

Final Project Summary

Project title	Cabbage stem flea beetle live incidence and severity of damage monitoring (2015)		
Project number	2140038118	Final Project Report	PR551
Start date	15 August 2015	End date	31 October 2015
AHDB Cereals & Oilseeds funding	£14,975	Total cost	£14,975

What was the challenge/demand for the work?

In December 2013, neonicotinoid seed treatments were withdrawn across all EU Member States, following the conclusions of a review by the European Food Safety Authority (EFSA) which looked at the risk to bees. Autumn 2014 was the first season in which winter oilseed rape was planted without the use of these seed treatments in the UK, and there were major concerns within the agriculture sector that the withdrawal of neonicotinoids would cause a particular problem for the control of cabbage stem flea beetle (CSFB) in winter oilseed rape. In September 2014, a snapshot survey of CSFB damage was conducted by ADAS, with assessments done by AICC, on behalf of AHDB Cereals & Oilseeds, to assess CSFB damage levels across counties in England and Scotland at the end of September 2014. This brief report was subsequently used by AHDB and other industry stakeholders to provide evidence to the EU on the impact of the withdrawal.

Autumn 2015 marks the second season for which neonicotinoid seed treatments have not been available for use on the vast majority of oilseed rape crops. In order to further understand the impacts of the second year of the neonicotinoid restrictions on the levels of cabbage stem flea beetle (CSFB) damage to oilseed rape crops, a live monitoring survey of adult CSFB damage was conducted in counties across England, Scotland and Wales.

Aim: To provide detailed and structured evidence on the level of CSFB damage on winter oilseed rape crops that have not received a neonicotinoid seed treatment, providing a second year of data to add to that collected by ADAS in 2014.

How did the project address this?

Data was collected using a network of 56 Association of Independent Crop Consultants (AICC) reporters, across 42 counties. Each agronomist was provided with a questionnaire based on the CSFB treatment thresholds set out by AHDB Cereals & Oilseeds in Information Sheet 43, and was asked to report oilseed rape crop damage and loss as a result of CSFB once 75% of the crops they walk had reached the cotyledon–two leaf growth stage (Assessment 1) and once again when 75% of their crop had reached the three–four leaf growth stages (Assessment 2). Damage assessments were

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completed by estimating what proportion of the crop area walked fell into each of the five damage categories: no damage, low (less than 24% leaf area lost), moderate (25–49% leaf area lost), high (50–75% leaf area lost) and severe (more than 75% of the leaf area lost).

Data from each agronomist was then collated and analysed in MS Excel. In order to calculate the county level impacts, the data from each agronomist reporting in that county was combined to calculate the total area of crop assessed in that county in each of the damage categories. In order to calculate the regional and national impacts, the county level impacts were weighted according to the area of winter oilseed rape grown in the county. Any potential reasons for crop loss that were not related to CSFB, or where losses were exacerbated by CSFB were captured.

What outputs has the project delivered?

A total of approximately 62,000 ha of oilseed rape was assessed in this survey, which equates to just under 11% of the total UK winter oilseed rape area. CSFB damage was present on an estimated 65% of crops at cotyledon to two true leaves and 69% of crops between three to four true leaves nationally. The reports identified that the susceptibility of a winter oilseed rape crop to CSFB attack was influenced by a number of factors including:

- Adult CSFB activity, which was higher during mild, fine weather,
- The timing of drilling, with crops that were earlier drilled tending to have suffered less damage, as later sown crops were slower to grow and establish and therefore remained vulnerable to attack for longer,
- Seedbed quality and consolidation,
- Previous history of CSFB attack in the area and,
- The proximity to other oilseed rape crops.

