

Saltash Monitor Farm soil health scorecard

What is the soil health scorecard?

In 2016, AHDB and BBRO funded the five-year [Soil Biology and Soil Health Partnership](#). With its focus on soil health, one ambition is to produce a toolkit to assist with its measurement and management. An output of the project is the development of a soil health scorecard which uses a traffic light system to score soil health indicators. Threshold values are used to score the results as red (requires further investigation), amber (continue to monitor) or green (no action needed). As part of the project, the scorecard was tested on seven experimental sites over a range of soil management histories and soil types. In autumn 2019, Monitor Farm hosts from [Canterbury](#), [Diss](#), [Huggate](#), [Loppington](#), [Pembrokeshire](#), Saltash and [Vale of Belvoir](#) each had six fields sampled and assessed using the scorecard approach. Information on the scorecards on other Monitor Farms can be found on their webpage.

The soil health scorecard at Saltash Monitor Farm

Ashley Jones runs the mixed 190ha Smeaton Farm, part of the Duchy of Cornwall estate. The rotation includes winter wheat, winter barley, oilseed rape, winter oats, maize and potatoes. He also overwinters stubble as part of an entry level stewardship scheme to keep ground cover, which can offer benefits to the soil. The soil ranges from medium loam over shillet to clay soils and he mostly ploughs the ground but a proportion of the cultivation is minimum tillage. As well as the arable rotation, he also has beef and sheep enterprises.

Ashley is an advocate of soil testing and Smeaton Farm is part of a SOYL testing scheme, where the whole farm is tested every four years (pH, P, K). In doing this soil testing, Ashley moved to variable rate application and has subsequently halved spend on P and K whilst maintaining yield.

As a result of regular soil testing, Ashley had a good idea of how his fields would perform in the soil health scorecard and he was pleased with the amount of green scores shown. He adds sewage sludge and FYM to the fields to increase organic matter levels, all of which tested ranged from 5.9%-6.9%.

He expected the earthworm numbers in Opposite Farmhouse to be higher as the field has had a temporary ley, whereas the other fields had not had a ley for over 10 years. The conditions in which the soil sample was taken may have had an effect on the earthworm numbers shown, so subsequent checks are advised to see if the counts increase to what was expected. Ashley will follow up by digging a hole to check for earthworms as advised by the amber classification.

When doing earthworm counts, it can also be informative to classify the earthworm types. Each earthworm type provide a different role and occupy different layers within the soil profile; epigeic (litter-dwelling), endogeic (topsoil), anecic (deep burrowing). More information can be found in the [How to count earthworms](#) publication.

The scorecard will be used at Saltash Monitor Farm as a visual tool to aid discussions in future Monitor Farm meetings.

Soil health scorecard – Autumn 2019

Field name	Great Hays	Hem Park (medium)	Hem Park (heavy)	Opposite farmhouse	Tree Hill	Middle Park
Current crop	WW Stubble*	WW Stubble*	WW Stubble*	Temporary ley	SBa Stubble*	WOSR
Texture	Clay	Clay	Clay	Clay	Clay	Clay
% clay	59	64	59	64	53	59
pH	6.5	6.7	6.2	6.7	6.6	6
SOM %	6.5	6.4	6.5	6.9	6.5	5.9
Ext P (mg/l)	12	37	27	11	18	46
Ext K (mg/l)	167	185	189	105	156	165
Ext Mg (mg/l)	64	45	84	53	35	49
PMN (mg/kg)	54	43	42	47	69	30
CO ₂ -burst (mg/kg)	99	137	154	123	143	115
VESS	2	2	2	2	2	2
Earthworms (No/pit)	5	5	9	8	8	10

*uncultivated

Further information

[Principles of soil management](#)

[Field drainage guide](#)

[Arable soil management: cultivation and crop establishment](#)

[Introduction to soil biology](#)

[How to count earthworms](#)

[Soil Biology and Soil Health Partnership](#)

[Testing the soil health scorecard](#)

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