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Making the most of the AHDB Recommended List for Oilseed Rape (OSR)

Jenna Watts, AHDB

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Outline

- How are varieties recommended?
- Recommended List for 2018/19
- Verticillium wilt
- RL have your say (discussion)

How are varieties recommended?

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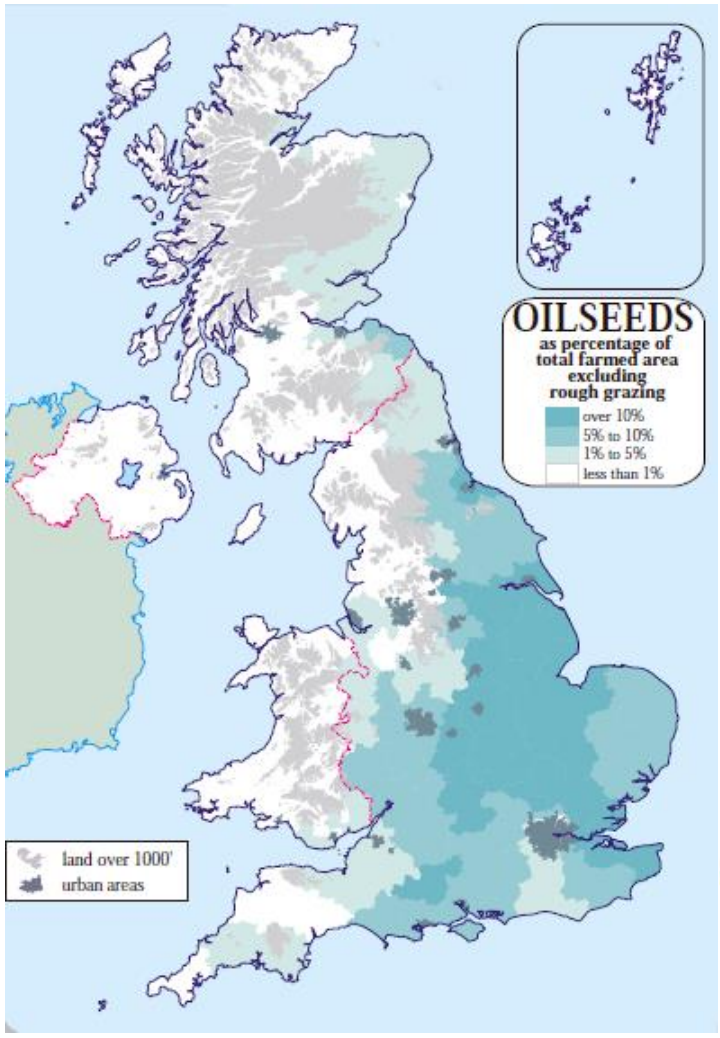
Trials



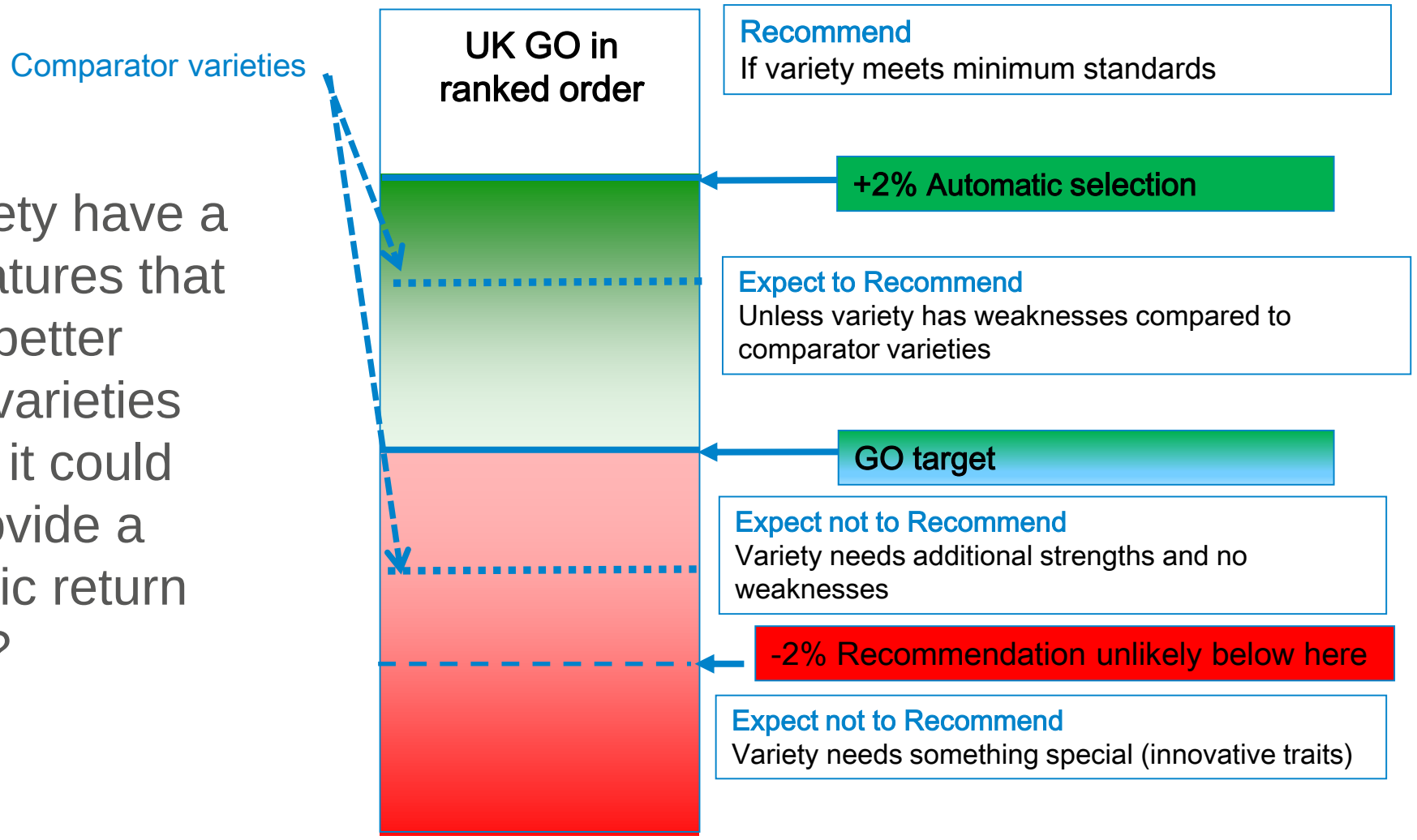
Winter OSR trial locations for harvest 2018

Criteria for selecting a new variety

		Minimum standards	NL 2 Candidate selection	Recommendation
		All variety types	All variety types	All variety types
UK	Treated gross output			
	Target		Mean GO of the top three yielding varieties in RL trials UK	Mean GO of top three yielding recommended varieties in RL trials UK
East/West	Regional target		Mean GO of the top three yielding varieties in RL trials East/West Region	Mean GO of the top three yielding recommended varieties in RL trials East/West Region
North	Regional target		Mean GO of the top three yielding varieties in RL trials North Region	Mean GO of the top three yielding recommended varieties in RL trials North Region
	Automatic level[2]		Target + 2	Target + 2
	Minimum guideline		Target - 2	Target - 2
	Agronomic merit			
	Target		Target #	
UK	Regional treated gross output		high	high
UK	Resistance to lodging	6 (minimum)	&	high
UK	Stem stiffness		&	med
UK	Shortness of stem		high	high
UK	Earliness of flowering		med	med
East/West	Earliness of flowering		low	low
North	Earliness of flowering		med	med
UK	Earliness of maturity		high	high
UK	Seed yield			low
UK	Oil content			low
UK	Glucosinolate content	18 (maximum)		
UK	Light leaf spot	6[2] (minimum)	&	v high
East/West	Light leaf spot	3[2] (minimum)	&	v high
North	Light leaf spot	6 (minimum)	&	v high
UK	Stem canker	3[2] (minimum)	&	high
East/West	Stem canker	3[2] (minimum)	&	high
North	Stem canker	3[2] (minimum)	low	low
UK	Tolerance to Imidazolinone (IMI) herbicides		low	Low

Criteria for Recommendation

Does the variety have a balance of features that is sufficiently better than existing varieties and such that it could potentially provide a more economic return in the market?



OSR Recommended List 2018/19

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New single UK list for winter OSR

Winter oilseed rape 2018/19

Yield, quality, agronomy and disease resistance

	Recommended for the UK (both East/West and North regions)							Recommended for the East/West region only					Recommended for the North region only									Described varieties	
	Alizze	Nikita	V 316 OL ~	Campus	Architect ¥	Mentor $	DK Secret #	Windozz	Elgar	Flamingo	Wembley	Aquila	Elevation	Kielder	Broadway	Butterfly	Barbados	Anastasia	SY Hamas	V 324 OL ~	Average LSD (5%)	Ergo †	DK Imagis-CL &
Variety type	RH	Conv	RH	Conv	RH	RH	RH SD	RH	Conv	Conv	RH	RH	Conv	Conv	Conv	Conv	Conv	Conv	RH	RH		RH	RH
Scope of recommendation	UK	UK	UK	UK	Sp	Sp	UK	E/W	E/W	E/W	E/W	E/W	N	N	N	N	N	N	N	N		E/W	N
			C	C	NEW								NEW	NEW	NEW	NEW			*	*			
Gross output, yield adjusted for oil content (% control)																							
United Kingdom (5.4 t/ha)	**105**	**105**	**105**	**104**	**102**	**99**	**97**	106	106	105	105	104	103	102	100	103	98	101	101	101	4.5	93	92
East/West region (5.4 t/ha)	**105**	**105**	**105**	**104**	**102**	**99**	**98**	**107**	**107**	**105**	**105**	**105**	102	101	99	102	97	[100]	100	101	4.8	**94**	[92]
North region (5.6 t/ha)	**105**	**105**	**102**	**106**	**99**	**96**	**95**	[102]	[100]	105	[102]	102	**107**	**107**	**107**	**106**	**106**	**105**	**103**	**102**	6.1	92	**95**
Seed yield (% control)																							
United Kingdom (5.0 t/ha)	**105**	**104**	**105**	**104**	**103**	**98**	**99**	107	106	104	105	104	103	101	100	103	99	102	102	101	4.2	94	93
East/West region (5.0 t/ha)	**105**	**104**	**105**	**103**	**103**	**98**	**99**	**108**	**107**	**104**	**105**	**104**	102	101	99	102	98	[102]	102	101	4.5	**94**	[92]
North region (5.2 t/ha)	**104**	**104**	**102**	**105**	**100**	**95**	**97**	[103]	[100]	104	[103]	103	**107**	**105**	**106**	**106**	**106**	**106**	**105**	**101**	5.8	92	**96**
Agronomic features																							
Resistance to lodging (1-9)	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	0.2	8	8
Stem stiffness (1-9)	8	8	8	8	8	9	9	8	8	8	8	8	8	9	8	8	8	8	7	8	0.4	8	8
Shortness of stem (1-9)	6	7	6	6	6	7	9	7	6	7	6	6	7	6	6	7	6	7	7	6	0.2	6	6
Earliness of flowering (1-9)	8	7	7	6	6	7	7	8	7	6	8	7	5	7	6	6	5	6	7	6	0.3	6	5
Earliness of maturity (1-9)	5	5	5	5	6	5	5	5	6	5	6	5	5	5	4	4	4	5	5	5	0.4	5	5
Seed quality (at 9% moisture)																							
Oil content, fungicide-treated (%)	46.0	46.2	45.7	45.7	45.1	46.2	44.5	44.8	45.4	46.2	45.2	45.6	45.8	46.3	45.7	45.7	45.2	44.8	44.4	46.2	0.2	45.4	45.3
Glucosinolate (µmoles/g of seed)	13.0	9.5	12.9	11.2	14.4	10.2	10.7	10.6	10.5	12.0	12.3	12.0	10.6	13.3	8.2	10.2	12.0	11.1	12.3	9.9	-	12.3	11.7
Disease resistance																							
Light leaf spot (1-9)	7	7	6	6	6	6	7	5	7	7	7	6	6	7	7	6	7	7	6	7	0.8	5	6
Stem canker (1-9)	5	4	5	6	5	3	8	5	6	4	5	8	4	3	4	7	7	6	4	4	0.9	4	5

Varieties no longer listed in the East/West region: Amalie, Angus, Arazzo, Fencer, Harper, Incentive, Picto, Popular, SY Harnas, Trinity and Troy.

Varieties no longer listed in the North region: Amalie, DK Exentiel, DK Explicit, PT234 and Troy.

On the 1-9 scales, high figures indicate that a variety shows the character to a high degree (eg high resistance).

The target (spring) plant population is 40 plants/m^2 for RL trials. Maximum seed rate is 70 seeds/m^2 and may be lower if conditions permit.

Glucosinolate contents are taken from the National List trials data.

Winter oilseed rape:
New TuYV resistant variety

	New
	Architect
	UK (TuYV)
UK gross output	**102**
E/W gross output	102
N gross output	99
Lodging	8
Stem stiffness	8
Shortness of stem	6
Earliness of maturity	6
Stem canker	5
Light leaf spot	6

Gross output controls: 5.4 t/ha (UK), 5.4 t/ha (E/W), 5.6 t/ha (N)

Turnip Yellows Virus (TuYV)

- The most important viral disease of oilseed rape in the UK
- Can decrease yields by up to 30%
- The virus is present throughout the UK but its prevalence is variable from year to year

Early symptoms of TuYV are intense purpling of leaves; later symptoms (interveinal yellowing and reddening of leaf margins) are not usually expressed before stem extension and can easily be confused with other stress symptoms and nutritional deficiencies.

Spring oilseed rape: new described varieties

	New			
	Lumen	**Axana**	**Builder**	**Dodger**
UK gross output	[105]	[98]	102	102
Shortness of stem	7	6	6	6
Earliness of maturity	7	5	5	5

Gross output of controls: 3.2 t/ha

OSR Recommended List 2018/19 Summary

- New single UK list for winter OSR
- Architect marks a step forward for TuYV resistant varieties
- Two new spring OSR varieties on the described list

Verticillium wilt

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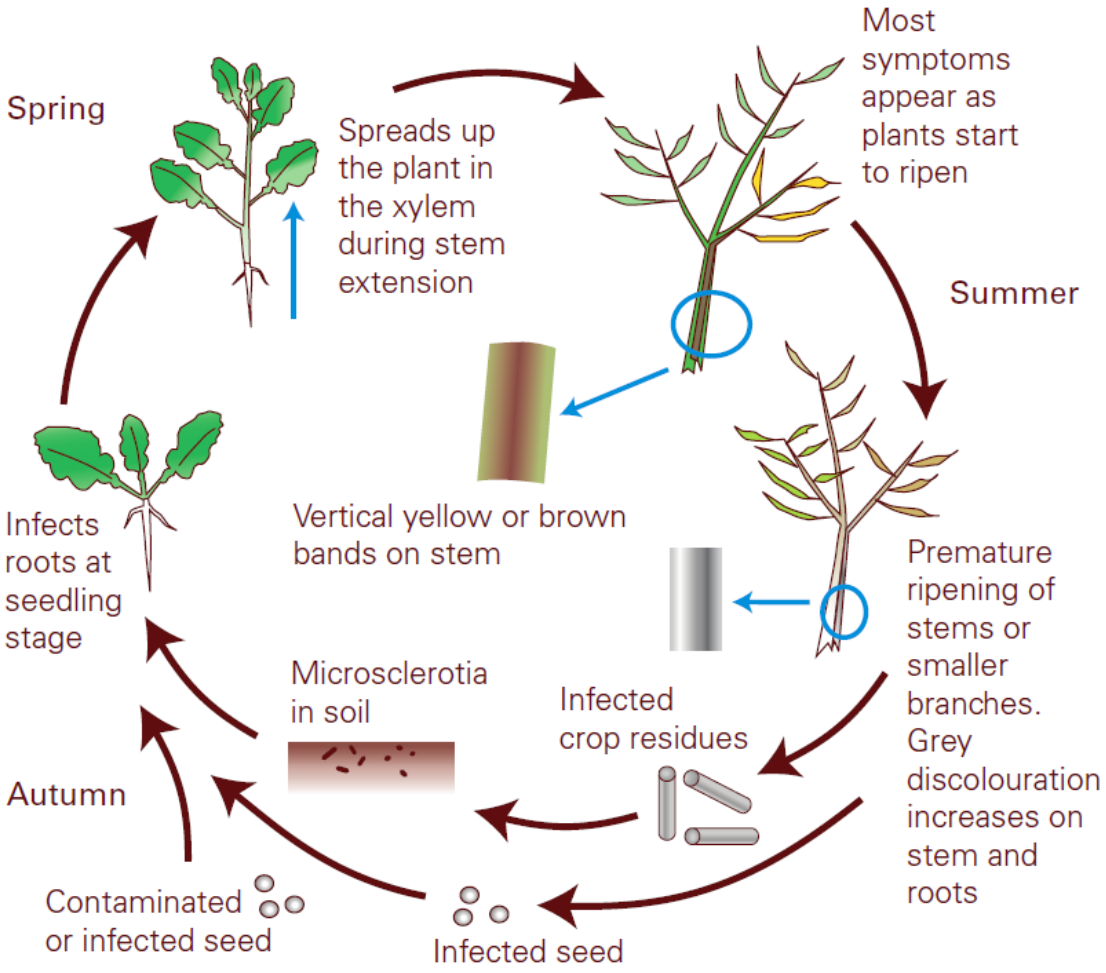
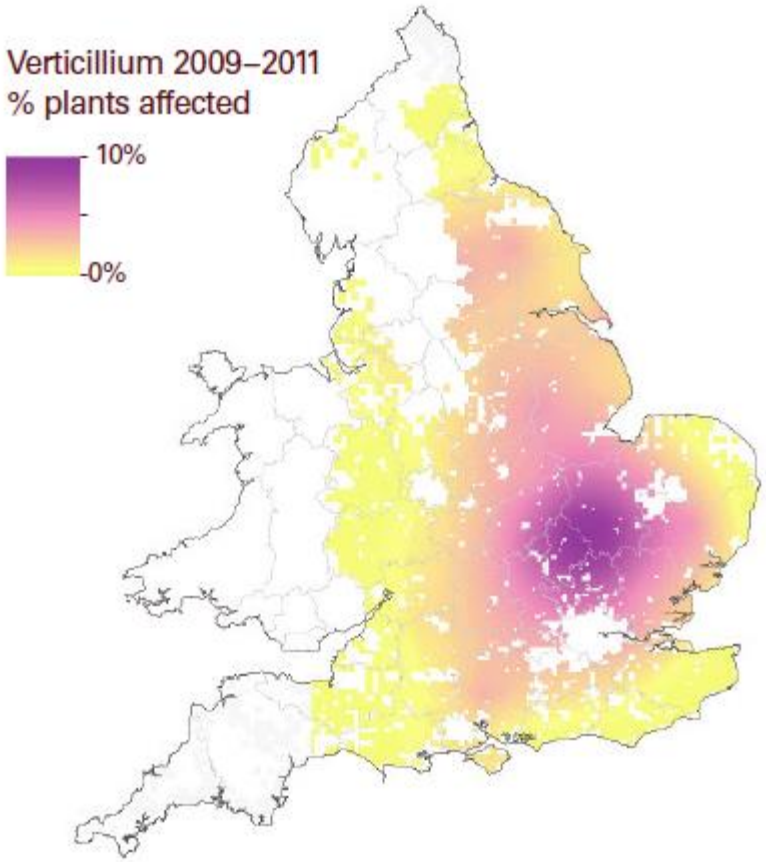
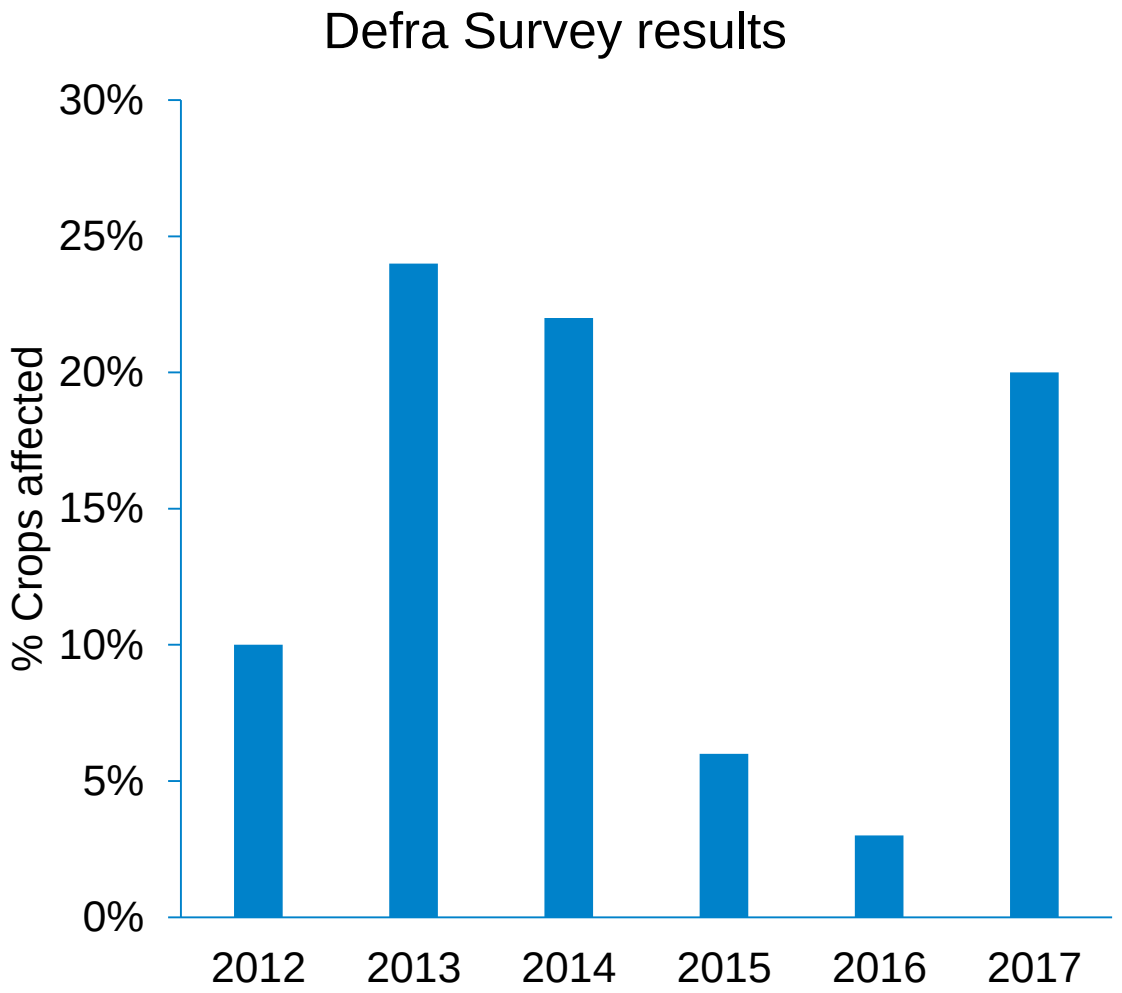
Verticillium wilt



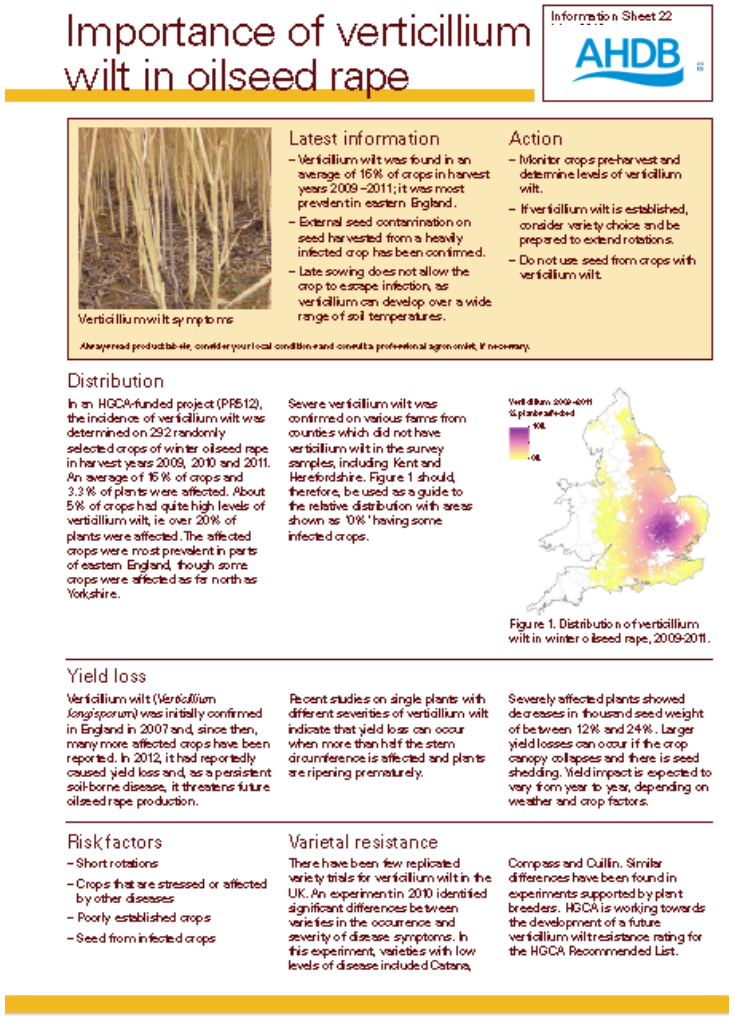
Verticillium incidence





Managing verticillium

- Monitor crops for disease pre-harvest
- If verticillium wilt is established:
  - Consider variety choice
  - Be prepared to extend rotations
- Do not use seed from crops with verticillium wilt



Importance of verticillium wilt in oilseed rape

Information Sheet 22

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Verticillium wilt symptoms

Latest information

- Verticillium wilt was found in an average of 16% of crops in harvest years 2009–2011; it was most prevalent in eastern England.
- External seed contamination on seed harvested from a heavily infected crop has been confirmed.
- Late sowing does not allow the crop to escape infection, as verticillium can develop over a wide range of soil temperatures.

