

# P2007349: Assessment and analysis at AHDB Strategic Cereal Farms

## Strategic Cereal Farm Scotland: Work package 12 – Pests and natural enemies

### 12.1 Background

Developing sustainable IPM systems that reduce reliance on conventional pesticides and minimise environmental impact is a key driver in AHDB research.

Managing pests while encouraging and supporting beneficial insects is an essential part of an IPM strategy and is a key component of sustainable crop production.

The number of available insecticides is declining, so it is increasingly important to use them only when absolutely necessary to safeguard their longevity. The Sustainable Use Directive (2009/128/EC) lists a number of provisions aimed at achieving the sustainable use of pesticides, including the promotion of low input regimes, such as integrated pest management.

As detailed in The Encyclopaedia of pests and natural enemies, a suite of regulating organisms is needed for control of a crop pest during each life stage. Strategic Cereal Farm Scotland is a large mixed farm, with the arable enterprise currently being managed conventionally. During the Strategic Farm programme, the aim is to explore ways to reduce artificial inputs, including encouraging beneficials on farm.

**Aim:** To baseline the biodiversity on farm, including the prevalence of pests, pollinators and natural enemies.

### 12.2 Design

#### *Field sites and treatments*

8 fields totalling 102.5 hectares

Field number	Area (hectares)	2019 harvest crop	2020 harvest crop	2021 harvest crop	Zone	Variety
1. Castle Park	14	Spring Oats	Spring Barley	OSR	A	Laureate
2. Tile Park	12	Wheat	Cauliflower	Winter Wheat or Winter Oats	A	
5.Horse Park	9	Winter Oats	Spring Barley	Spring Barley	A	Laureate
6. Top Boiler Well & Top Strip	12.5	Potatoes	Winter wheat	Spring Beans	B	Revelation
7.Bottom Boiler Well & Bottom Strip	11.5	Winter Wheat	Cauliflower	Winter Wheat or Winter Oats	B	
10. Inchcurr Gas bank	20	Winter Oats	Spring Barley	Kale/Summer cover crop	B	Laureate

11. Tank Wilson's March	13.5	Summer cover crop after carrots	Winter Oats	Winter Wheat	B	
12. East Bank Treaton	20	Winter Wheat	Kale/Summer cover crop	Spring Oats	B	

### 12.3 Assessments

Assessments should be completed using a sampling methodology appropriate to generate robust data on-farm. Proposals should consider the aim of the Strategic Cereal Farms which is to test research in a commercial situation and provide farmers with practical ways of conducting their own on-farm testing and assessments.

The following key pest species have been identified using the [AHDB Encyclopaedia of pests and natural enemies in field crops](#). Applicants should propose appropriate assessments and sampling strategies which take account field characteristics.

- Key pest species in cereals, including but not limited to: wireworms, leatherjackets, slugs, aphids, wheat bulb fly, orange wheat blossom midge, gout fly, frit fly
- Natural enemies of key pest species
- Pollinators

Assessments should be completed across the farmed landscape including in crop and in field boundary, and should include:

- Pest pressure
- Abundance and diversity of beneficial species (natural enemies of crop pest, crop pollinators)