

Strategic Farm West project overview

Disease trial 2018-19

Background

In order to maintain activity of fungicides and disease control there needs to be a step-change in the way cereal fungicides are used. AHDB already plays a key role in fungicide anti-resistance through monitoring and research of key diseases to develop the most effective anti-resistance strategies, including more resistant varieties. The AHDB Recommended Lists have raised minimum standards for variety disease resistance which potentially enables the reduced use of, and thus reduces pressure on, fungicides.

Aim

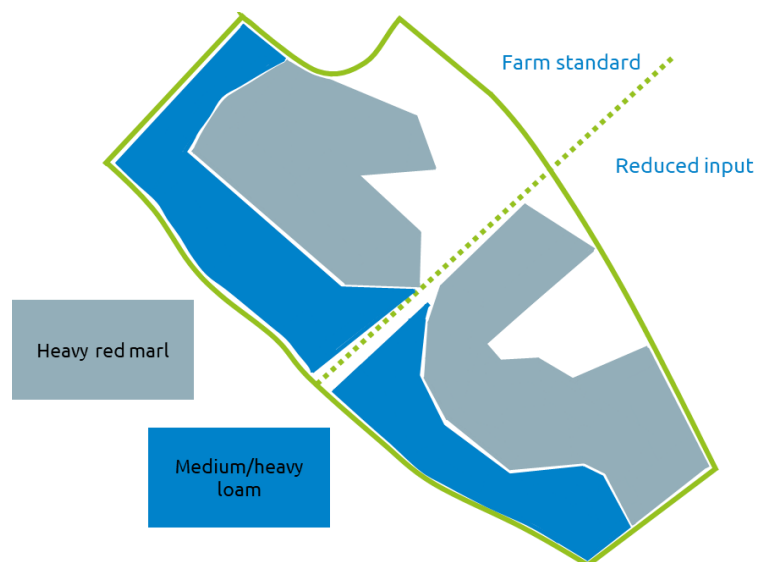
The aim of this demonstration is to determine the effect of reduced input regimes and cost of production to promote stewardship and raise awareness of practical anti-resistance measures.

Methodology

Field site and treatments

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

- Area (hectares): 17.77
- Harvest 2018 crop: spring beans
- Harvest 2019 crop: winter wheat var. Graham
- Soil types: heavy red marl and medium/heavy loam
- Crop establishment: deep tine to 8 inches, Vaderstad Carrier discs, drill and roll



Trial design

- Split field comparison looking at farm standard crop protection versus reduced input

Farm standard

Dressed seed
Conventional treatment programme

Reduced input

Programme of insecticides and fungicides in response to disease development

Assessments

The field has been split into four sampling zones to correspond with each treatment area. 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.

Two major soil types have been identified in the field and assessments will be undertaken in both soil types.

Soil

- Spring 2019
- Soil health, including topsoil bulk density (5-10cm depth), VESS, earthworm counts, microbial biomass C, nematodes
- 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
- Disease assessments: foliar, stem, ear.



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More information

- Lead partners: Christina Clarke and Anne Bhogal, ADAS.
- AHDB develops practical tools for disease forecasting and fungicide performance. More information is available [online](https://cereals.ahdb.org.uk/research/disease-research) at cereals.ahdb.org.uk/research/disease-research
- The encyclopaedia of cereal diseases is the definitive guide to cereal diseases in the UK and contains full colour photographs for identification plus information on hosts, symptoms and life cycles ([online](#)).
- Fungicide futures is a joint initiative led by AHDB and FRAG-UK to help put good anti-resistance practice at the heart of fungicide programmes ([online](#)).

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