Action

- Monitor crops pre-harvest and determine levels of verticillium wilt.
- If verticillium wilt is established, consider variety choice and be prepared to extend rotations.
- Do not use seed from crops with verticillium wilt.

After spread predictable, consider your local condition and consult a professional agronomist, if necessary.

Distribution

In an HGCA-funded project (PR512), the incidence of verticillium wilt was determined on 292 randomly selected crops of winter oilseed rape in harvest years 2009, 2010 and 2011. An average of 16% of crops and 3.3% of plants were affected. About 5% of crops had quite high levels of verticillium wilt, ie over 20% of plants were affected. The affected crops were most prevalent in parts of eastern England, though some crops were affected as far north as Yorkshire.

Severe verticillium wilt was confirmed on various farms from counties which did not have verticillium wilt in the survey samples, including Kent and Herefordshire. Figure 1 should, therefore, be used as a guide to the relative distribution with areas shown as '0%' having some infected crops.

Figure 1. Distribution of verticillium wilt in winter oilseed rape, 2009-2011.

Yield loss

Verticillium wilt (*Verticillium longisporum*) was initially confirmed in England in 2007 and, since then, many more affected crops have been reported. In 2012, it had reportedly caused yield loss and, as a persistent soil-borne disease, it threatens future oilseed rape production.

Recent studies on single plants with different severities of verticillium wilt indicate that yield loss can occur when more than half the stem circumference is affected and plants are ripening prematurely.

Severely affected plants showed decreases in thousand seed weight of between 12% and 24%. Larger yield losses can occur if the crop canopy collapses and there is seed shedding. Yield impact is expected to vary from year to year, depending on weather and crop factors.

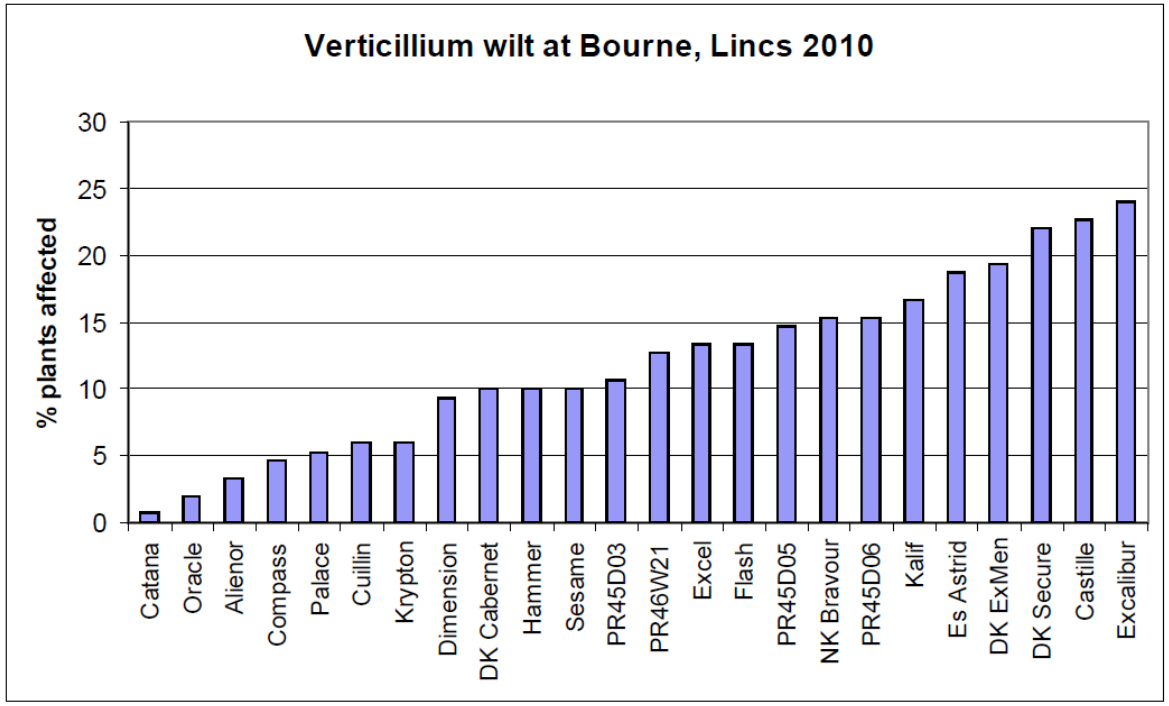
Risk factors

- Short rotations
- Crops that are stressed or affected by other diseases
- Poorly established crops
- Seed from infected crops

Varietal resistance

There have been few replicated variety trials for verticillium wilt in the UK. An experiment in 2010 identified significant differences between varieties in the occurrence and severity of disease symptoms. In this experiment, varieties with low levels of disease included Catana, Compass and Cuillin. Similar differences have been found in experiments supported by plant breeders. HGCA is working towards the development of a future verticillium wilt resistance rating for the HGCA Recommended List.

Importance and management of verticillium wilt in winter oilseed rape (PR 512)



- Research project led by ADAS, Warwick Crop Centre and Fera
- Differences between varieties in tolerance to verticillium wilt identified
- Field results were from a **single trial** in a **single year**

A robust data set is required to calculate verticillium disease ratings

Research project funded by AHDB and Farmacy/Hutchinsons

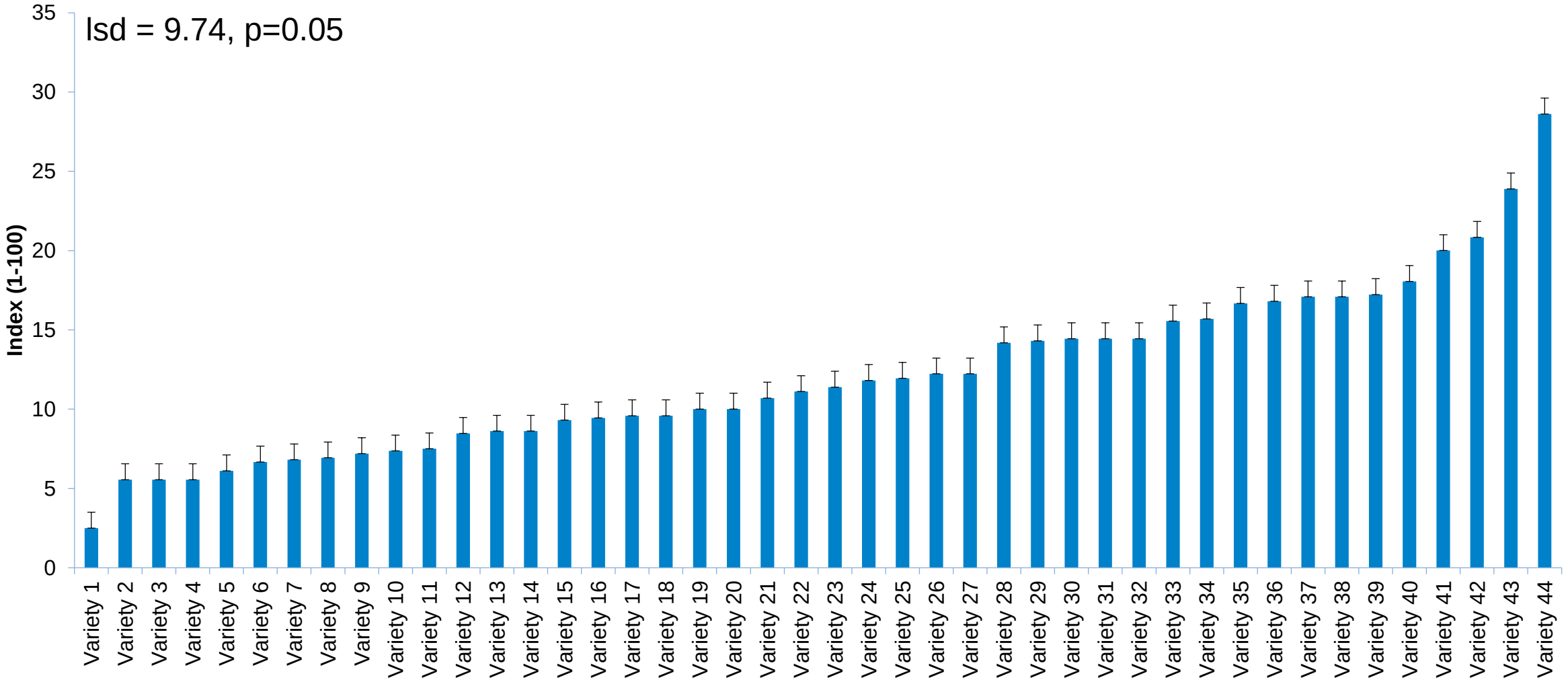
Evaluation of resistance levels to verticillium wilt in UK oilseed rape varieties and relevance to productivity

- This project aims to evaluate resistance levels to verticillium wilt in UK oilseed rape varieties and provide a better understanding of its effects on productivity. The objectives are:

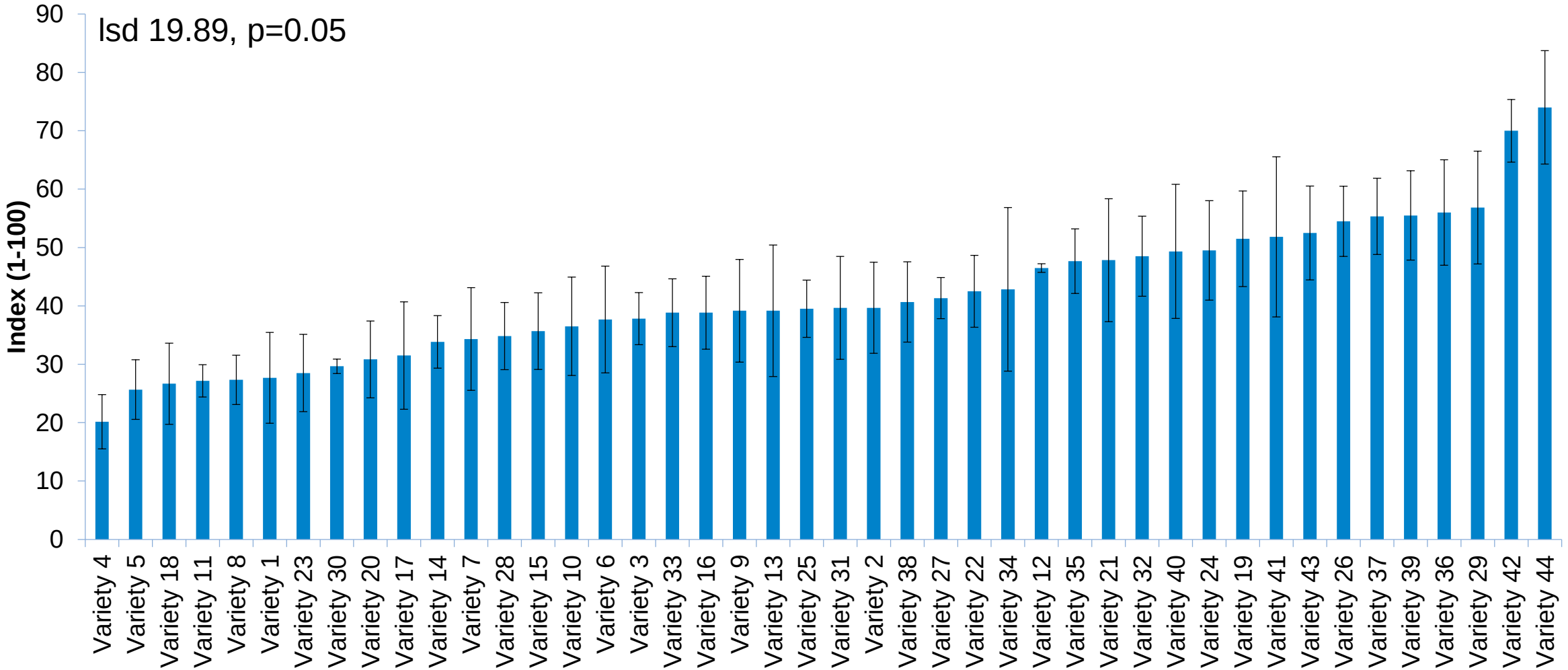
    1. To develop a verticillium wilt inoculated trial protocol
    2. To work with AHDB to produce a verticillium wilt disease rating
    3. To determine yield loss caused by verticillium wilt

Plus in kind support from plant breeders

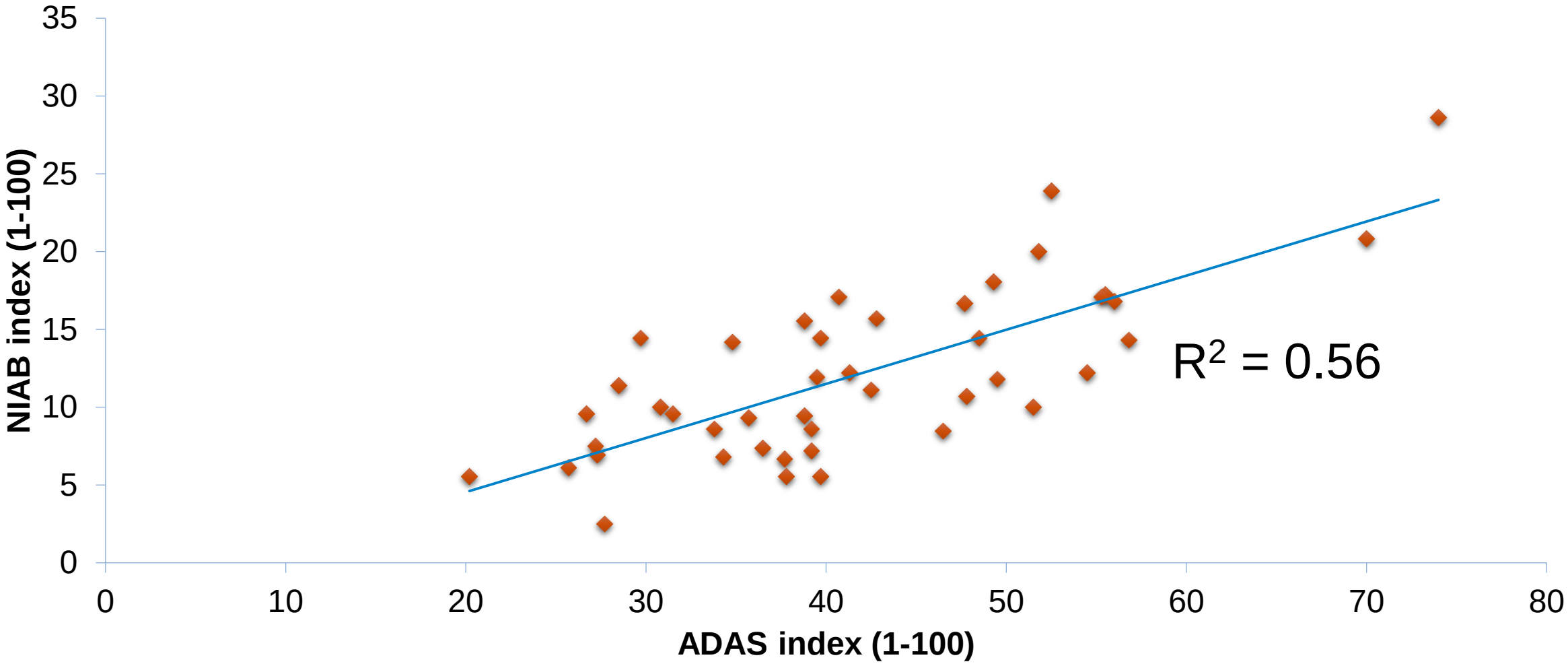
Varietal difference (inoculated site)
NIAB results, 8 July



Varietal differences (naturally infected site) ADAS results, 12 July



Correlation between sites



Summary of results so far

- An inoculated test procedure has been developed which produced verticillium symptoms in a field trial.
- The inoculated test resulted in disease levels similar to those recorded in a naturally infected field test.
- A field scoring method was developed and used to assess varieties in each test.
- There was a significant correlation between disease scores from Recommended List varieties in the inoculated and naturally infected tests, indicating that reproducible differences between varieties exist.
- Results show that there is potential to calculate a verticillium disease rating.

RL have your say

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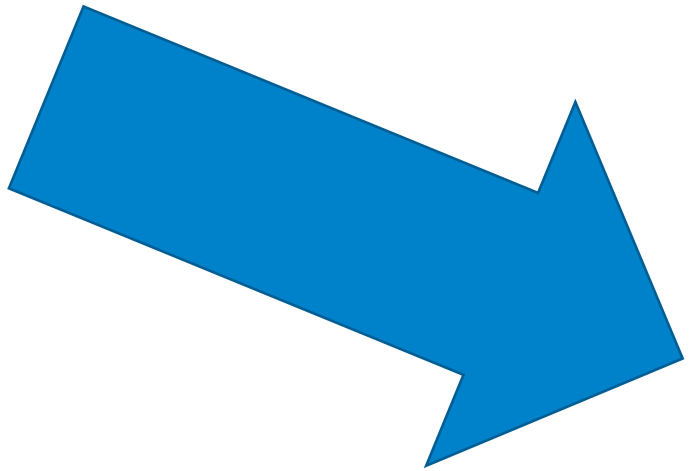
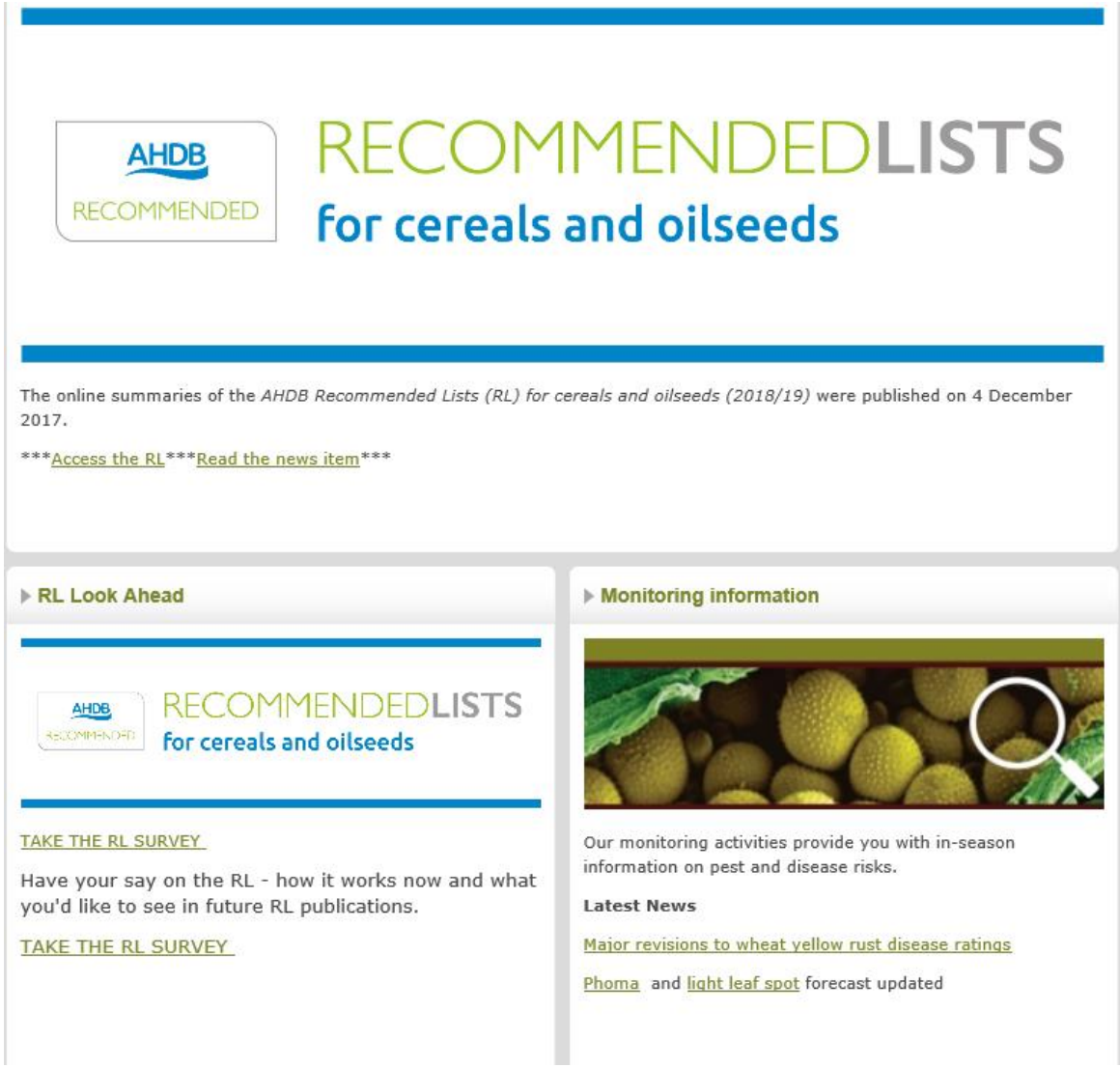
RL survey

