

Strategic Farm West project overview

Headlands trial 2018-19

Background and trial aim

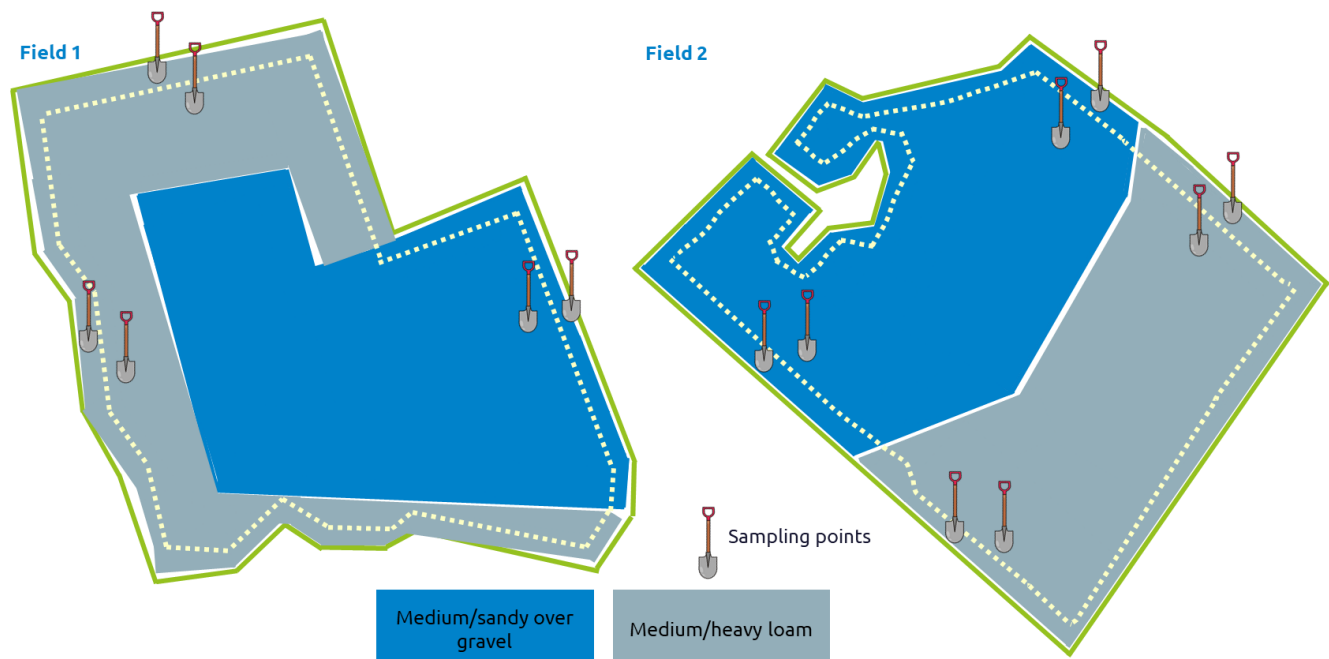
Research studies have reported that due to soil over-compaction, average winter wheat yields can be reduced by 14% on field headlands. Furthermore, headlands can be associated with 8% of erosion events. The aim of this trial is to determine whether yield is reduced on the headlands and whether different cultivation strategies can alleviate these differences.

Methodology

Field sites and treatments

Location: Strategic Farm West, Squab Hall Farm, Harbury Lane, Leamington Spa, Warwickshire CV33 9QB

Trial design



Field 1

- Area (hectares): 5.5
- Harvest 2019 crop: oilseed rape

Field 2

- Area (hectares): 13.4
- Harvest 2019 crop: winter wheat var. Kerrin

- Soil types: medium/sandy over gravel, and medium/heavy loam
- Crop establishment: deep tine to 6 inches across the field, deep tine to 10 inches on 15m headlands, Vaderstad Carrier discs, drill and roll.

Assessments

The field has been split into sampling zones to correspond with each treatment area and to take account of soil variation. Within each zone, three sampling points will be identified corresponding to the maximum, median and minimum penetrometer resistance measurements to a depth of 30cm. Each sampling point will be marked and future assessments taken from within a 10m radius.

Soil

- Spring 2019
- Soil health, including topsoil bulk density (5-10cm depth), VESS, earthworm counts, microbial biomass C
- Visual evaluation of soil structure (VESS)

Rooting

- Shovelomics: excavate the crop and the top 20-30cm of soil and assess root crown (number of tillers, nodal roots per tiller) and biomass.
- Root cores: soil cores between flowering and grain fill in wheat to complete root scanning and root biomass assessments.

Crop

- At GS30, GS31-33, GS39, GS61-65 and pre-harvest
- Biomass and tissue testing



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More information

- Lead partners: Christina Clarke and Anne Bhogal, ADAS.
- Practical information on soil management and soil assessment methodologies can be found online ahdb.org.uk/greatsoils

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