The level of crop loss due to CSFB at Assessment 1 was 0.8% of the assessed area, equivalent to 5000 ha of oilseed rape at the national scale. This rose slightly to 1.0% of the assessed area at Assessment 2, equivalent to 6000 ha of winter oilseed rape lost at the national level. There was a degree of variance in the level of crop loss to CSFB across the UK, with some counties unaffected and other counties seeing up to 9% of the county crop area lost. CSFB were not the only cause of crop losses this season with an additional 1.9% of the assessed area, equivalent to 11,000 ha at a national scale, reported as lost at Assessment 1 and an additional 3.1% reported as lost in Assessment 2 equivalent to 18,000 ha, due to other reasons, in particular slug damage.

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Nationally, the majority of crops at both Assessment 1 (78%) and Assessment 2 (96%) had levels of damage below the current treatment threshold at that assessment timing. There was, however, some county variation in terms of the proportion of crops affected by CSFB and the level of damage received. The worst affected counties in 2015 (Figure 1), with regards to crop area lost were Buckinghamshire, Cambridgeshire, Essex, East Yorkshire, Suffolk, Lincolnshire, Northamptonshire, North Yorkshire, Hampshire and Bedfordshire.

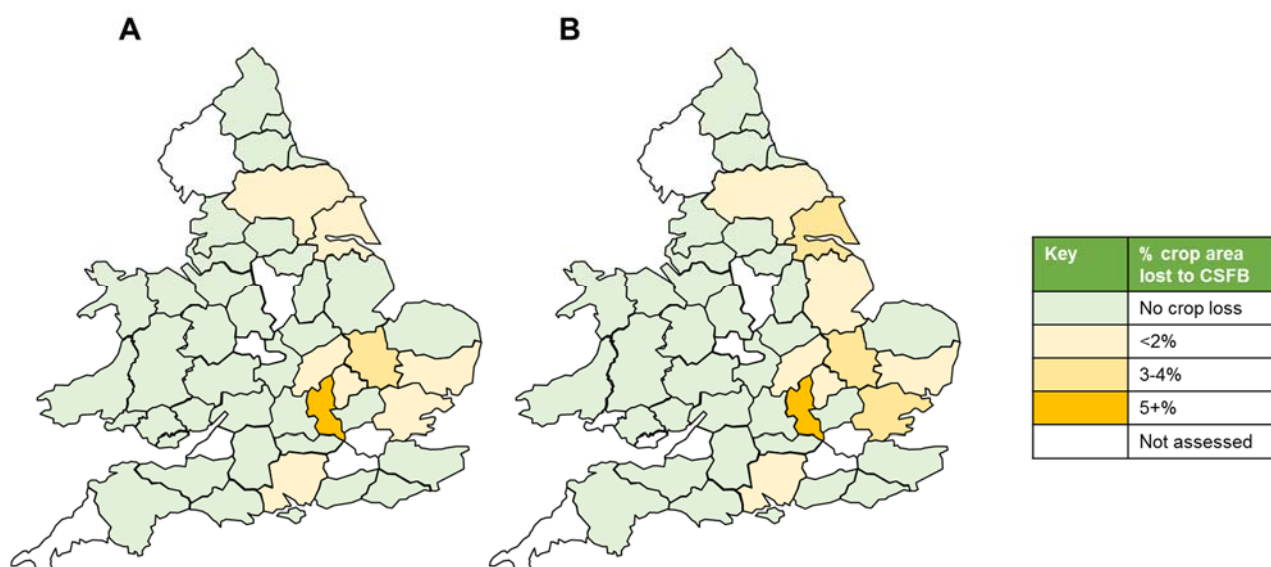


Figure 1. Map showing hotspots of crops lost to CSFB at assessment 1 (A) and at assessment 2 (B) – percentages are proportion of county area lost

Who will benefit from this project and why?

The work is aimed at helping levy payers understand the potential impact of CSFB in their county/region and providing an independent view of CSFB damage at a regional and national scale. It also provides a robust and independent assessment of crop condition and the impacts of CSFB at two points early in the winter oilseed rape growing season, which could help assist policy makers with decision making.

If the challenge has not been specifically met, state why and how this could be overcome

Lead partner	Sarah Wynn, ADAS
Scientific partners	
Industry partners	Association of Independent Crop Consultants (AICC)
Government sponsor	

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