RL survey:

cereals.ahdb.org.uk/varieties





Discussion

RL have your say

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Thank you

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Sustainable fungicide programmes for oilseed rape

Faye Ritchie, ADAS

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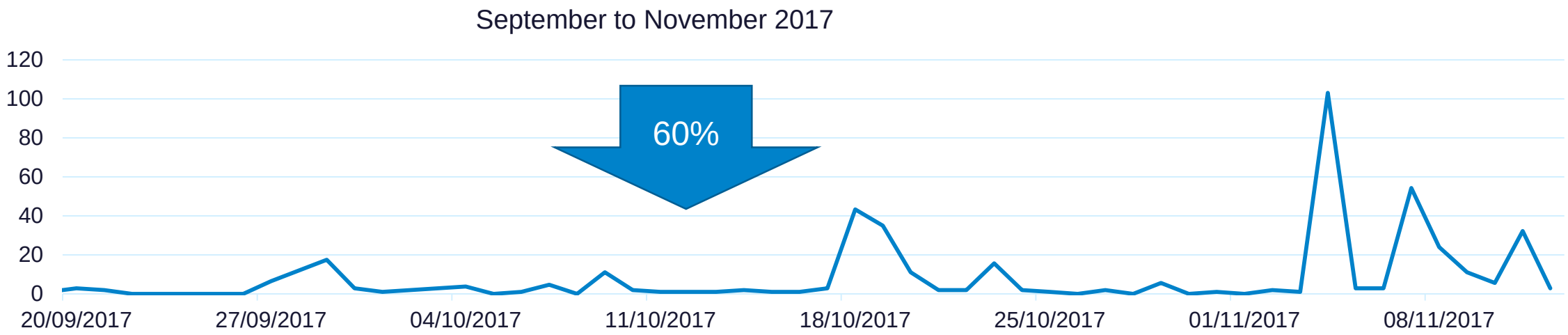
Sustainable fungicide programmes for winter oilseed rape

- Review of disease pressure this season
- Developments from the fungicide performance trials
- Sclerotinia infection risk tools
- Fungicide programmes:
  Managing disease, protecting efficacy

Review of disease pressure this season

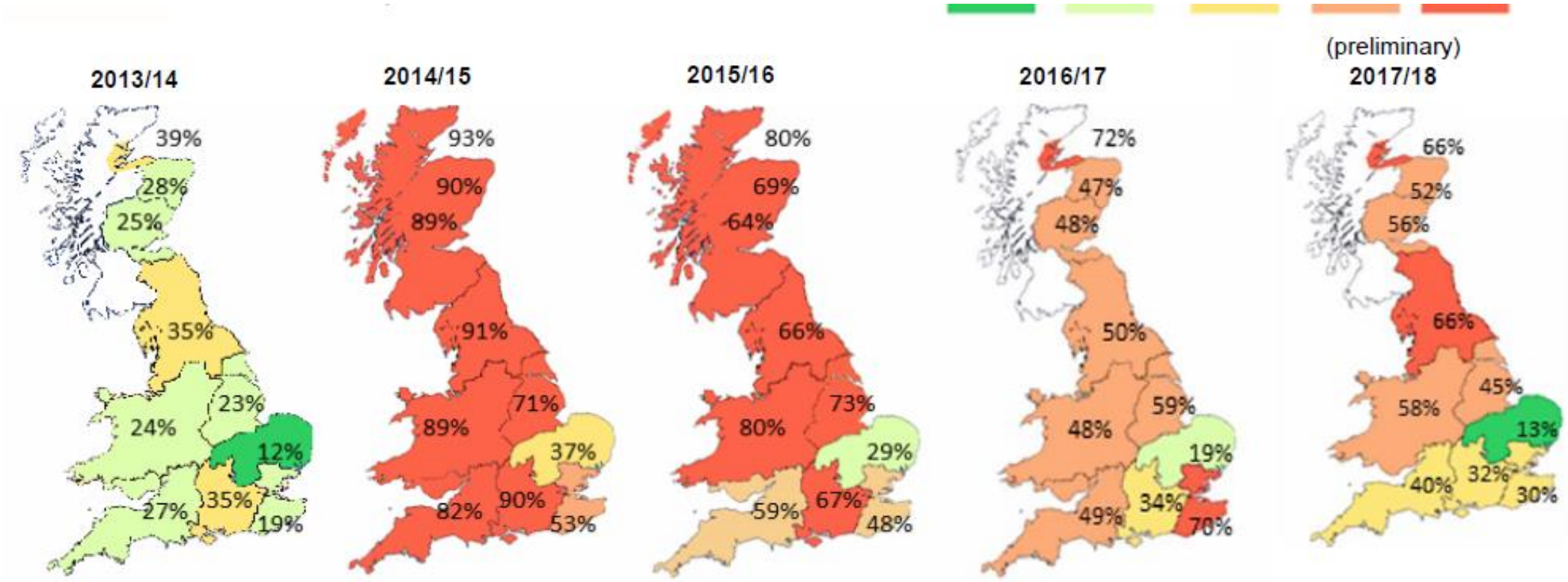
Phoma leaf spot epidemic: More severe this season

Arrow = date and percentage of plants in the OSR crop with phoma leaf spot



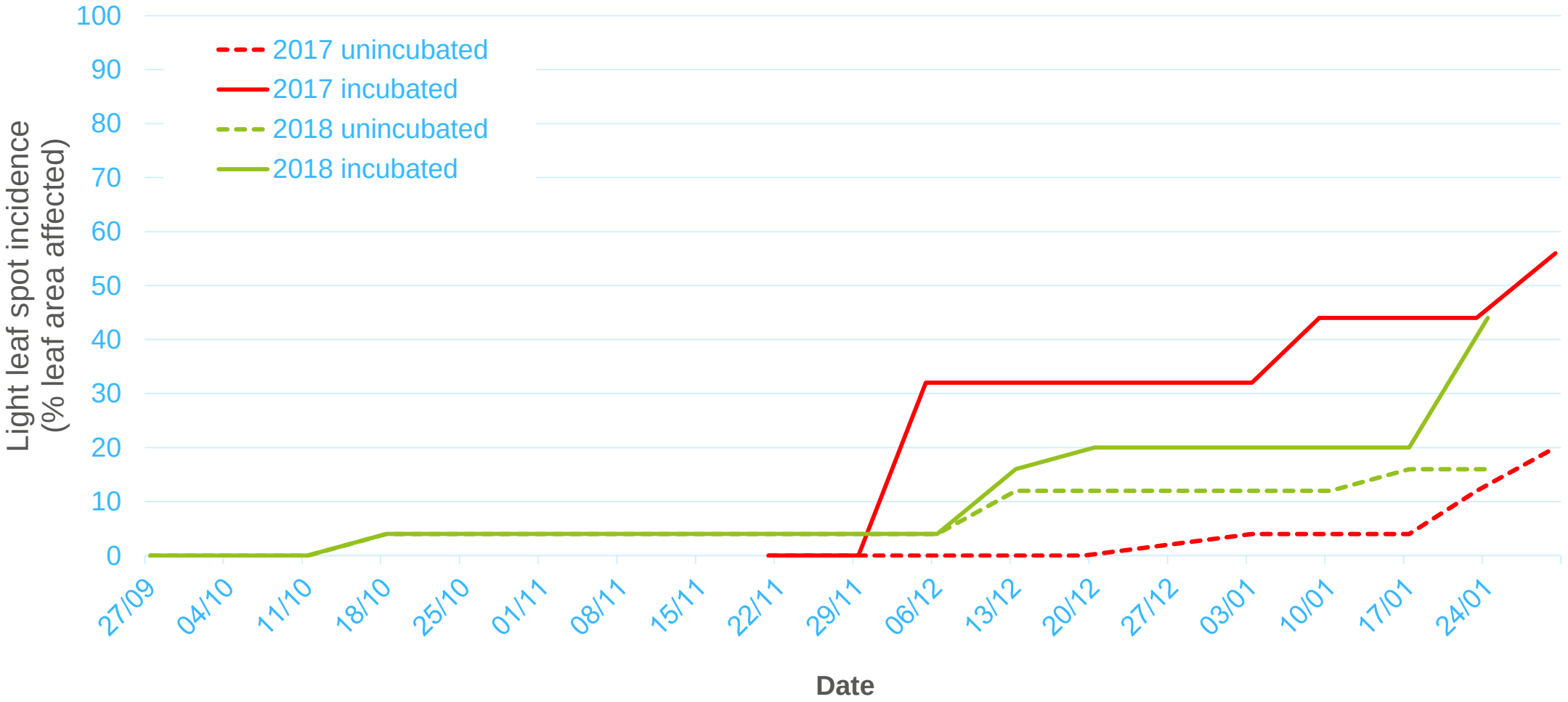
ADAS (Norfolk site) Source: DuPont, University of Hertfordshire, Hutchinsons

Light leaf spot forecast: Similar risk to last year



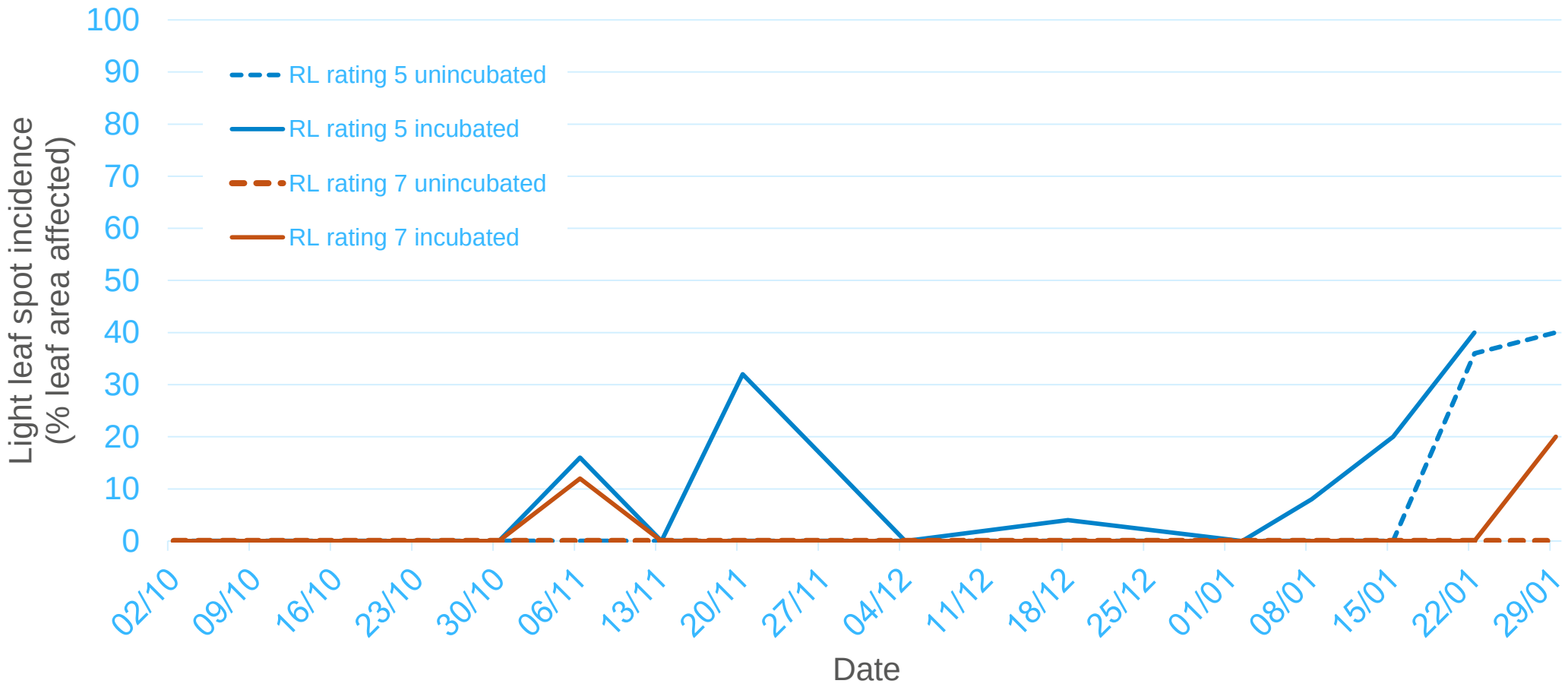
Source: Light leaf spot forecast cereals.ahdb.org.uk/leafspots (Rothamsted Research and Weather INnovations)

Light leaf spot:
Disease pressure increasing – pressure slightly higher than same time last year (Yorkshire)



Cumulative scores – completely untreated variety (RL rating 5).
Source: ADAS

Light leaf spot:
Disease pressure increasing, particularly on susceptible varieties (Herefordshire)



Actual scores – completely untreated varieties.
Source: ADAS

Developments from the OSR fungicide performance trials

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Focus on the three major diseases: Phoma, light leaf spot and sclerotinia

Target Disease	Site (Variety)	Organisation
Phoma (Two-spray*)	Norfolk	ADAS
	Herefordshire	ADAS
Light Leaf Spot (Two-spray**)	North Yorkshire	ADAS
	Dorset	NIAB
	Midlothian	SRUC
Sclerotinia Stem Rot (single spray***)	Herefordshire	ADAS
	Ceredigion	ADAS

*10-20% plants affected, followed by 4-10 weeks (when re-infection evident).
** Autumn (November/December) overspray, followed by pre/early stem extension application (February/March).
***early to mid-flowering application.

Products included in trials in 2017

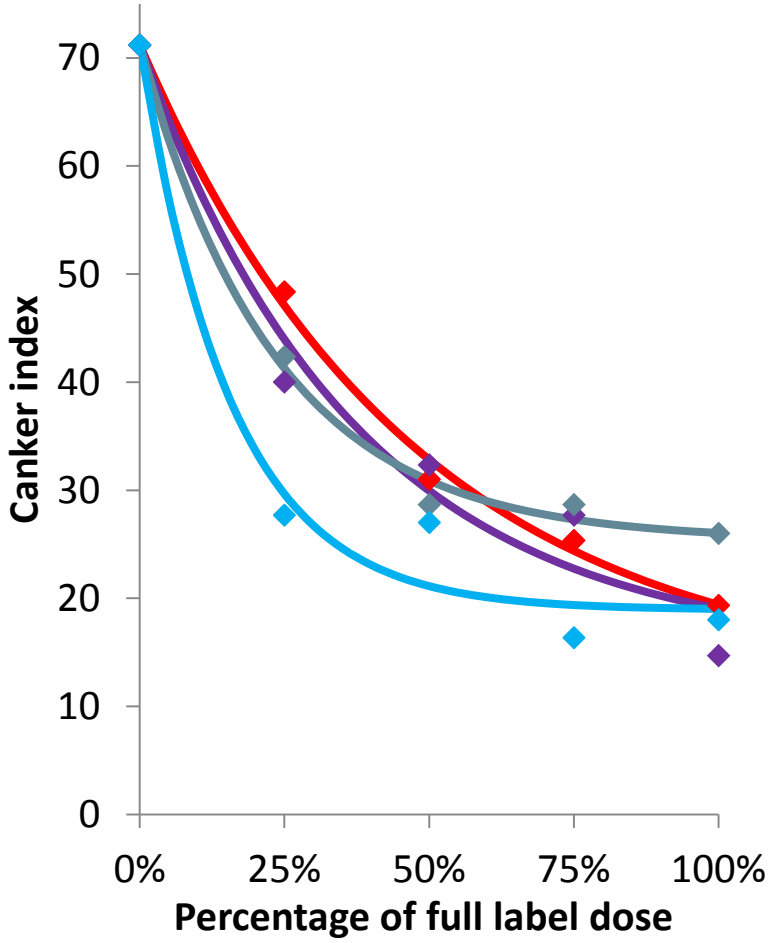
Product	Active(s)	Full Dose (l/ha)	Phoma	Light Leaf Spot	Sclerotinia
Untreated	-	-	+	+	+
Proline 275	prothioconazole	0.63	+	+	+
Refinzar[a]	penthiopyrad + picoxystrobin	1.0	+	+	-
Pictor[a]	dimoxystrobin + boscalid	0.5	+	+	-
Filan	boscalid	0.5 (kg/ha)	+	-	+
Amistar	azoxystrobin	1.0	-	-	+

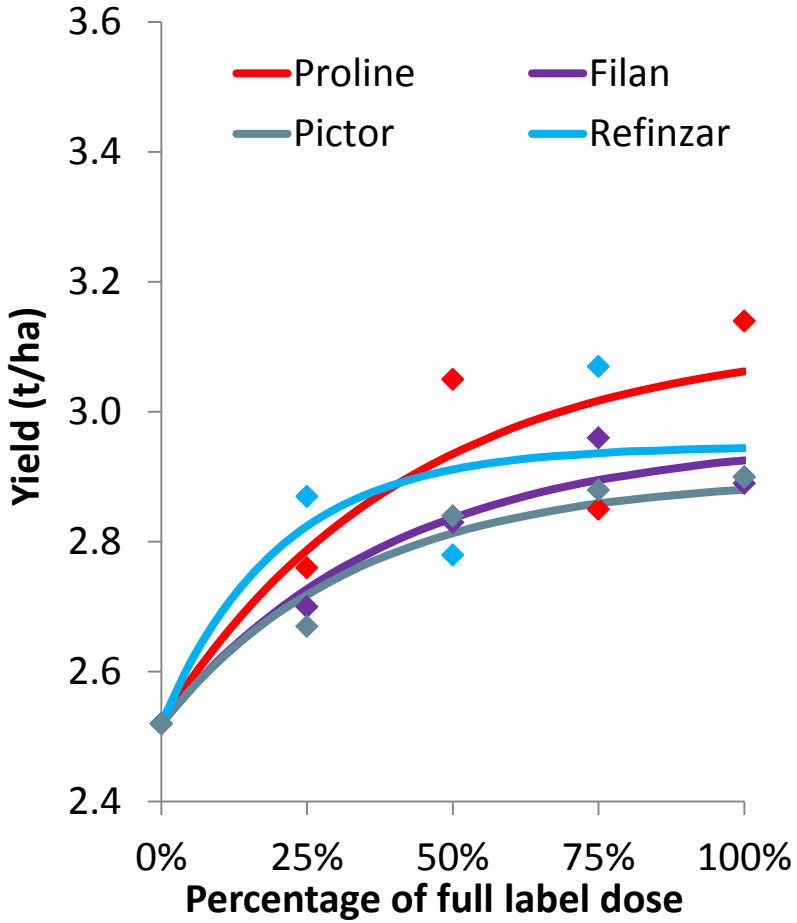
+ = included in trials; - = not included in trials.
a = used as autumn or two-spray programme to fit experimental protocol (restrictions on label).

Products near to market are tested but data cannot be released until after registration.

Phoma leaf spot/stem canker

Stem canker and yield (Norfolk) in 2016: Severe leaf spot pressure in the autumn but products performing well





Phoma leaf spot/stem canker: summary

Season so far

- Early onset of the epidemic
- Thresholds met in late September/ early October, in some areas
- Re-infection occurred 4 to 6 weeks after first sprays

Fungicide efficacy

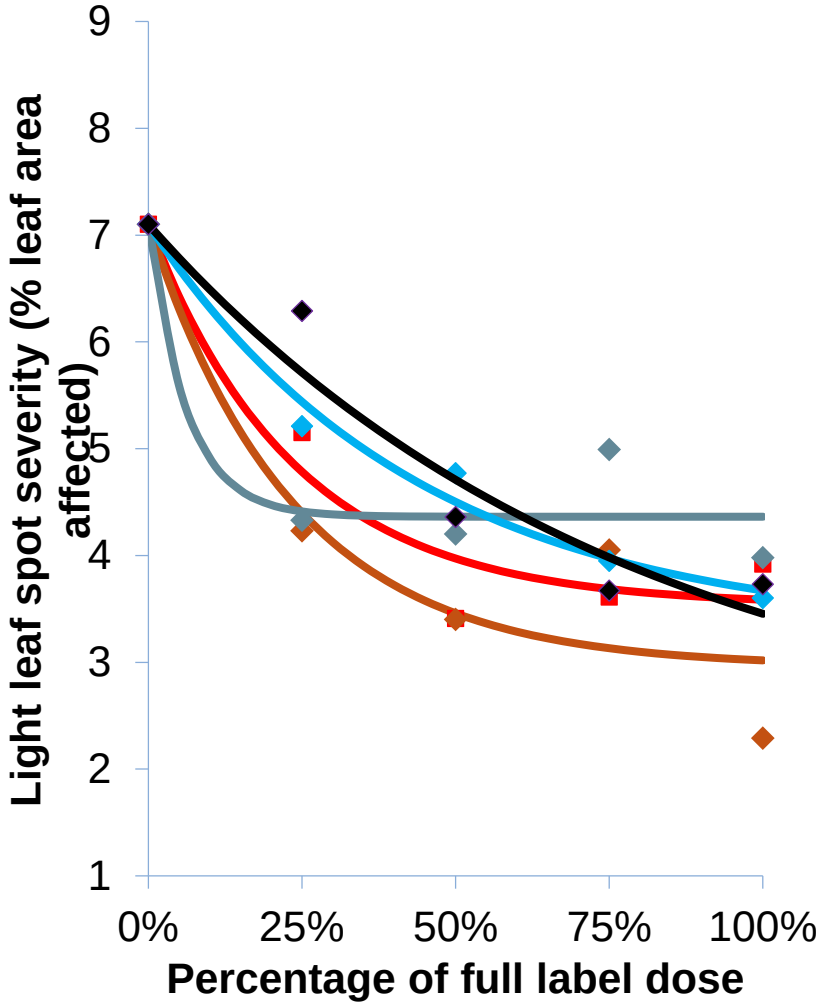
- Azole and non-azole products have activity
- Two applications in the autumn providing effective control
- No reports of resistance to fungicides

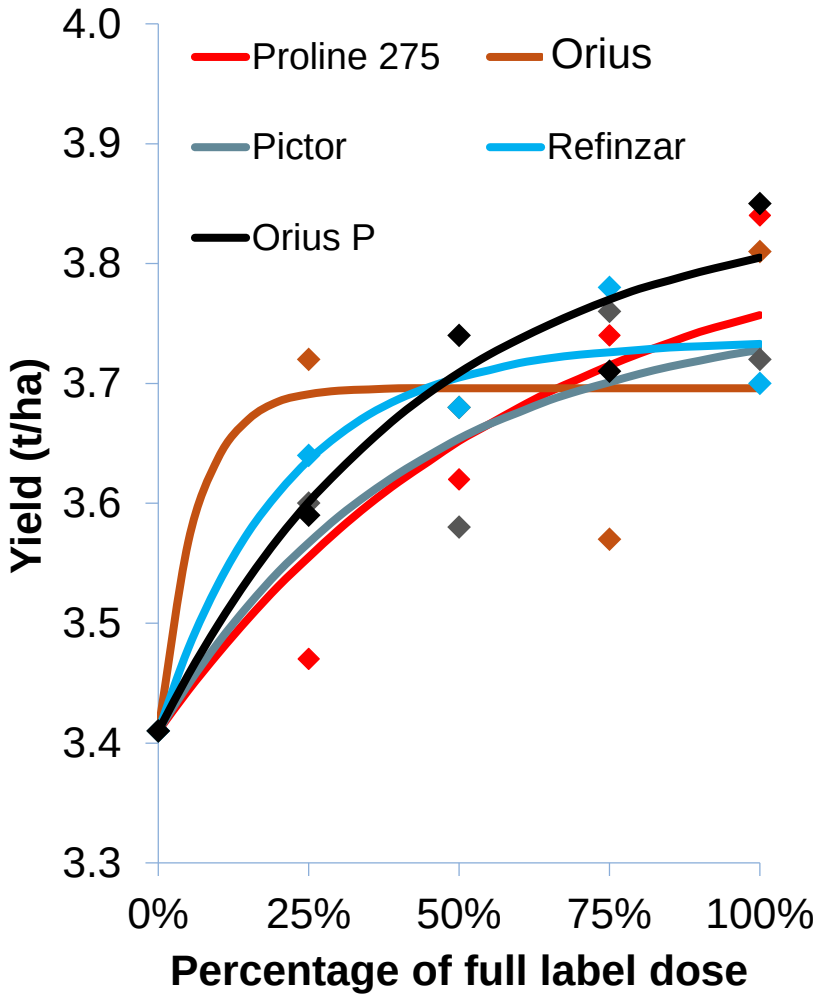
Outlook: 2017/2018

- Fungicide programmes up to date
- May see more stem canker pre-harvest in some crops

