





Webinar 29th July 2021

Leafy Vegetable Crops Pest Update

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Outline of topics to be covered

Review of the 'pest year' so far:

- Beetles flea beetles and cabbage stem flea beetle
- Aphids suction trap captures
- Flies bean seed fly and swede midge
- Caterpillars diamondback moth and silver Y moth
- Question: what is your most concerning pest problem this year?
- Question: what is your most concerning pest problem taking all years into account?



Flea beetles – *Phyllotreta* species

- 8 species feed on cruciferous/brassicaceous crops and weeds in the UK - tend to be considered together.
- The older literature says that the period of greatest activity is from 10th April – 20th May – but more recently damage appears to have occurred over a much more extended period than this.
- The older literature suggests that the flea beetle population in any field is a drifting one and that different species dominate in different parts of the country.







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Flea beetle trap captures - Wellesbourne





SCEPTREplus trial 2021 – Wellesbourne

Pak Choi: sown 24 April and planted 19 May









Counts after first spray on 28 May – assessed on 1-2 June







Beetle counts after second spray on 11th June







	Trap crops - delay destruction of volunteers. Possible that sown trap crops & cover crops may be effective too. Varietal choice: •Suitable characteristics (e.g. autumn vigour, spring vigour, stem strength).	•
-sowing	Increased tolerance or resistance (e.g. low glucosinolate content, HEAR). Seed treatments Stubble management - does leaving stubble reduce or increase CSFB damage? Improve activity of natural enemies. Novel insecticides/biopesticides.	
	 Sow date Early sowing so that crop is beyond emergence stage by the time CSFB migration starts. 	•
owing	 Late sowing (second half of September) to reduce larval pressures and potentially reduce adult damage by emerging after the peak of CSFB migration. 	•
	 Ensure sowing occurs when soil moisture is suitable. Establishment method – does direct drilling improve crop tolerance to CSFB? Seed rate – small increases may reduce risk of suboptimal plant populations. Companion crops. 	•
olishment	 Organic amendments – mask crop from CSFB, deter CSFB or improve crop establishment. Improve activity of natural enemies. Novel insecticides/biopesticides. 	•
tumn/ vinter	 Crop defoliation with topper, sheep or rolling to reduce larval populations. Improve activity of natural enemies. Novel insecticides/biopesticides. 	:
pring	 Improve crop tolerance to larval damage (e.g. with nutrition and PGRs) Improve activity of natural enemies. Novel insecticides/biopesticides. 	•

Potential components of an IPM strategy for cabbage stem flea beetle



Reliable control – possibly with some further research needed



Moderate control with further research needed



Control not proven and significant further research needed

AHDB research ADAS & Harper Adams



Aphids – 2021 versus 2020







Aphids – 2021 versus 2020



Question: has it been a 'quiet' year for aphids so far?

Estimates of the day of year of 5% *Myzus persicae* catch (DOY₅) at 1km² resolution across the UK



Result of collaboration between scientists in the Met Office's Vegetation-Climate Interactions group, the Rothamsted Insect Survey (RIS), University of Warwick, Defra and SASA.

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Uses UK climate data and aphid monitoring results from RIS sites across the UK.

Question: can you see potential for using this type of presentation of information?



Becca McGowan PhD – bean seed fly

- Can trapping information be used to indicate periods of high risk?
- Can historical information on bean seed fly activity be used to develop a day-degree forecast?
- How does bean seed fly spend the winter and can an understanding help with forecasting?
- Are there cultural management approaches that might be feasible?







Bean seed fly – Trapview traps





AHDB Strategic Centre grower-led work – bean seed fly



- All EAMUs for Force expire on 31/12/21
- Re-registration of Force is likely to result in only 13g of a.s. being permitted from 2022 (sugar beet rate). Currently onions are treated with 29g a.s./ha.
- Trial to treat natural and pelleted brown onion seed with standard commercial rate (29g/ha) and reduced rate (13g/ha) Force plus untreated control at 3Ms growers in Suffolk. Elsoms applied the appropriate treatments.
- Randomised, replicated trial with 4 replicates of each treatment.
- Trial drilled and assessed by Bruce Napier, NIAB.
- 2m² area of each plot counted at emergence and thereafter weekly through to end May to ascertain plant loss.
- Bean seed fly trap located within the trials.
- Data currently being analysed.



Swede midge monitoring network 2021

Trap locations	Sites	With counts >3	
		per week	
Lancashire	3	0	
Lincolnshire	3	0	
Midlands	7	2	
South	8	6	
Scotland	Low counts so far		









Management (from USA)

- Proper management incorporates as many strategies as possible and should minimally include:
 - Use of clean transplants
 - 2- to 3-year rotation to non-brassica crops structure of rotation depends on life-cycle of crop versus life-cycle of pest - which may fly 0.5 km or more
 - Post-harvest crop destruction
 - Weeds can be hosts e.g. Shepherd's purse. Same applies to brassicaceous cover crops.
 - Swede midge detection and monitoring
 - Insecticide applications as needed



Silver Y moth







Silver Y moth – citizen science counts 2021





Diamondback moth







Diamondback moth – citizen science counts 2021





Diamondback moth – citizen science counts 2021







Question: have caterpillars been a problem for you so far this year?







- European H2020 Thematic Network
- Coordinated by INAGRO, Belgium
- Focusing on cross regional knowledge sharing of SMART IPM solutions for vegetable farmers and advisors
- 15 partners
- In short SMART approaches to IPM!!!

SMARTprotect survey – thank you!



How informed are you about using SMART tools and methods for plant protection?



How important is it to use SMART tools and methods for plant protection?





Factors hindering the use of smart IPM tools and methods for plant protection



Trapview traps

- Would you like to host a Trapview trap for diamondback moth or bean seed fly?
- Part of the Smartprotect project
- No cost but need to change sticky inserts and lures at intervals
- Email <u>rosemary.collier@warwick.ac.uk</u>









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