/DairyCo soil structure tool, as there were little signs of compaction in the two fields tested.

However, at least Peter and Ashley now know for sure that no remedial action is needed and will not waste time or money doing any.