Light leaf spot

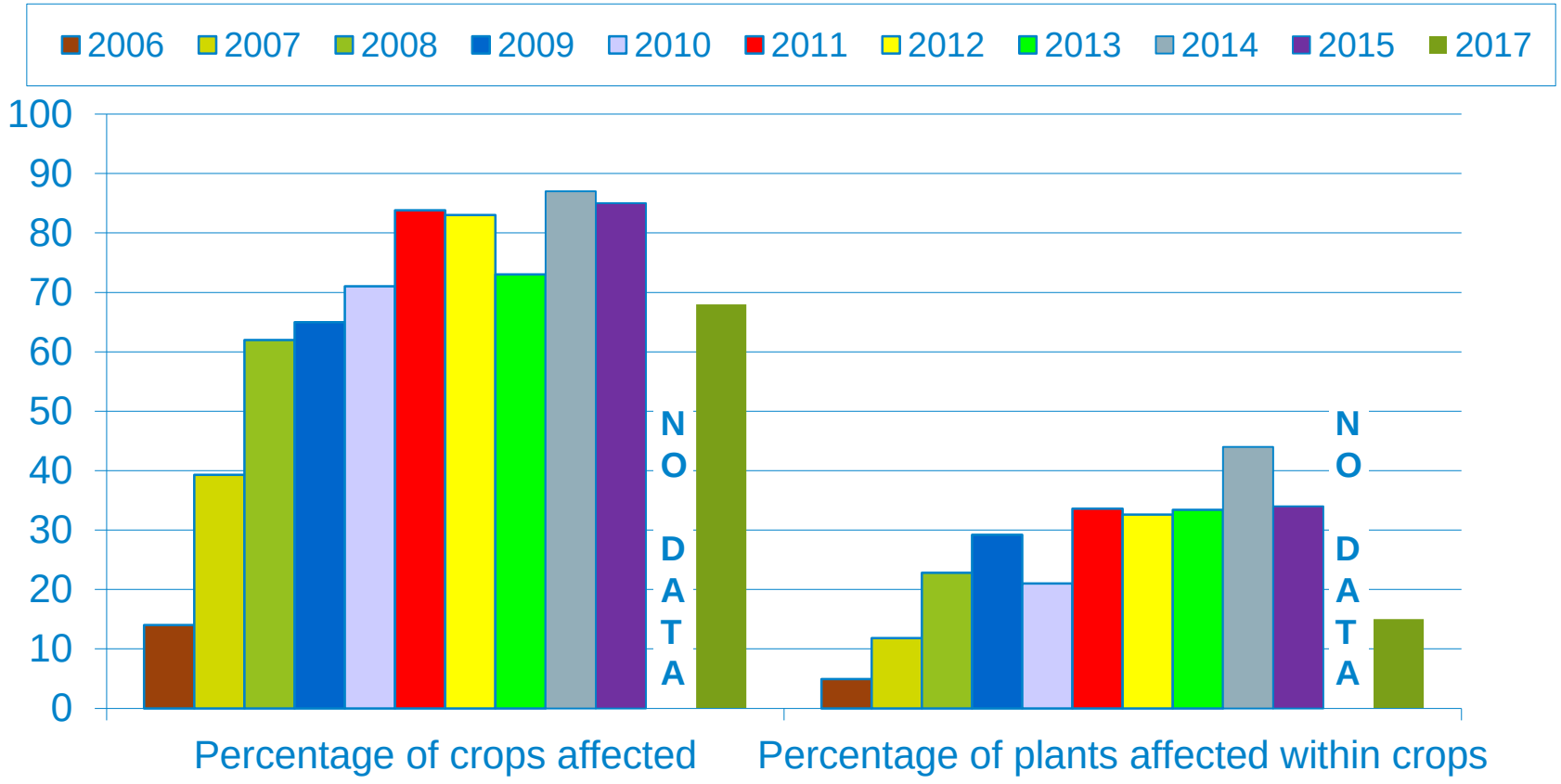
Light leaf spot control across years (5 trials in 2015 and 2016*)





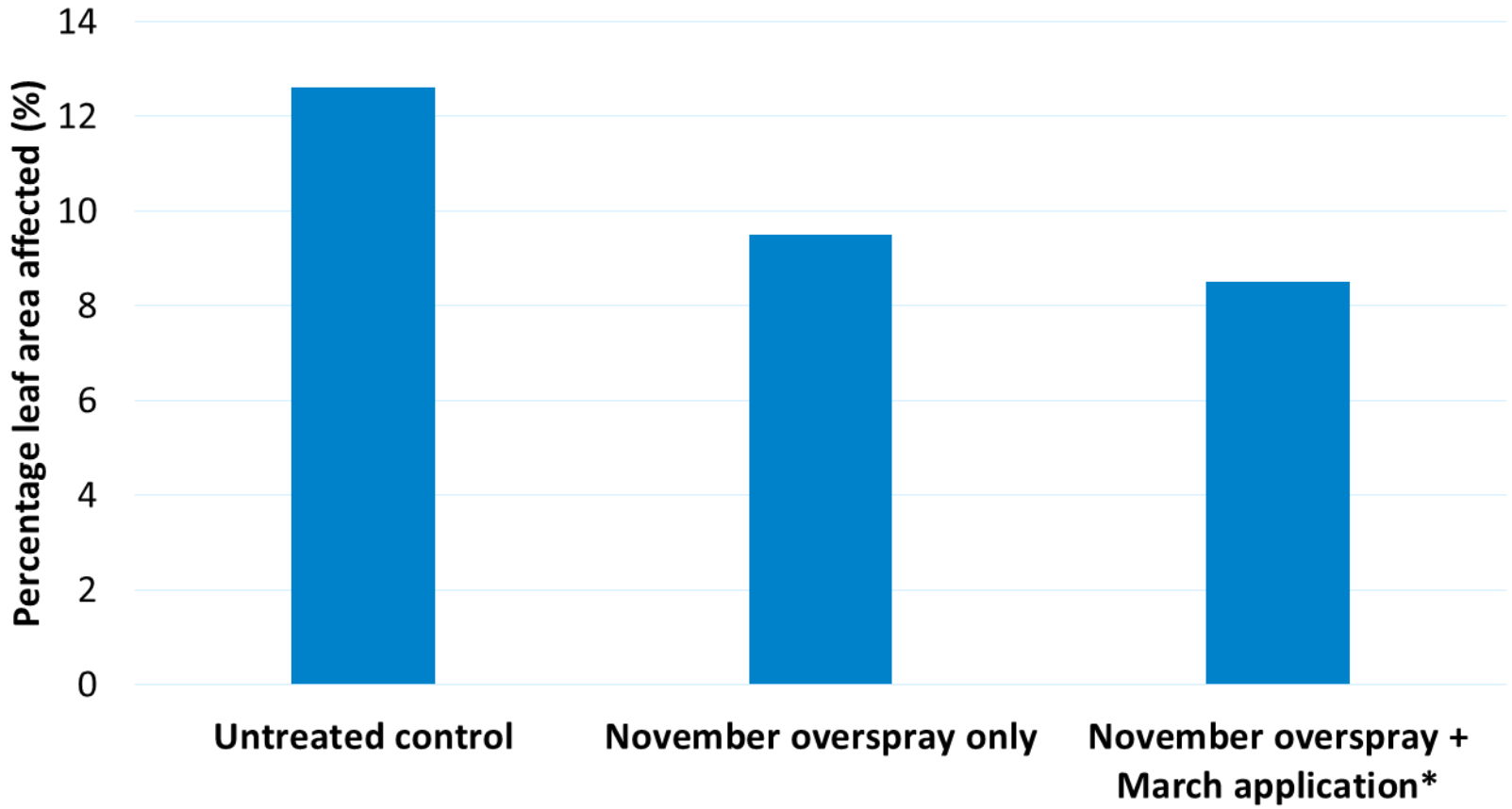
*Orius P in harvest year 2015 only, all other products in both years

Light leaf spot:
Lowest levels in the spring in England since 2008



Source: DEFRA winter oilseed rape disease surveys

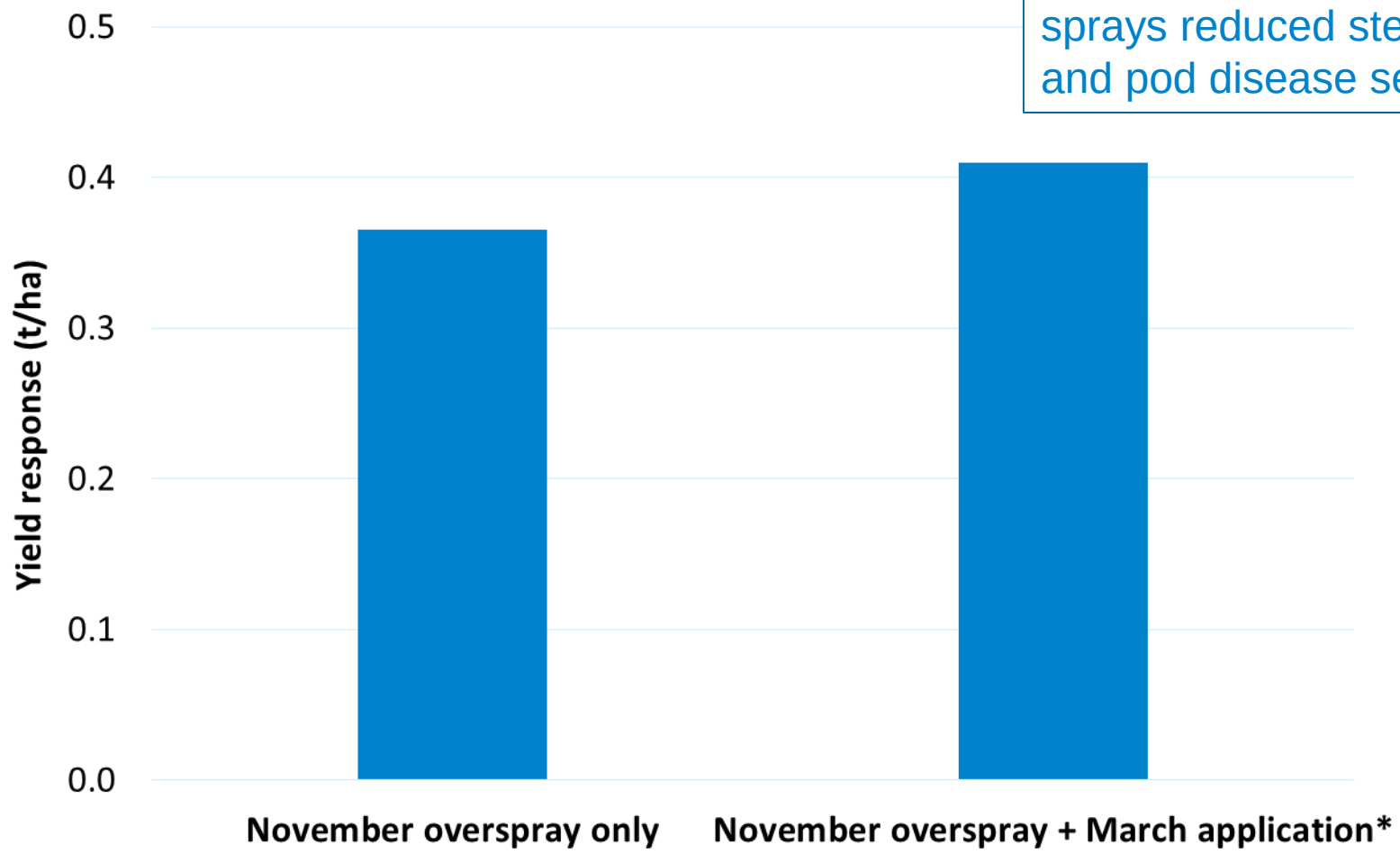
Light leaf spot trials in 2017: Disease control and fungicide application timing (across 3 sites)*



*Overspray applied in November 2016 and stem extension treatments applied in early March 2017, typically at GS30 (rosette stage: beginning of stem extension) – variety RL disease ratings 5 and 6.

Significant yield increase from the November fungicide overspray (across 3 sites)

Pre/at stem extension sprays reduced stem and pod disease severity



*Overspray applied in November 2016 and stem extension treatments applied in early March 2017, typically at GS30 (rosette stage: beginning of stem extension) – variety RL disease ratings 5 and 6

Light leaf spot: summary

Season so far

- Earlier-sown crops more at risk
- Lesions reported on incubated samples in November

Fungicide efficacy

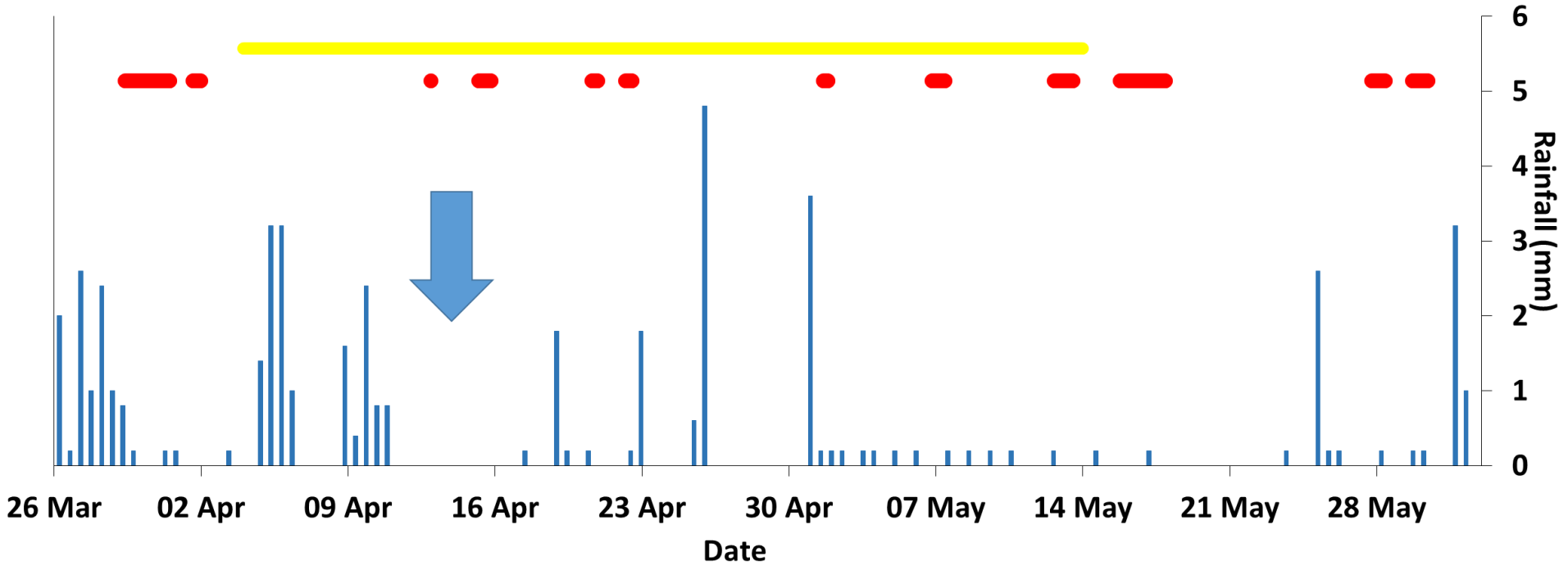
- Both azole and non-azole products provide control in the trials
- Anti-resistance management strategies important
- Use different modes of action, where possible

Outlook: 2017/2018

- Regional and local risk
- Monitor crops now and treat promptly, if seen
- Levels visible in the field increasing – particularly susceptible varieties

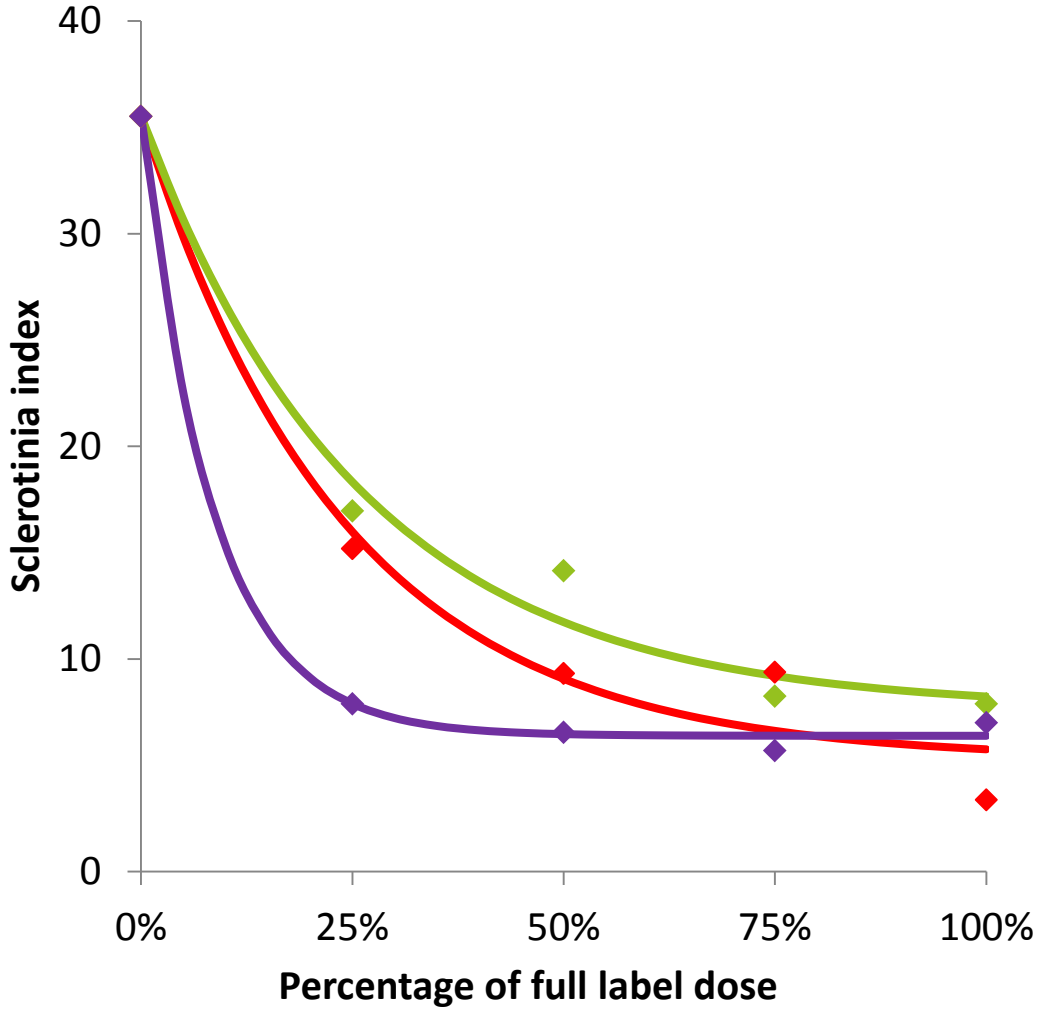
Sclerotinia stem rot

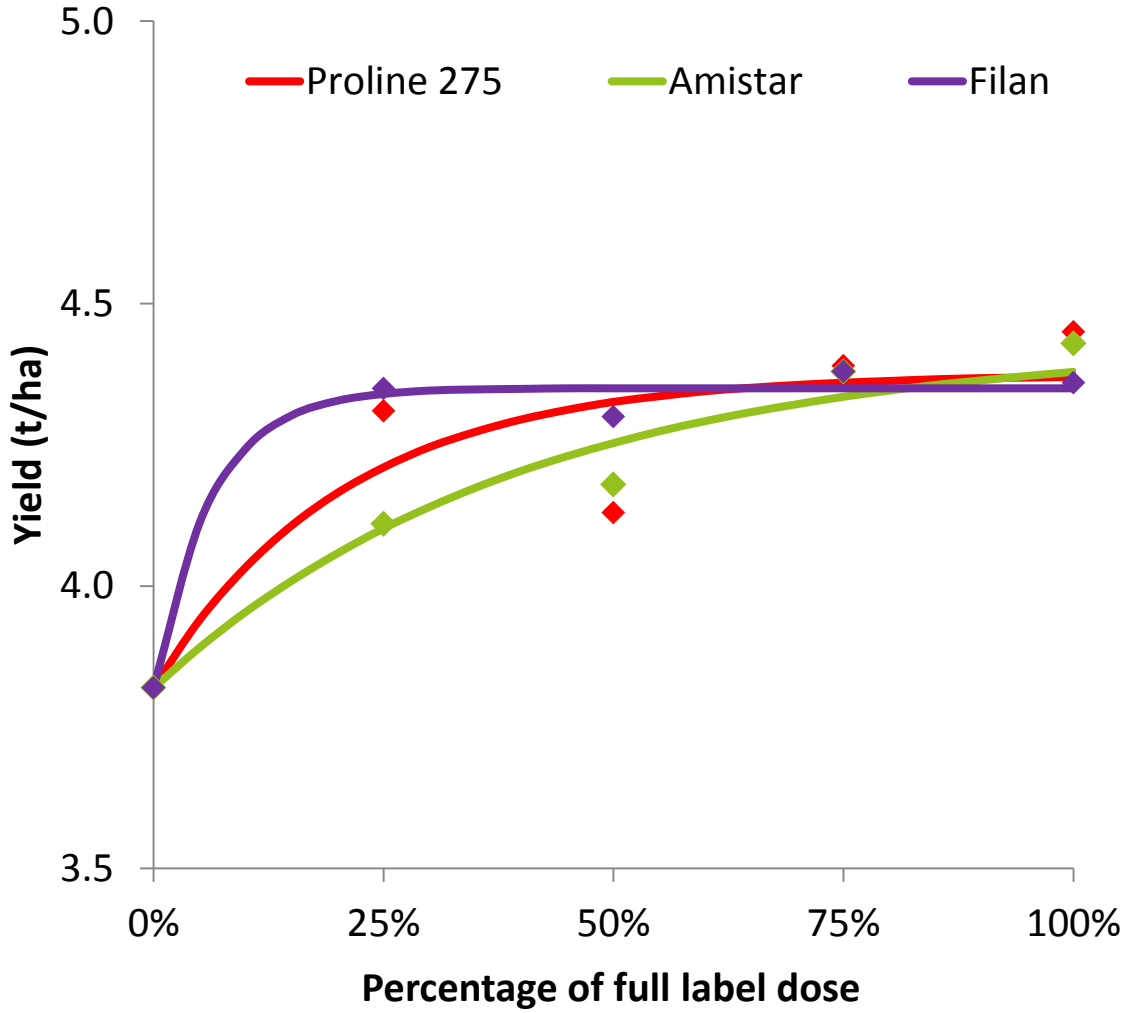
Sclerotinia risk: Herefordshire in 2017



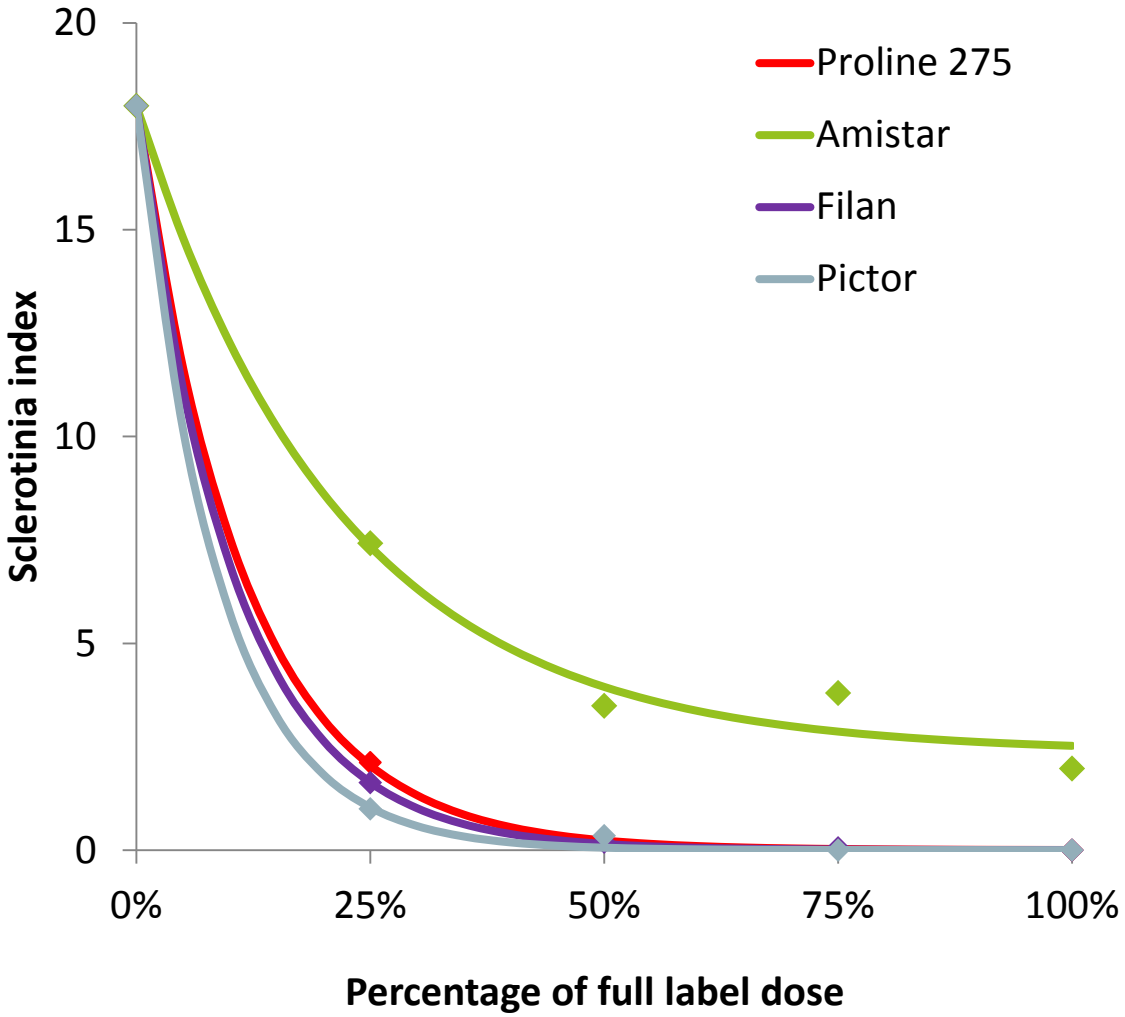
Yellow line = duration of flowering
Red points = Sklero Pro infection events
Blue bars = rainfall (mm)
Arrow = fungicide application date (14 April)

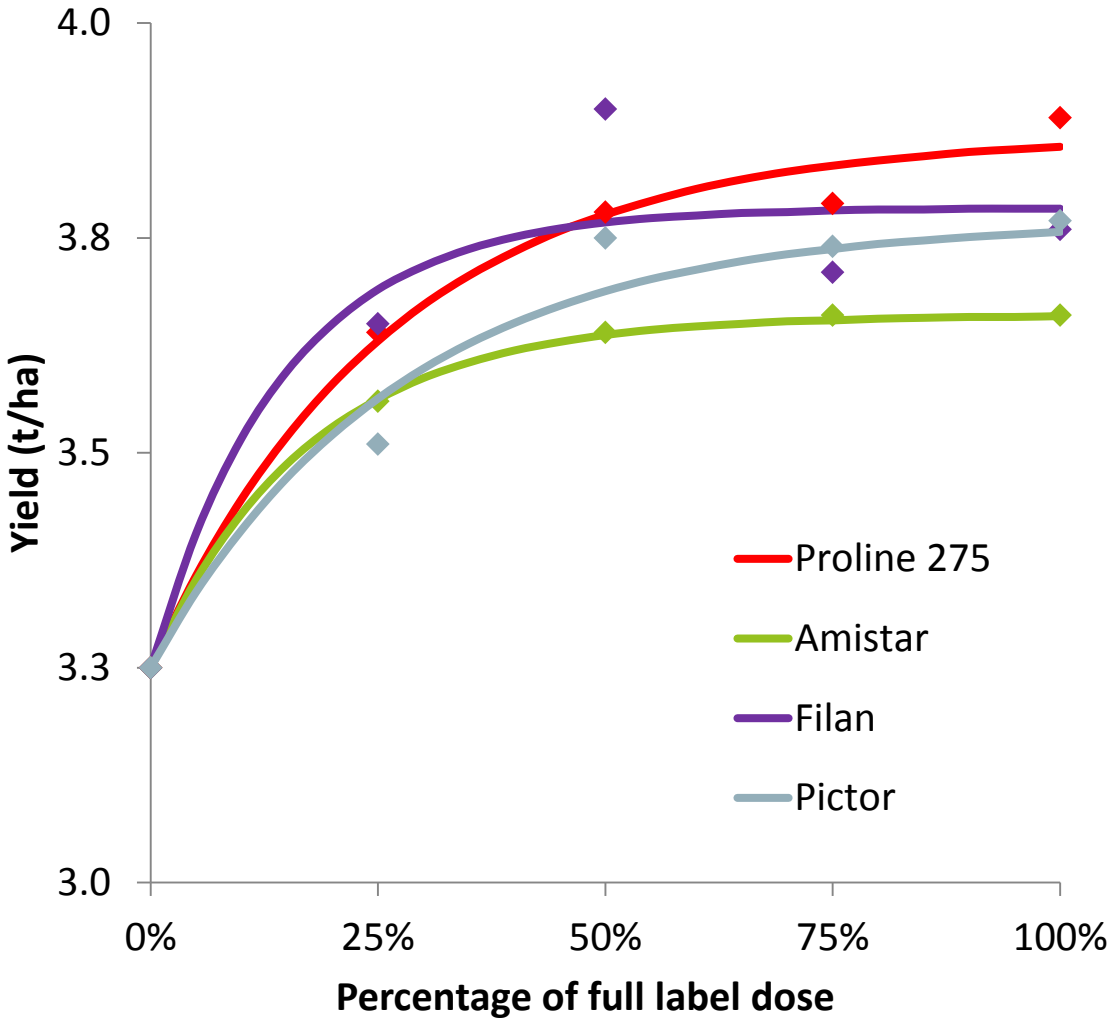
Sclerotinia:
Disease and yield in Herefordshire in 2017





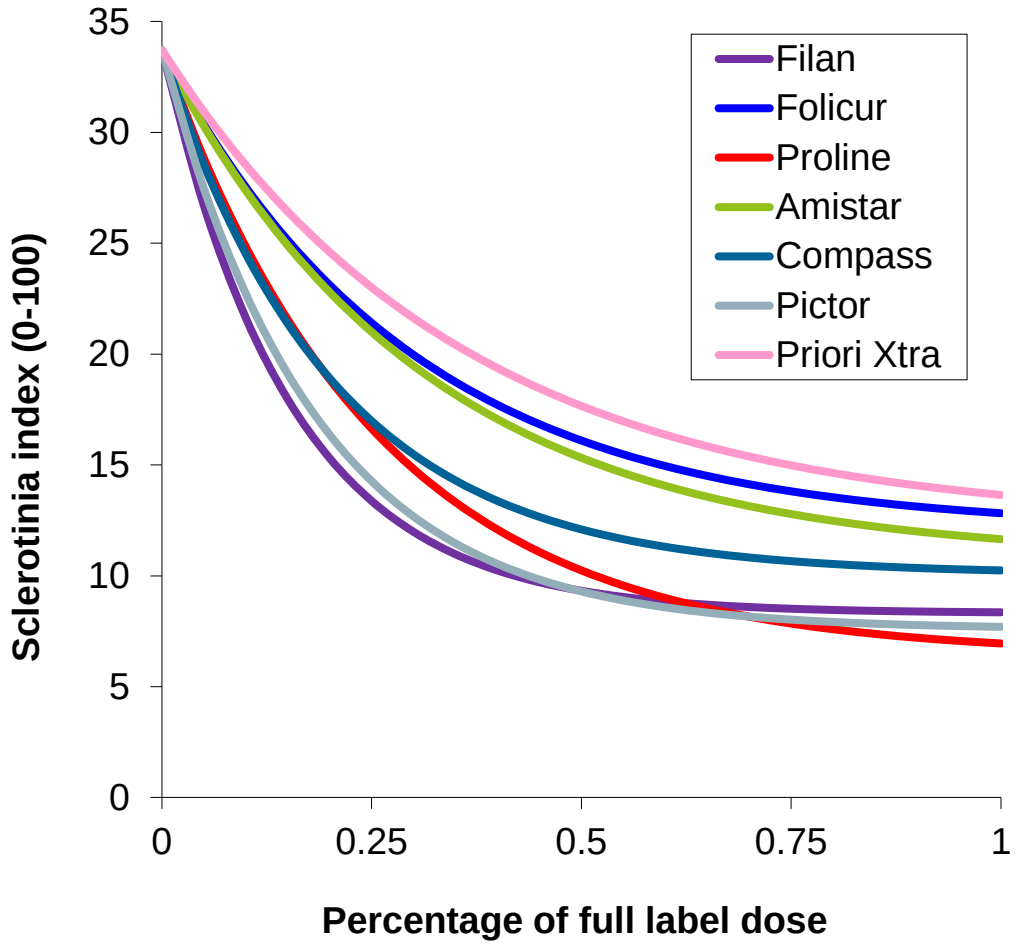
Performance of sclerotinia fungicides across 5 sites (2015 to 2017): moderate disease pressure



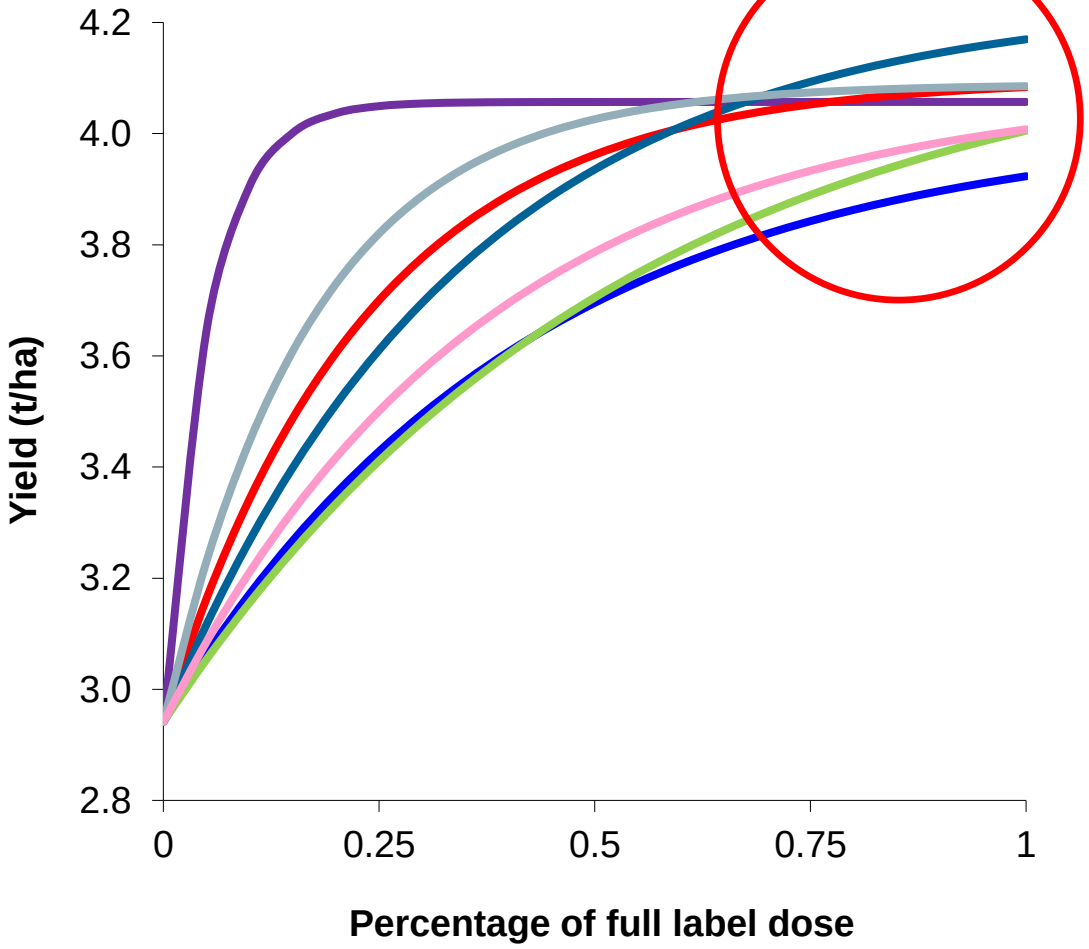


Cross-site analysis: 5 sites 2015 to 2017

No changes in the efficacy of sclerotinia fungicides for over 10 years: Data from 2006 to 2008 (high disease pressure: severe test of persistence)



Higher doses provide consistently good control



Cross-site analysis: 6 sites 2006 to 2008

Sclerotinia stem rot: summary

Season so far

- Infection risk dependent on weather during flowering
- Previous history on farm can increase risk

Fungicide efficacy

- Higher doses provide 3 weeks protection
- Range of active ingredients available
- No resistance to sclerotinia fungicides reported in UK

Outlook: 2017/2018

- Data available on efficacy of other products from previous projects
- Fungicides protectant activity only
- Application timing important for good control

Sclerotinia infection risk tools

CEREALS & OILSEEDS

Sclerotinia monitoring

Petal colonisation

Petal stick

Ascospore release

Secondary spread

Environmental and crop factors

Host infection

Depots

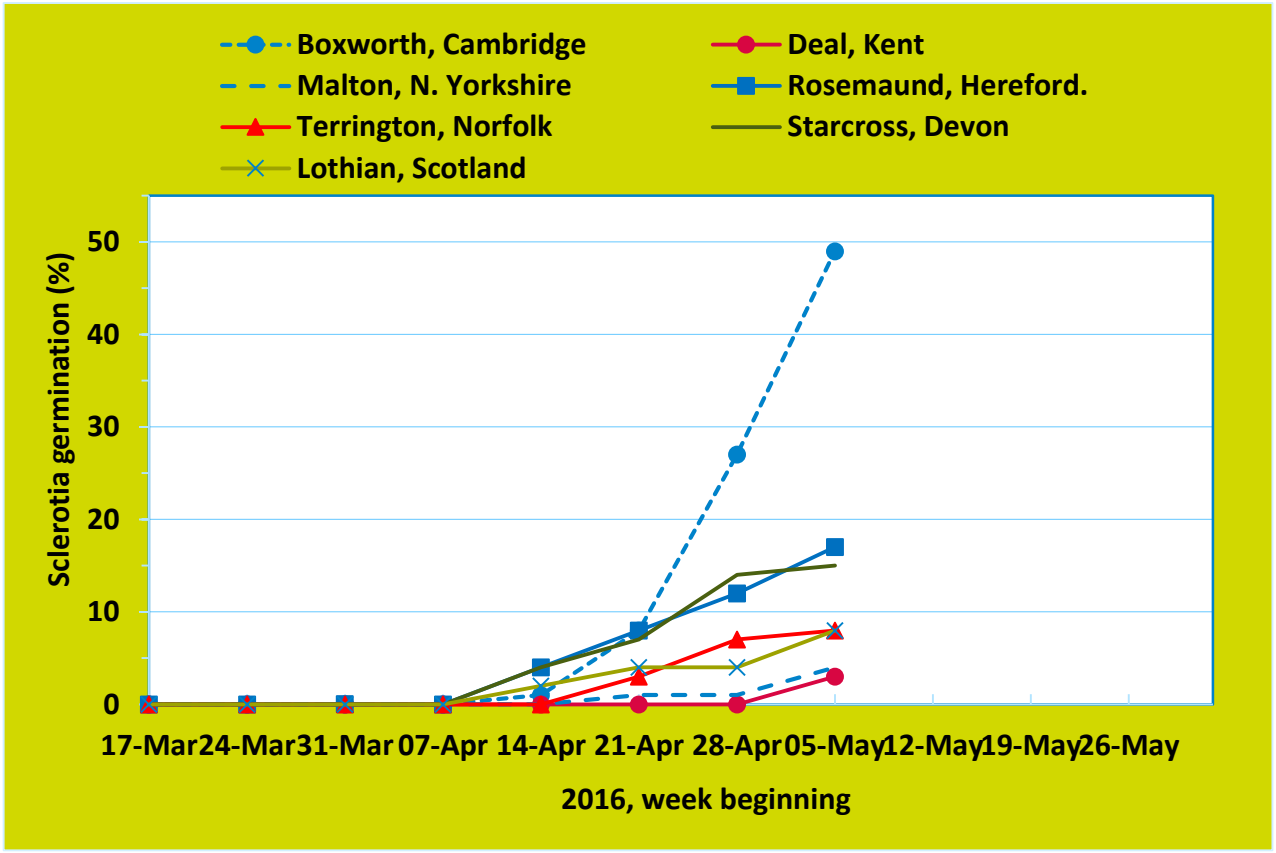
Sclerotia germination

Sclerotia overwinter

Soil inoculum

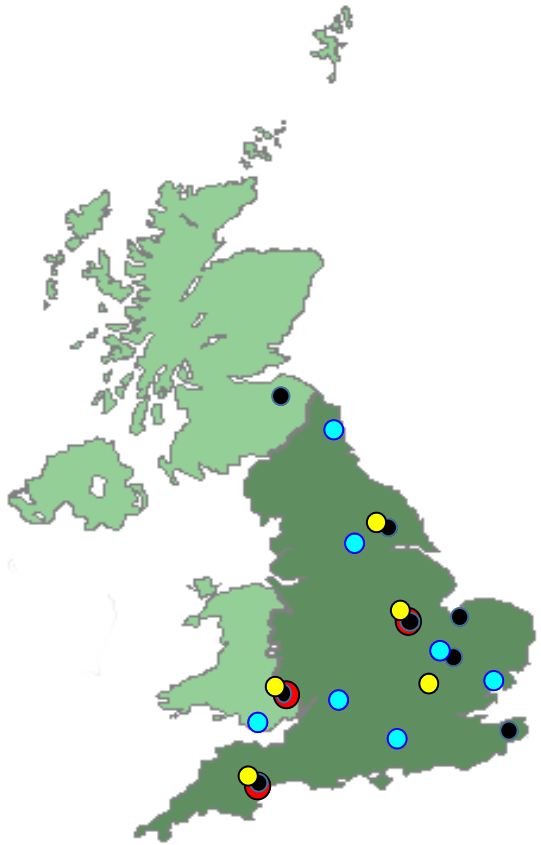
Sclerotia formation

Sclerotinia germination and petal testing (March onwards)



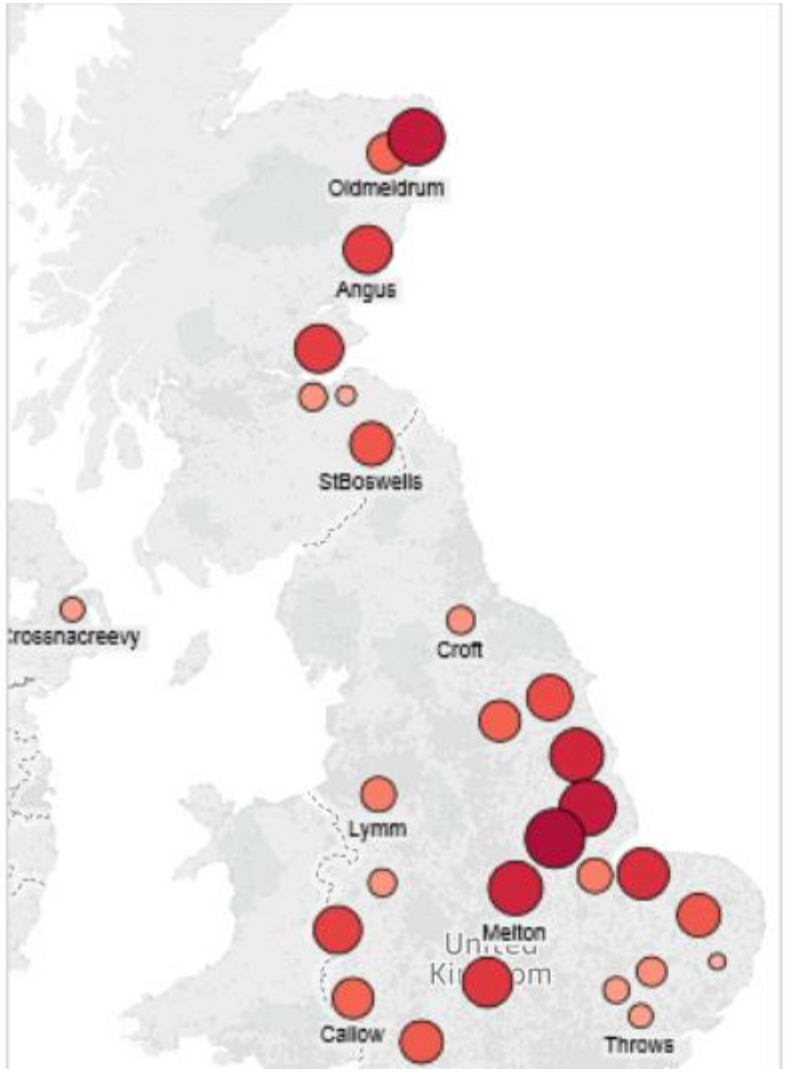
Source: BASF and ADAS basfrealresults.co.uk/assessing-the-threat-of-sclerotinia-3/

AHDB Sclerotinia monitoring: Weather risk forecast reports



- Forecast weather reports at 15 sites during flowering on AHDB website
- Locations changed from last year
- SkleroPro infection event criteria – local risk assessment (≥7˚C and 80% RH ≥23 hours)

Sclerotinia weather-based risk report

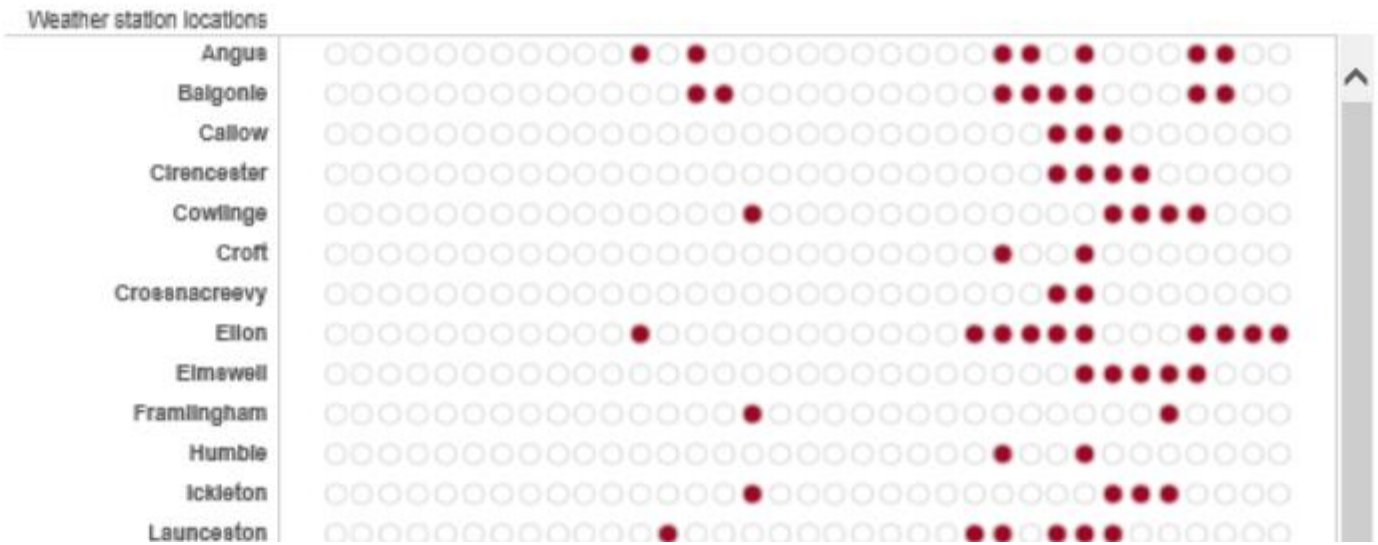


Spring 2017 days with and without weather conducive to *Sclerotinia* infection

Click one or more locations on the map to populate the visualisation below. Use the date slider to obtain desired date range. A red filled circle indicates that a particular day comprised a 'high-risk infection event', i.e. an episode of at least 23 hrs. where Relative Humidity exceeded 80% and Temperature exceeded 7 °C.

Date range

19 April 2017 — 23 May 2017



Fungicide programmes:
Managing disease, protecting efficacy

CEREALS & OILSEEDS

Decreased sensitivity to azoles reported for *Pyrenopeziza brassicae*, which causes light leaf spot, in the UK

- Reports of reduced sensitivity to azoles in laboratory tests for light leaf spot in the UK
- Equivalent mutations to those conferring resistance to azoles in *Z. tritici* (+ novel mutations)
- Not seeing dramatic changes in efficacy of azoles in AHDB fungicide performance trials – still effective
- Determine distribution of such strains and how to manage resistance development

Carter et al., 2014 (Molecular Plant Pathology 15: 513-322)

Maximising the effective life of fungicides for the control of oilseed rape diseases through improved resistance management

- Determine the risk of fungicide resistance affecting fungicides used to control oilseed rape diseases (funded by AHDB)
- Test which resistance management strategies are most effective at slowing fungicide resistance selection in *P. brassicae* (funded by AHDB)
- Conduct an economic analysis of fungicide anti-resistance management strategies for the industry (funded through industry contributions)

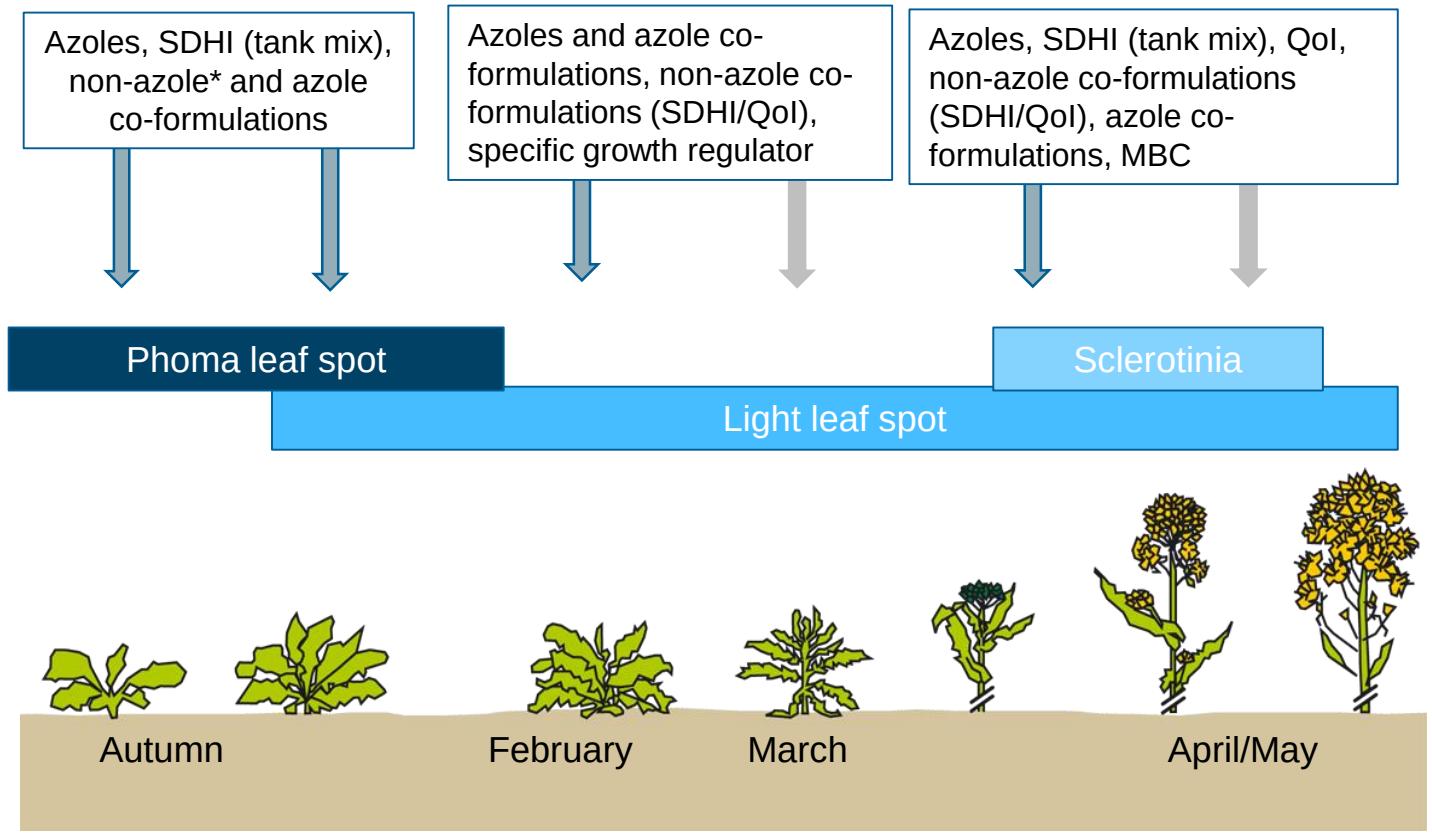
AHDB Project. January 2017 – June 2021.
Project partners: ADAS, AHDB, Rothamsted Research, Syngenta, BASF, Bayer CropScience, DuPont, ADAMA

FRAG guidelines:
Fungicide resistance management strategies

- Bury crop residues
- Use disease resistant varieties
- Target fungicides – timing and dose
- Avoid repeated use of same mode of action
- Light leaf spot: may be present but not the main target – consider alternative modes of action

cereals.ahdb.org.uk/frag

Resistance management strategies:
Use different modes of action, tank mix, co-formulations – take a whole-programme approach



Sustainable fungicide programmes for oilseed rape: Summary

- Light leaf spot starting to increase – monitoring crops and treating promptly important for good control
- Strains with decreased sensitivity to azoles (light leaf spot) have been found
- Weather-based risk reports will be available from AHDB to guide sclerotinia decisions
- No changes in the performance of fungicides against sclerotinia over 10 years
- Consider resistance management strategies across the entire fungicide programme

United Oilseeds and AHDB Joint Seminar

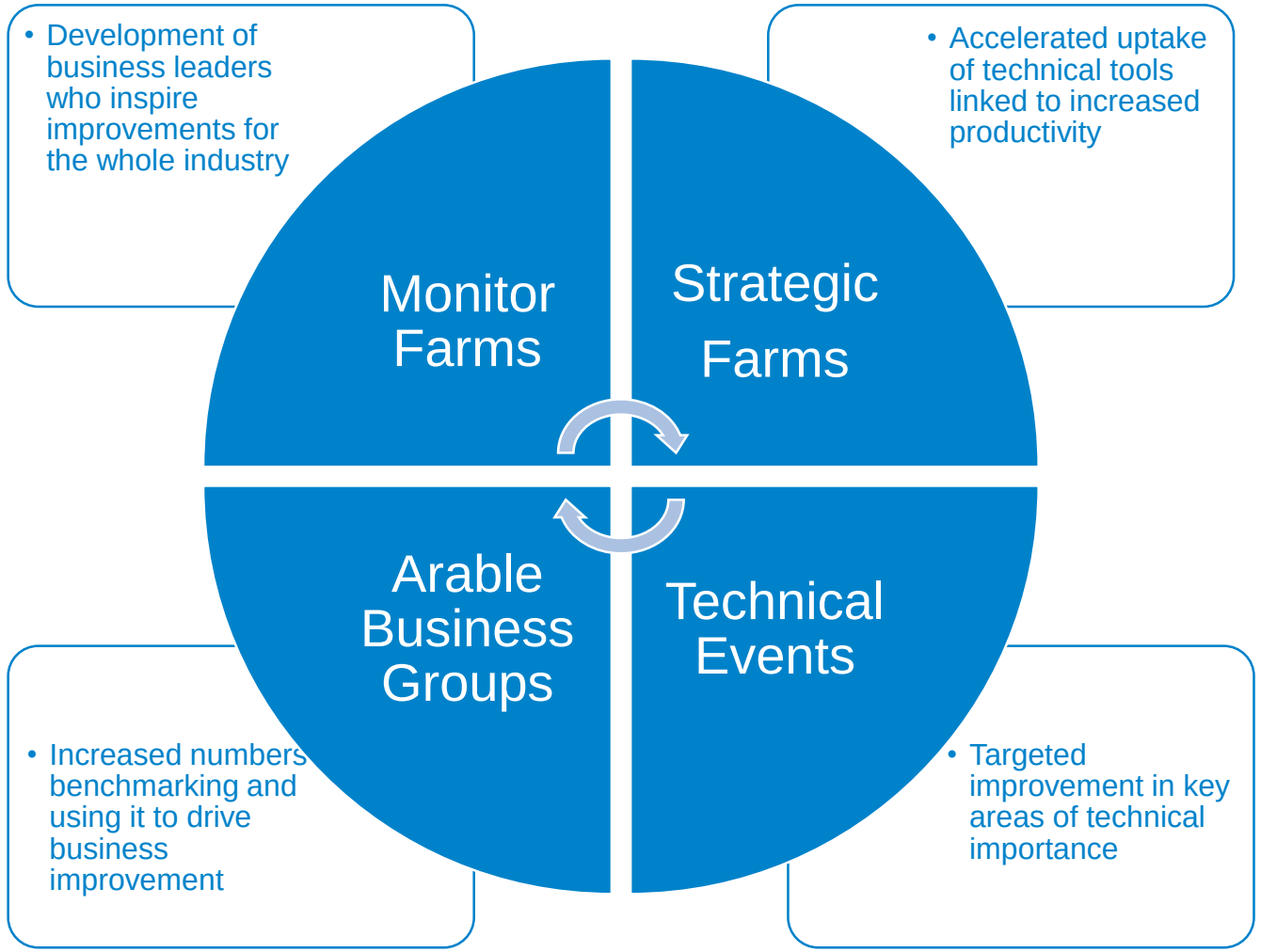
AHDB activity overview, including Monitor Farms and Strategic Farms

Emily Smith, AHDB

CEREALS & OILSEEDS

Farm Excellence Platform

Harnessing the proven benefits of "farmer to farmer" learning



FARMBENCH

Cereals & Oilseeds Knowledge Exchange Team

Tim Isaac
Head of Knowledge Exchange

Emily Smith
Knowledge Transfer Manager

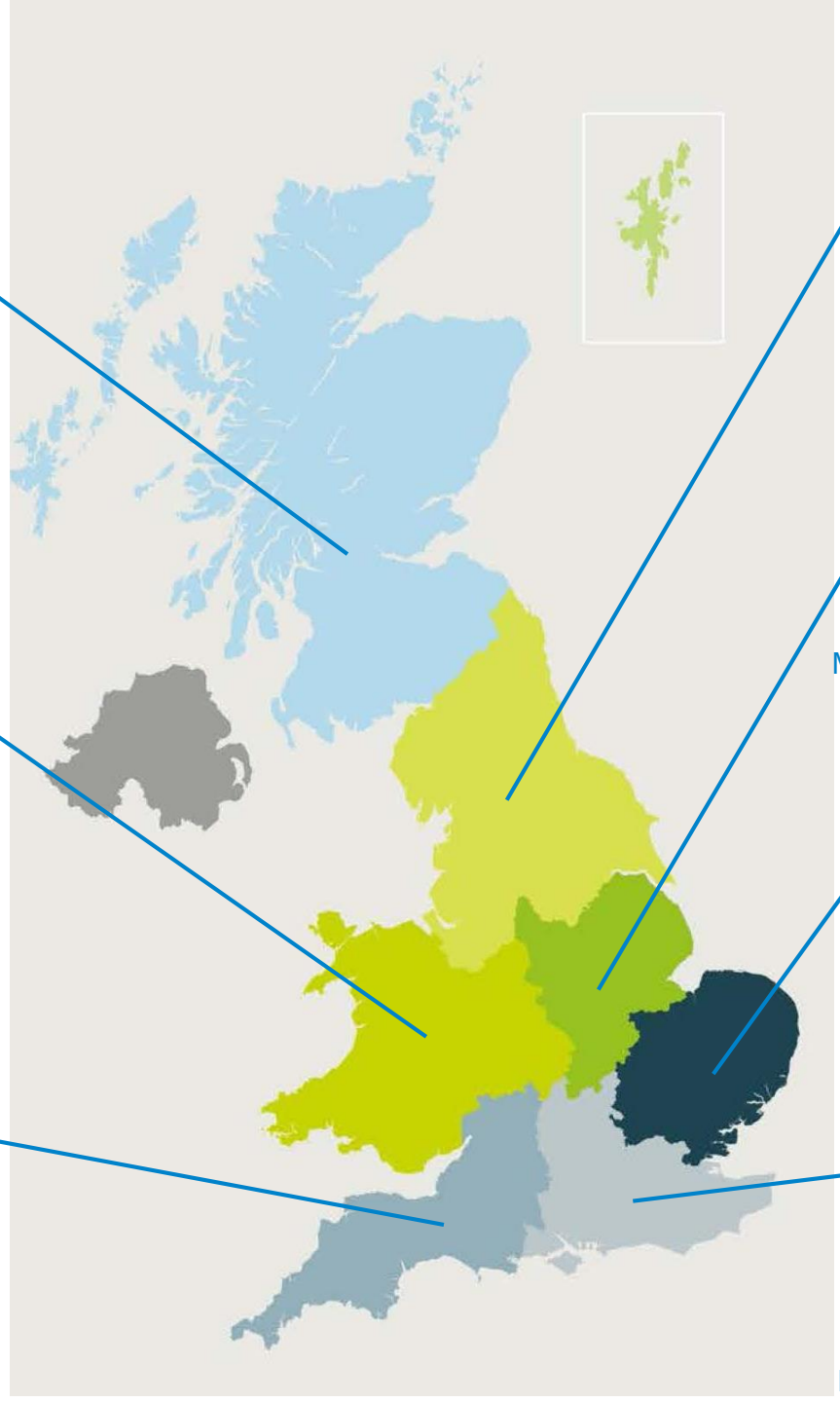
Louise Petrakas
Knowledge Exchange Coordinator

Fiona Geary
Knowledge Transfer Officer

Gavin Dick
Knowledge Exchange Manager – Scotland

Richard Meredith
Knowledge Exchange Manager – West and Wales

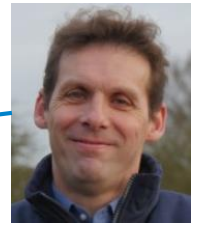
Philip Dolbear
Knowledge Exchange Manager – South West



Judith Stafford
Knowledge Exchange Manager – North and Northern Ireland

Harry Henderson
Knowledge Exchange Manager – East Midlands

Teresa Meadows
Knowledge Exchange Manager – East Anglia



Paul Hill
Knowledge Exchange Manager – South East

Cereals & Oilseeds
Monitor Farms (2014 to 2018)

Phase 1: April 2014 – March 2017

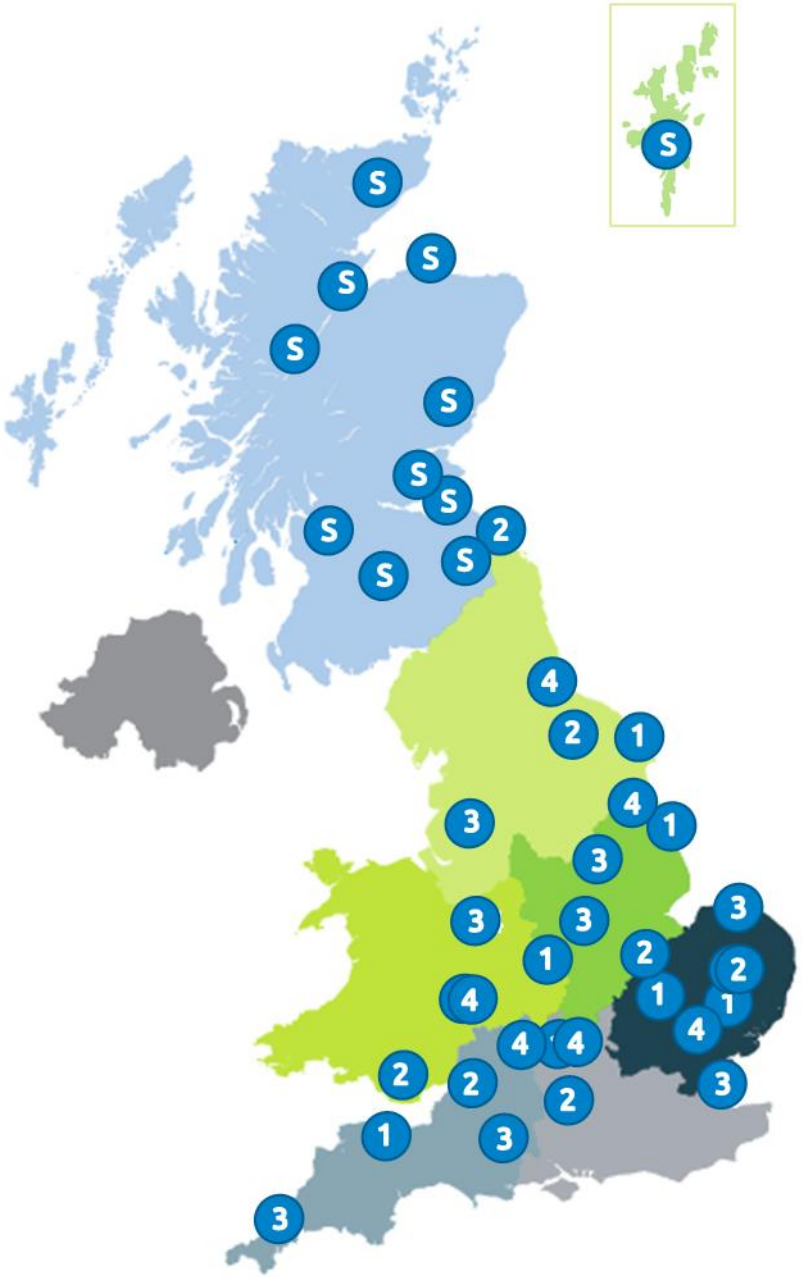
Phase 2: Oct 2014 – Sep 2017

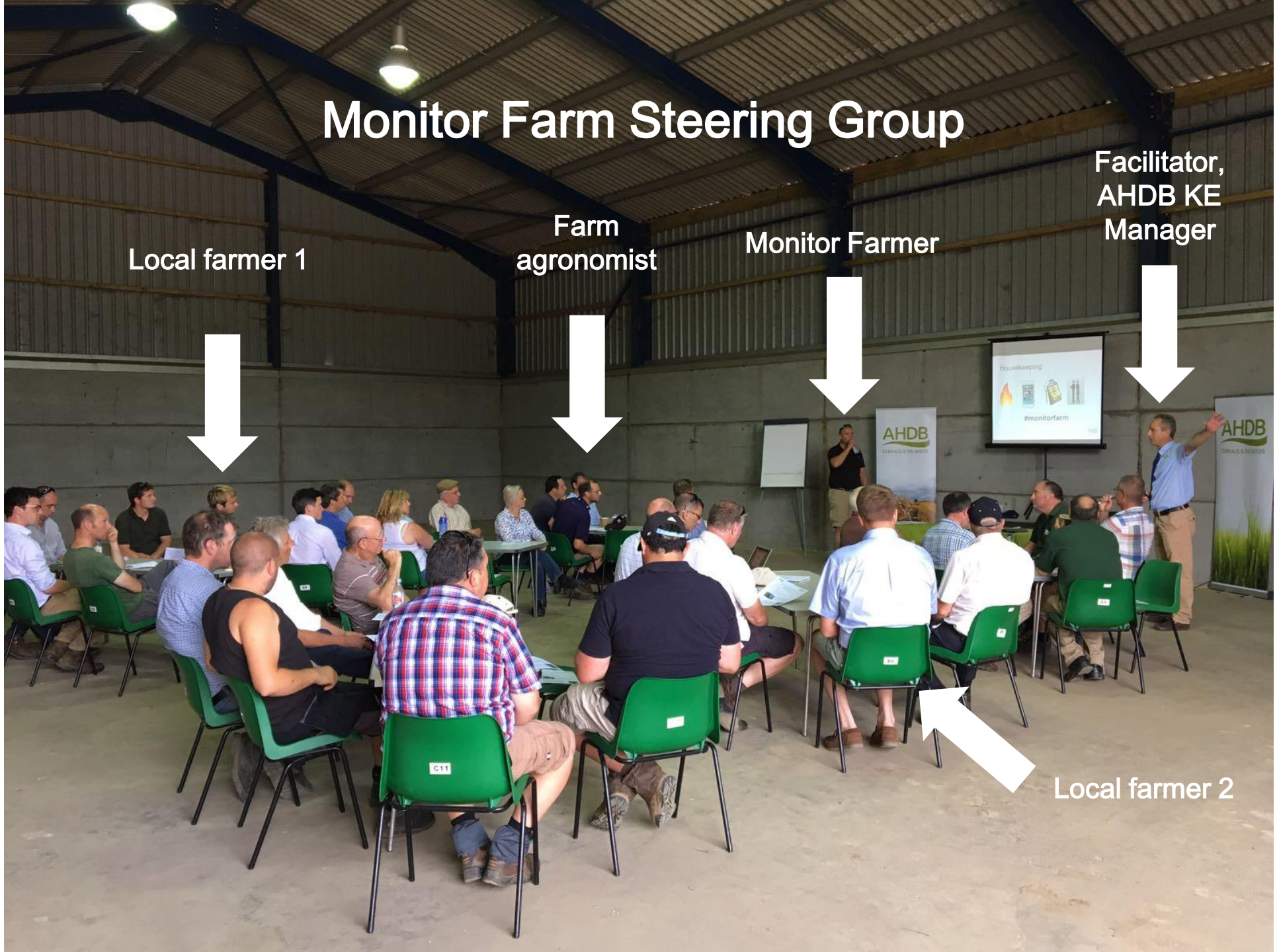
Phase 3: April 2015 – March 2018

Phase 4: April 2017 – March 2020

Scotland: 2016 – 2020

Phase 5: currently recruiting




Monitor Farm Steering Group
Local farmer 1
Farm agronomist
Monitor Farmer
Facilitator, AHDB KE Manager
Local farmer 2
AHDB
#monitorfarm


Arable Business Group
Local farmer 1
Monitor Farmer
Facilitator, AHDB KE Manager
Local farmer 2
AHDB
#monitorfarm

Monitor Farm Group

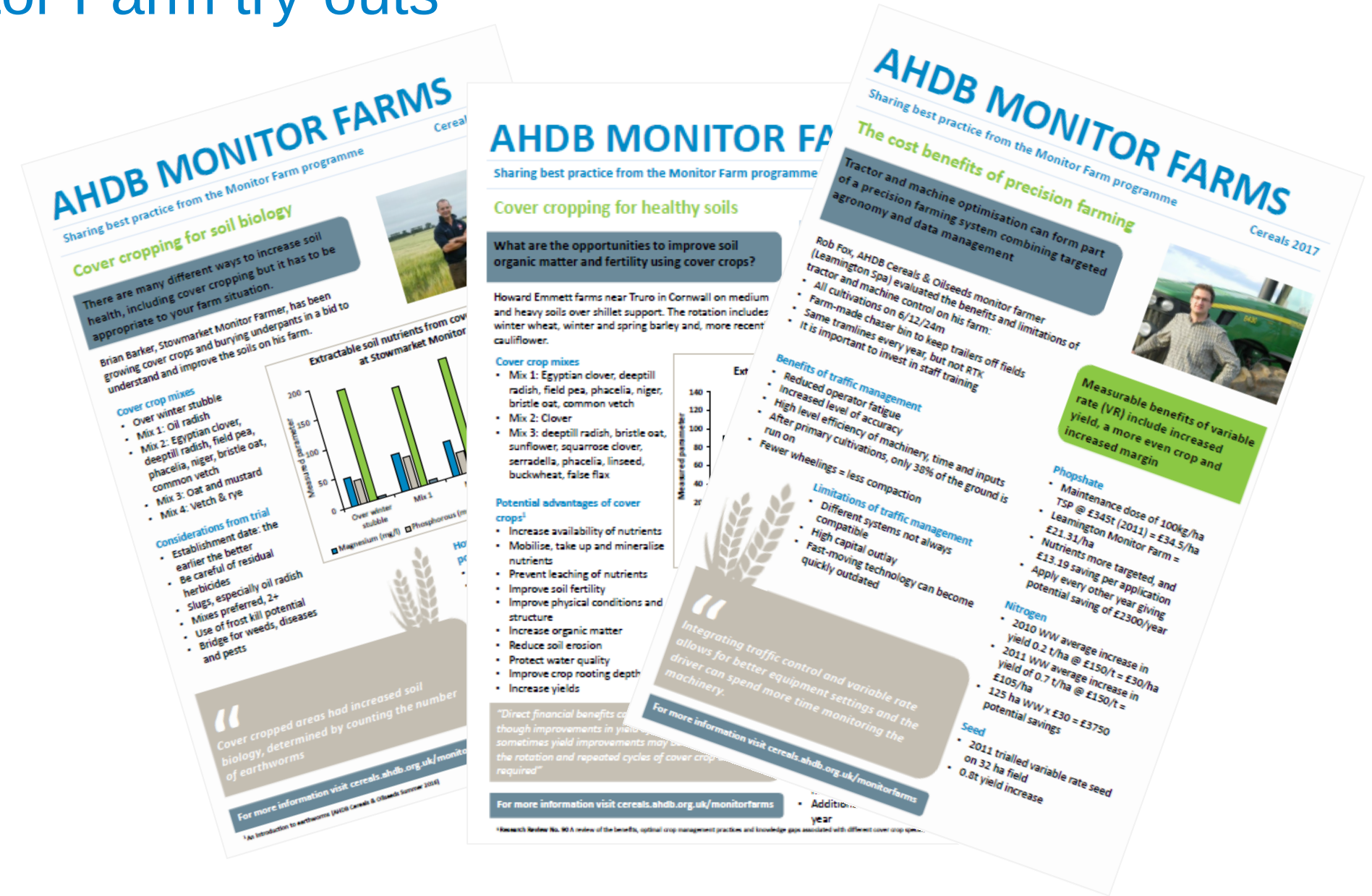
“farmer led, farmer driven”

Meeting topics

Expert

Experts

Monitor Farm try-outs



AHDB MONITOR FARMS

Sharing best practice from the Monitor Farm programme

Cover cropping for soil biology

There are many different ways to increase soil health, including cover cropping but it has to be appropriate to your farm situation.

Brian Barker, Stowmarket Monitor Farmer, has been growing cover crops and burying underpants in a bid to understand and improve the soils on his farm.

Cover crop mixes

- Over winter stubble
- Mix 1: Oil radish
- Mix 2: Egyptian clover, deeptill radish, field pea, phacelia, niger, bristle oat, common vetch
- Mix 3: Oat and mustard
- Mix 4: Vetch & rye

Considerations from trial

- Establishment date: the earlier the better
- Be careful of residual herbicides
- Slugs, especially oil radish
- Mixes preferred, 2+
- Use of frost kill potential
- Bridge for weeds, diseases and pests

Extractable soil nutrients from cover at Stowmarket Monitor

Over winter stubble | Mix 1 | Magnesium (mg/l) | Phosphorous

"Cover cropped areas had increased soil biology, determined by counting the number of earthworms"

For more information visit cereals.ahdb.org.uk/monitorfarms

AHDB MONITOR FA

Sharing best practice from the Monitor Farm programme

Cover cropping for healthy soils

What are the opportunities to improve soil organic matter and fertility using cover crops?

Howard Emmett farms near Truro in Cornwall on medium and heavy soils over shillet support. The rotation includes winter wheat, winter and spring barley and, more recent cauliflower.

Cover crop mixes

- Mix 1: Egyptian clover, deeptill radish, field pea, phacelia, niger, bristle oat, common vetch
- Mix 2: Clover
- Mix 3: deeptill radish, bristle oat, sunflower, squarrose clover, serradella, phacelia, linseed, buckwheat, false flax

Potential advantages of cover crops[1]

- Increase availability of nutrients
- Mobilise, take up and mineralise nutrients
- Prevent leaching of nutrients
- Improve soil fertility
- Improve physical conditions and structure
- Increase organic matter
- Reduce soil erosion
- Protect water quality
- Improve crop rooting depth
- Increase yields

"Direct financial benefits c... though improvements in yield... sometimes yield improvements may... the rotation and repeated cycles of cover crop... required"

For more information visit cereals.ahdb.org.uk/monitorfarms

- Additio... year

[1] Research Review No. 90 A review of the benefits, optimal crop management practices and knowledge gaps associated with different cover crop spec...

AHDB MONITOR FARMS

Sharing best practice from the Monitor Farm programme

The cost benefits of precision farming

Cereals 2017

Tractor and machine optimisation can form part of a precision farming system combining targeted agronomy and data management

Rob Fox, AHDB Cereals & Oilseeds monitor farmer (Leamington Spa) evaluated the benefits and limitations of tractor and machine control on his farm:

- All cultivations on 6/12/24m
- Farm-made chaser bin to keep trailers off fields
- Same tramlines every year, but not RTK
- It is important to invest in staff training

Benefits of traffic management

- Reduced operator fatigue
- Increased level of accuracy
- High level efficiency of machinery, time and inputs
- After primary cultivations, only 38% of the ground is run on
- Fewer wheelings = less compaction

Limitations of traffic management

- Different systems not always compatible
- High capital outlay
- Fast-moving technology can become quickly outdated

"Integrating traffic control and variable rate allows for better equipment settings and the driver can spend more time monitoring the machinery."

For more information visit cereals.ahdb.org.uk/monitorfarms

Measurable benefits of variable rate (VR) include increased yield, a more even crop and increased margin

Phopshate

- Maintenance dose of 100kg/ha TSP @ £345t (2011) = £34.5/ha
- Leamington Monitor Farm = £21.31/ha
- Nutrients more targeted, and £13.19 saving per application
- Apply every other year giving potential saving of £2300/year

Nitrogen

- 2010 WW average increase in yield 0.2 t/ha @ £150/t = £30/ha
- 2011 WW average increase in yield of 0.7 t/ha @ £150/t = £105/ha
- 125 ha WW x £30 = £3750 potential savings

Seed

- 2011 trialled variable rate seed on 32 ha field
- 0.8t yield increase

Taking advantage of collective knowledge

DK Imperial

Drilled 25 August 2016

Yield: 5t/ha

22nd overall in competition

38% of estimated crop potential

Scope to increase the amount of light and water captured

Cereals & Oilseeds Strategic Farm East

Strategic Farms are based on commercial farms to bridge the gap between research trials and practical application

- Six-year programme
- Farmer-to-farmer learning
- Accelerate the uptake of knowledge
- Explore best practice
- Economic analysis of each demonstration

Research projects to watch

Clubroot

- **Clubroot resistant varieties need to be used strategically so resistant strains build up as slowly as possible in affected fields**
- *Developing targeted management methods for clubroot through pathotyping and field mapping to establish the impact and spread of the disease in oilseed rape*

Rhizoctonia

- **Initial results indicate genetic differences in resistance to *Rhizoctonia solani* in Brassica species**
- **Establishment loss can be recovered by an effective seed treatment**
- *Integrating control strategies against soil-borne Rhizoctonia solani in UK Oilseed rape (ICAROS)*

Research projects to watch

Light leaf spot (LLS)

- **Differences in LLS development on varieties across different locations and seasons, suggesting difference in fungal populations across UK**
- **Large populations of spores are produced from May onwards and continue throughout summer, which is earlier than previously reported**
- *Investigating components of oilseed rape light leaf spot epidemic*
- **Identifying resistance genes in commercial OSR cultivars and exploit those which exhibit good resistance to LLS**
- *Exploitation of resistance genes from oilseed rape for control of light leaf spot (PhD)*

Research projects to watch

Forecasts

- **Provision of oilseed rape decision support systems to the UK arable industry**
- *Forecasts produced each autumn for light leaf spot and phoma stem canker*

Putting it into practice

1. Use an integrated approach
2. Increase awareness of soil health
3. Increase awareness of soil chemical properties
4. Increase awareness of field variations

Get involved

cereals.ahdb.org.uk/monitorfarms

#monitorfarm

cereals.ahdb.org.uk/strategic-farms

#strategicfarm


‘Inspiring our farmers, growers
and industry to succeed in a
rapidly changing world’

United Oilseeds

AHDB

United Oilseeds and AHDB Joint Seminar

Brexit & the Oilseeds sector

Amandeep Kaur Purewal

Senior Analyst, AHDB Market Intelligence

CEREALS & OILSEEDS

Outline

- Potential impact of Brexit on UK rapeseed
- Future direction of EU/UK biodiesel production & implications

Brexit effect

Opportunities & Challenges

Tariff scene setting

Tariff scene setting

Commodity	Tariff*, €/t
Soft wheat (low, medium quality)	95 (12 if in quota)
Barley	93 (8 - 16 if in quota)
Oats	89
Oilseed rape	0

*outside Tariff Rate Quota system or once quota limit is exhausted

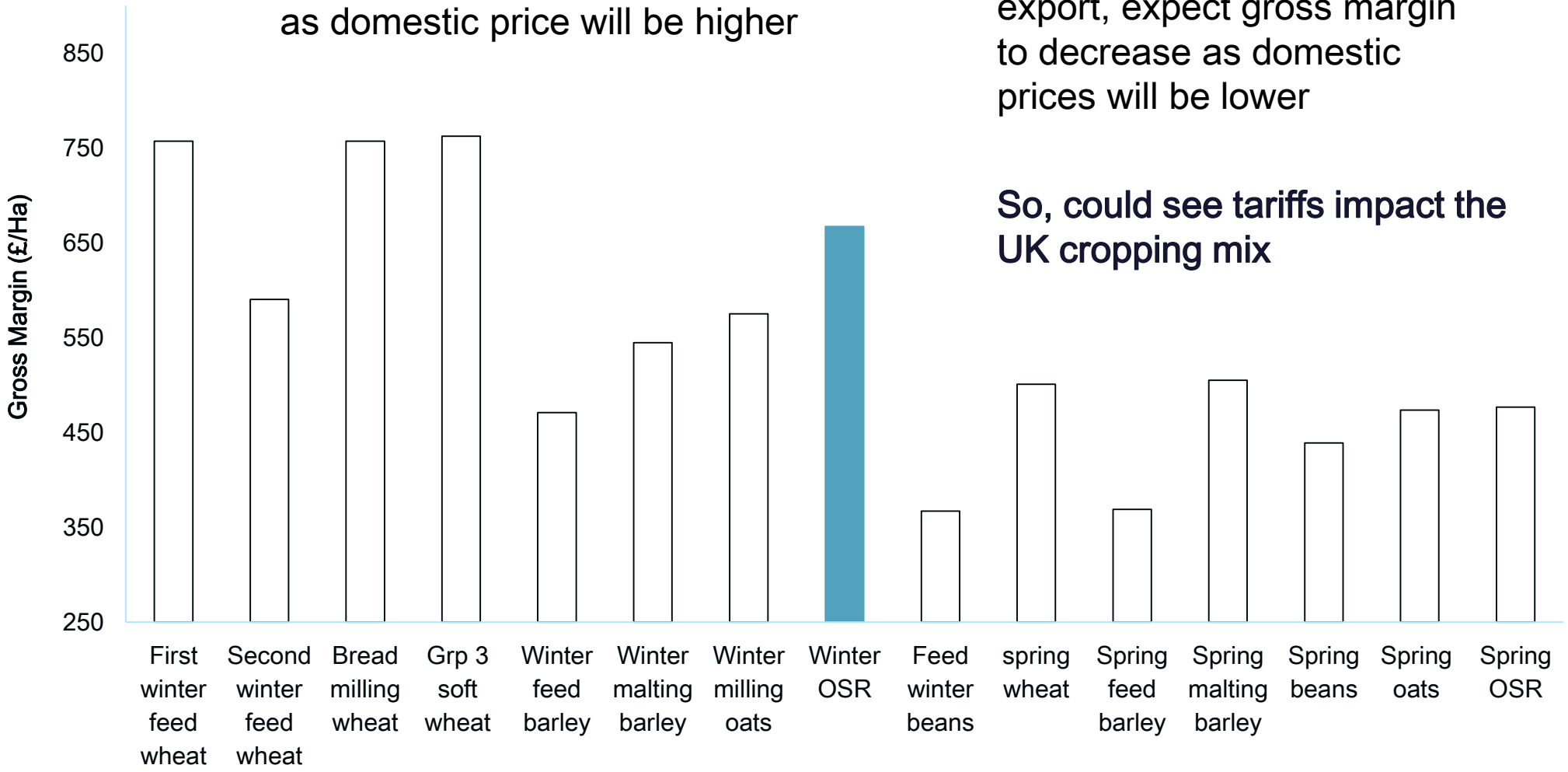
Source: AHDB Horizon: What might Brexit mean for UK trade in Cereals and Oilseeds

If tariffs are in place…

For crops we typically import, expect gross margin to increase as domestic price will be higher

For crops we typically export, expect gross margin to decrease as domestic prices will be lower

So, could see tariffs impact the UK cropping mix



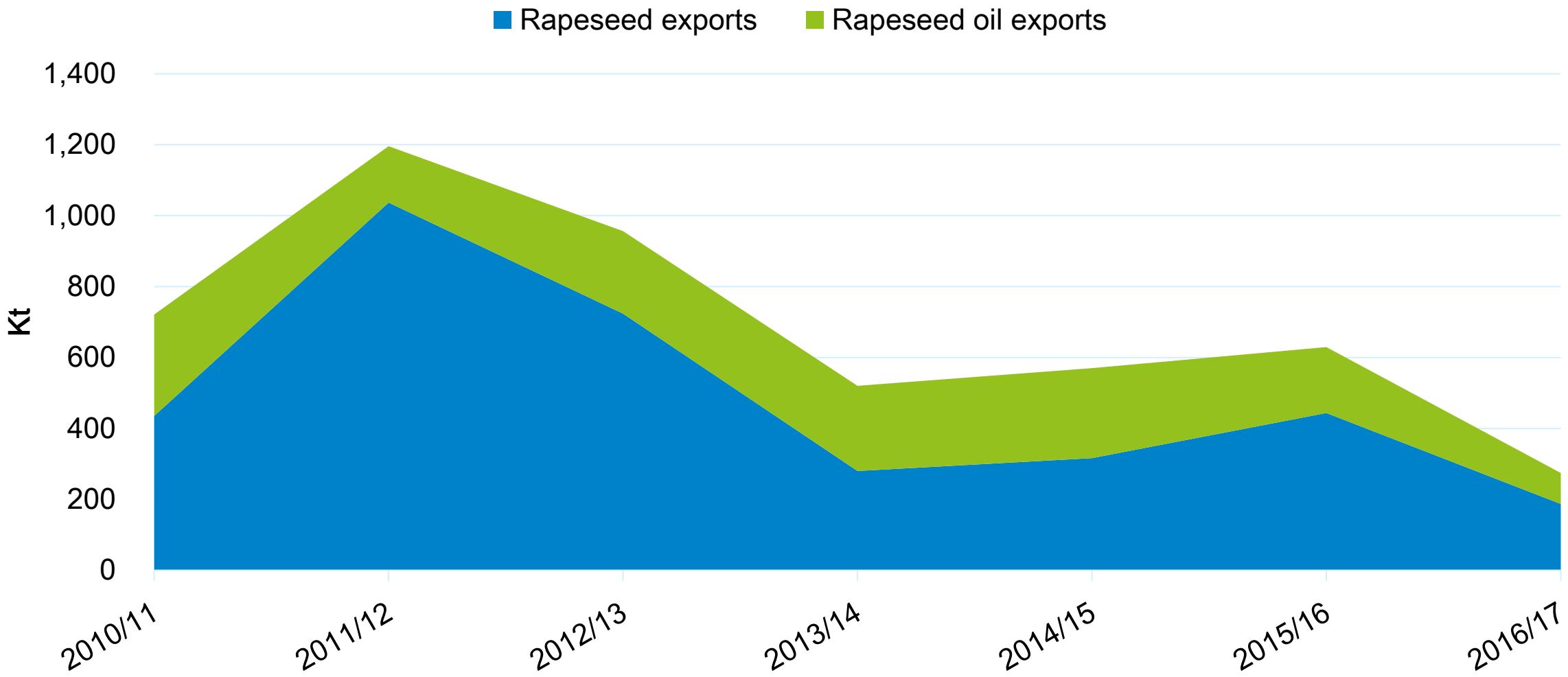
Source: AHDB

Vegetable oils have tarrifs…

Commodity	Tariff
Rapeseed , low erucic acid (excluding seed for sowing)	None
Rapeseed, high erucic acid	None
Soyabeans (excluding seed for sowing)	None
Crude rapeseed oil (excluding for technical/industrial uses)	6.4%
Rapeseed oil, low erucic acid (excluding crude or for technical/industrial uses)	9.6%
Soyabean oil (excluding crude or for technical/industrial uses)	9.6%
Crude palm oil (excluding for technical/industrial uses)	3.8%
Sunflowerseed oil (excluding crude or for technical/industrial uses)	9.6%

Source: Eurostat TARIC database

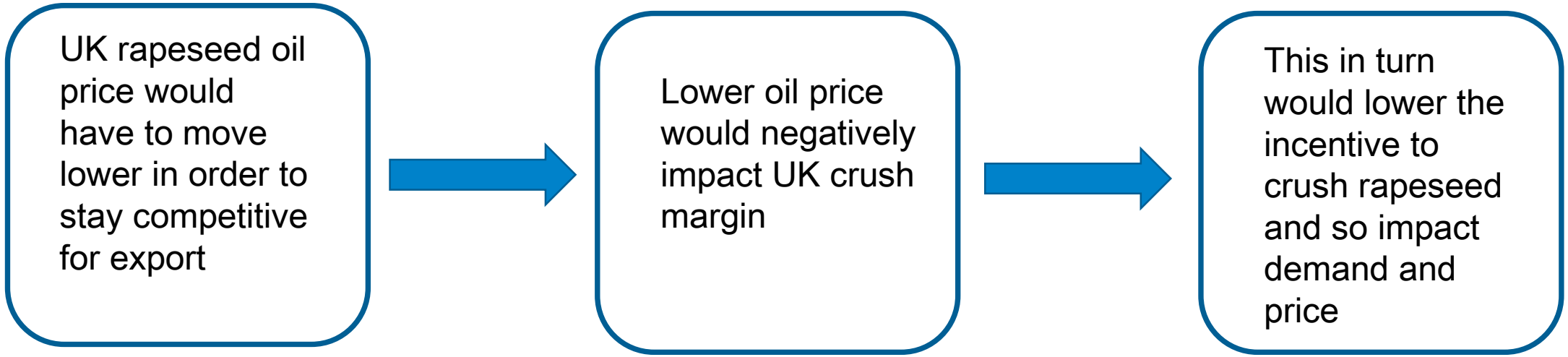
UK rapeseed oil exports compared with rapeseed exports



Source: HMRC

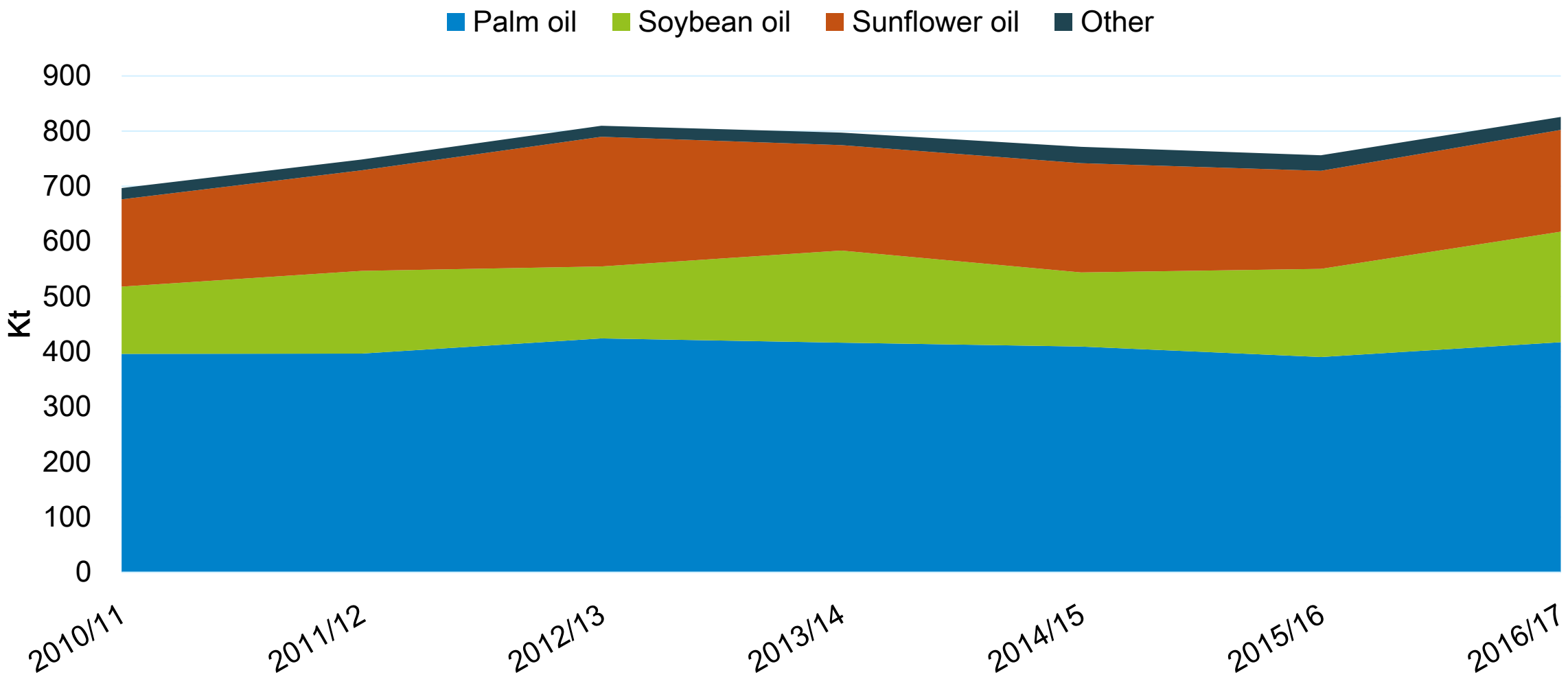
Possible implications of tariffs on UK rapeseed oil

- UK is net exporter of rapeseed oil
- If a tariff was placed on exports:



However, tariffs could also be placed on vegetable oil imports…

UK veg oil imports – substitutability?

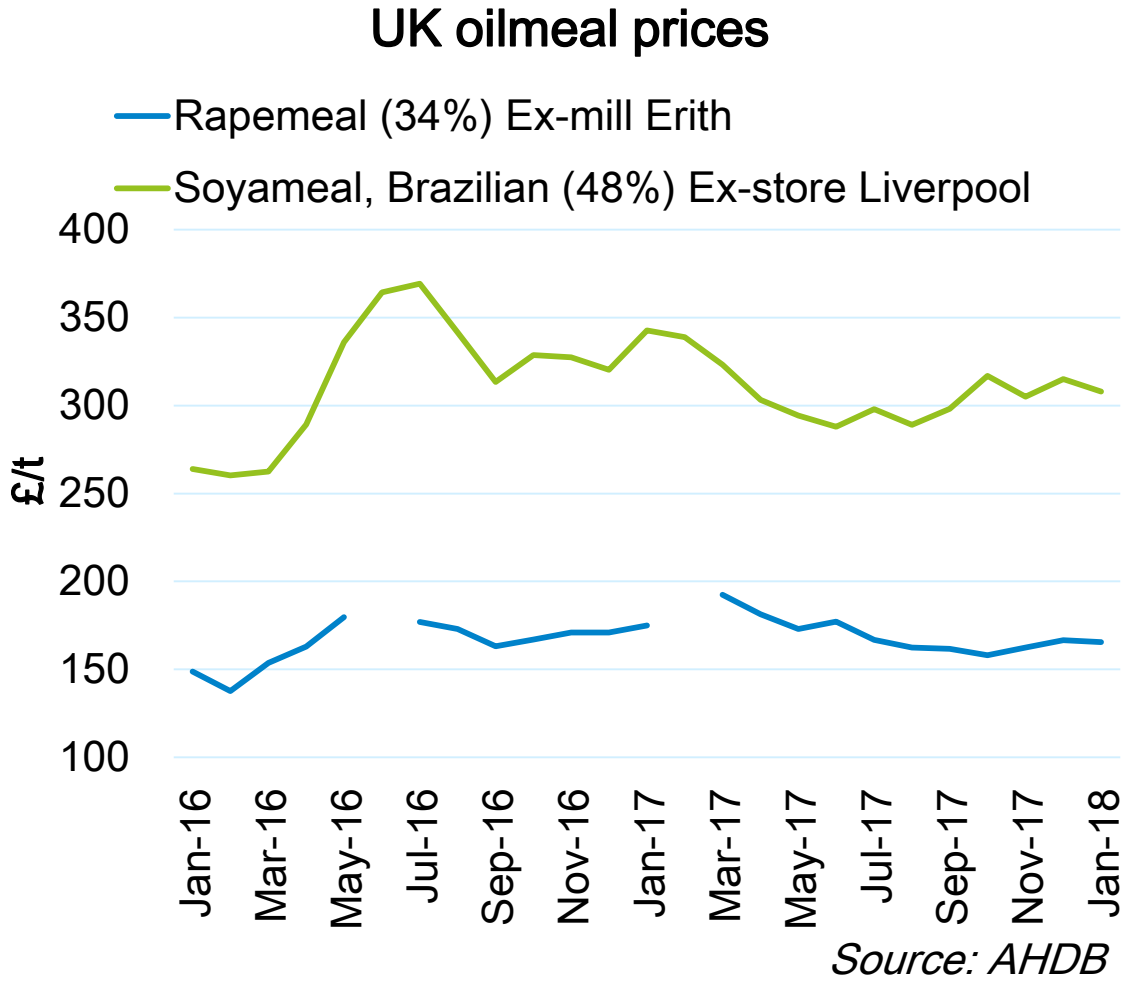


Source:

Potential tariffs on soyameal imports suggest the UK needs to improve its self-sufficiency in protein feed

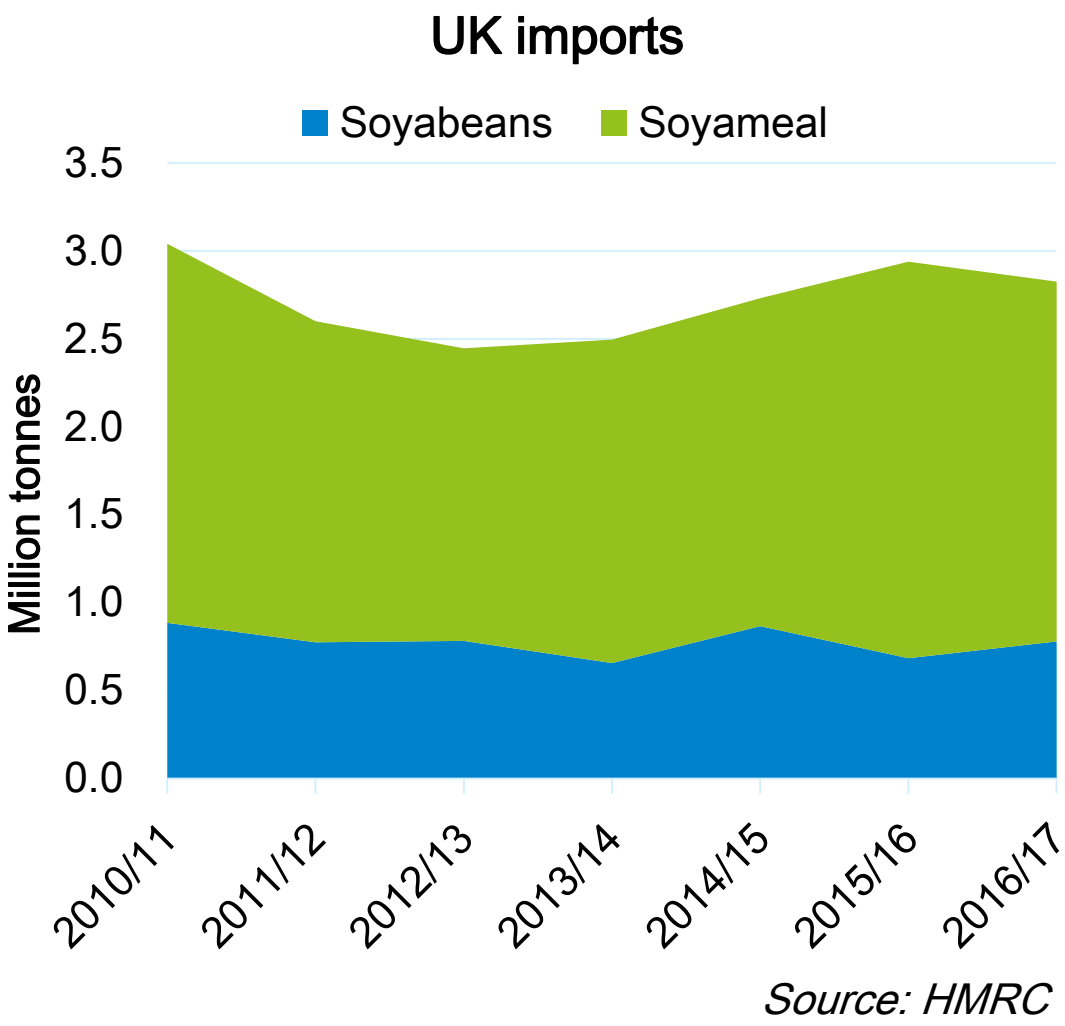
- UK is net importer of rapemeal
- No tariff on rapemeal
- Tariff on soyameal: 4.5%

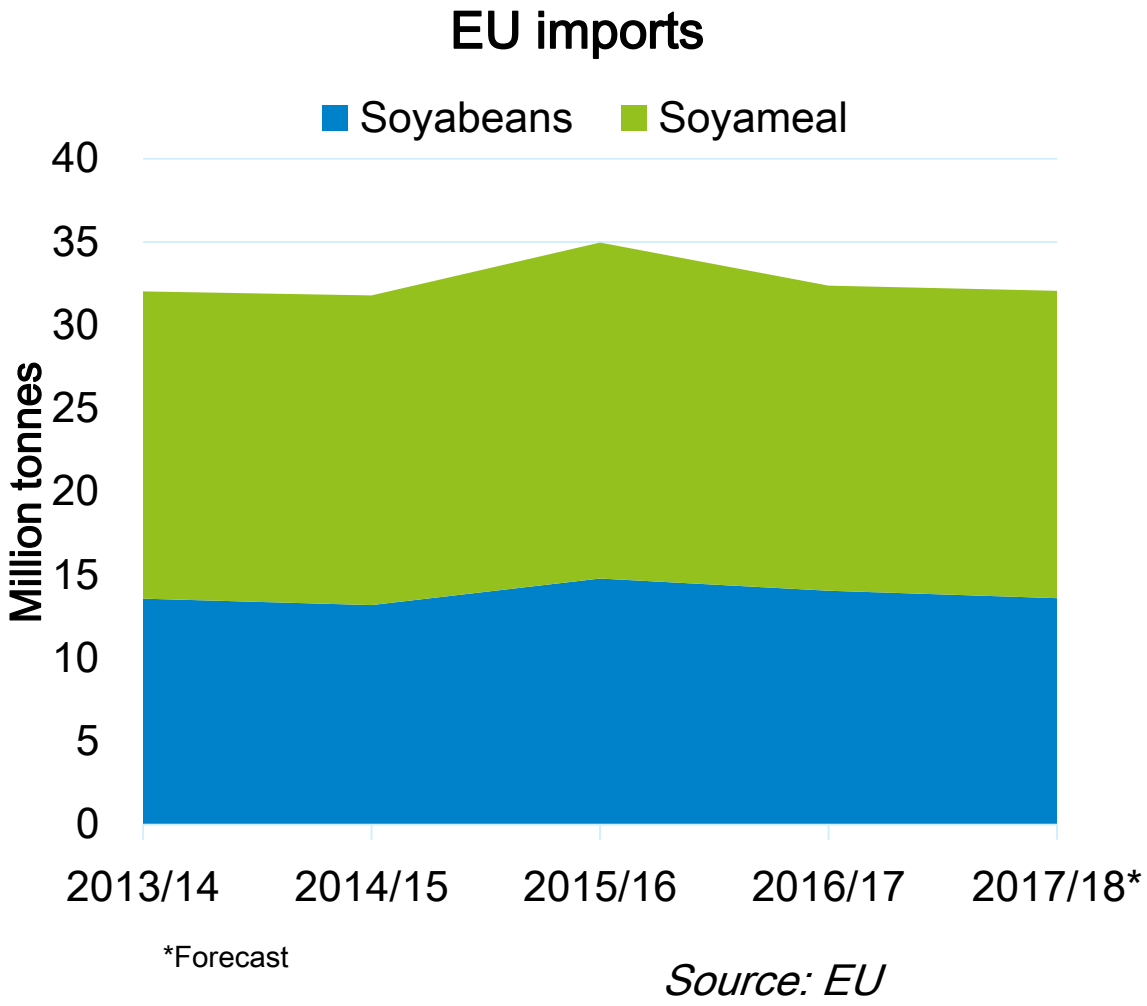
- **GB animal feed demand (5-year average):**
  Rapeseed meal and cake – 688Kt
  Soyabean meal and cake – 1,104Kt
- Incentive to reduce reliance on soyameal imports



Source: AHDB

UK and EU soyabean/soyameal imports



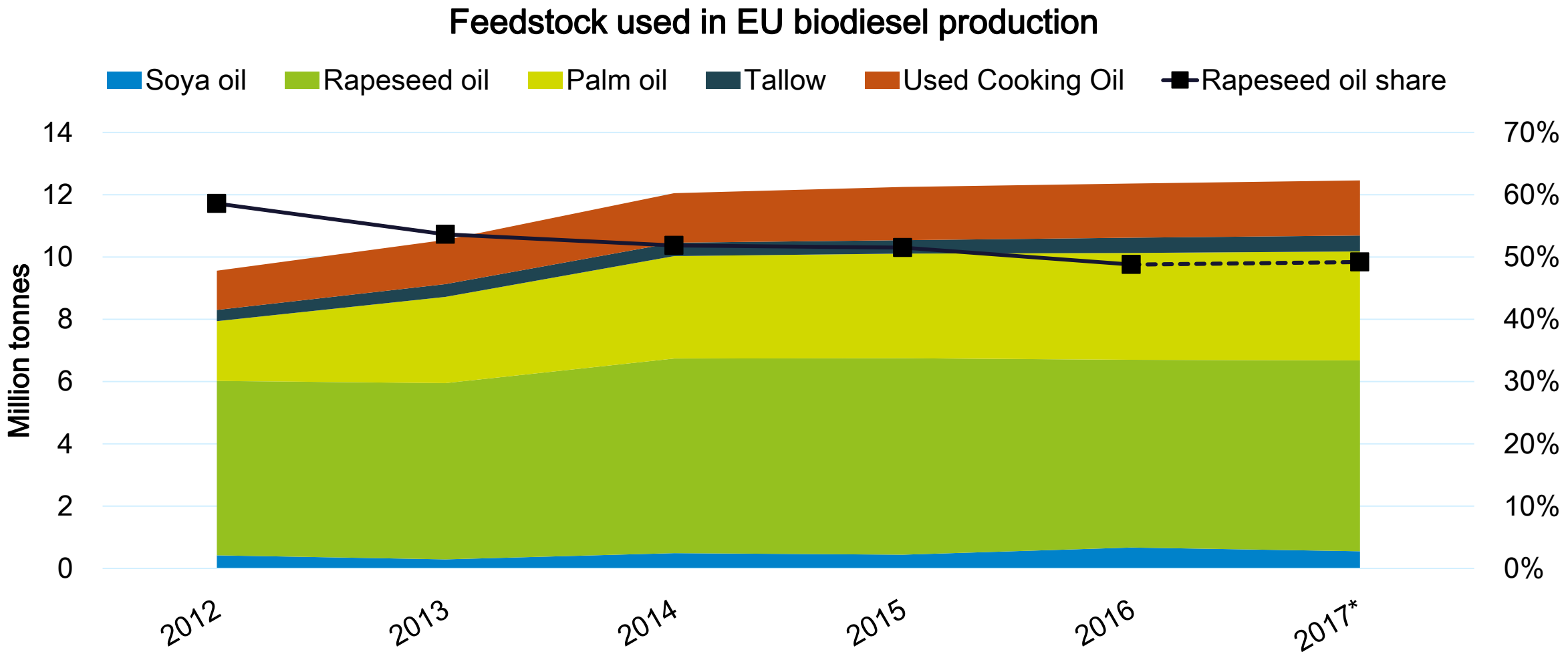


Biofuels

Implications for rapeseed oil demand

CEREALS & OILSEEDS

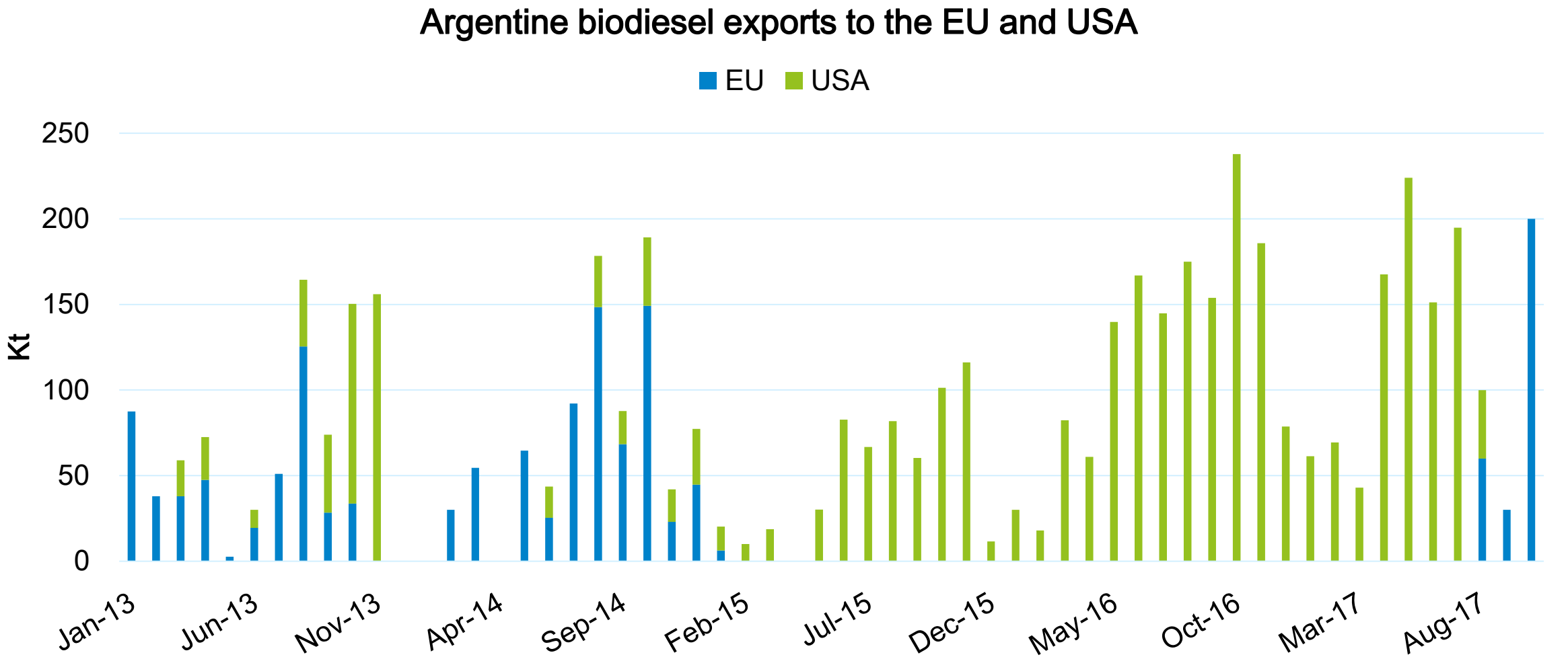
Over 60% of EU rapeseed oil demand is for biodiesel production



* Forecast

Source: Oil World (www.oilworld.biz)

Threat to EU rapeseed oil demand as anti-dumping duties on Argentine biodiesel imports reduced



Source: Argentine Ministry of Energy

Journey through EU biofuel policy…

2009 – First RED
10% of energy used in transport to come from renewable sources by 2020

2015 – Amendment
Proportion of food-based biofuels that can contribute to 10% target capped at 7%

2016 – Clean Energy Package
- No overall renewable energy target in transport proposed.
- Proposal for reducing cap on food-based biofuels from 7% to 3.8% by 2030

Jan 2018 – RED II
(European Parliament)
- 12% of energy used in transport to come from renewable sources by 2030.
- Cap for food based biofuels to remain at 7%. Member state shares must not exceed 2017 levels.
- Ban palm oil in biofuels from 2021

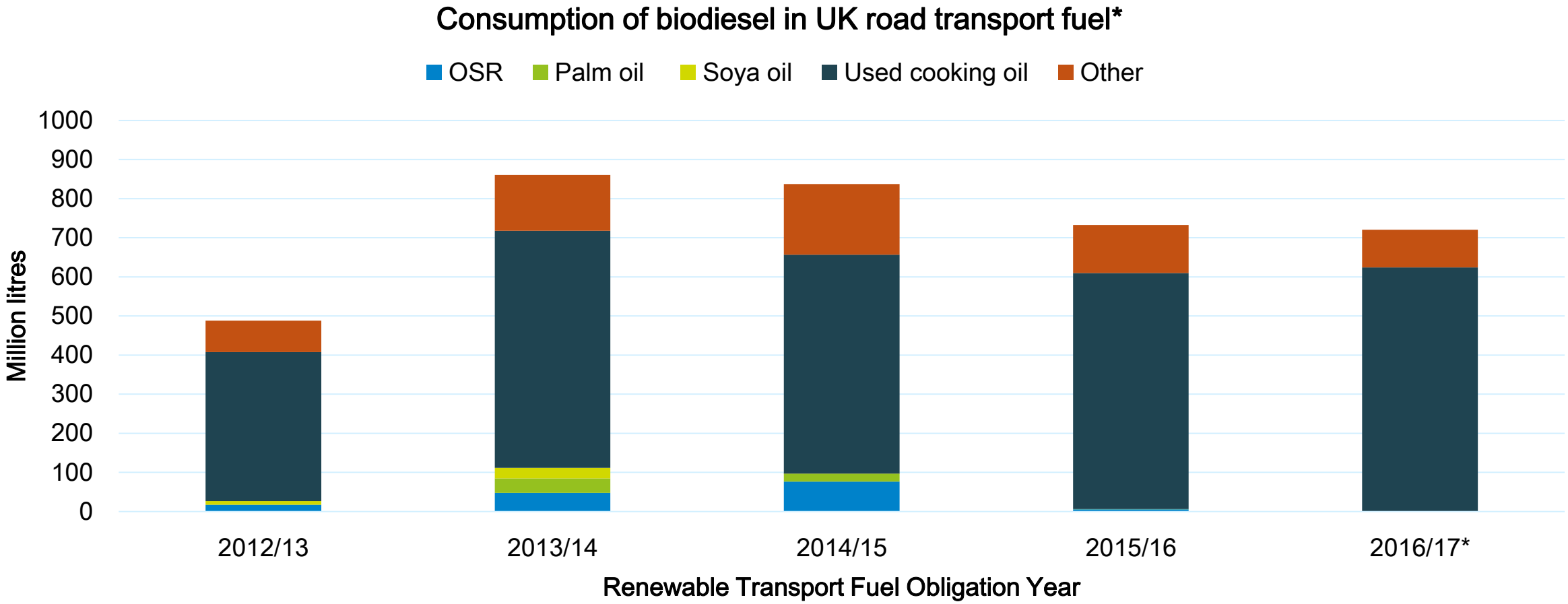
Dec 2017 – RED II
(Member state level)
- 14% of energy used in transport to come from renewable sources by 2030.
- Cap for food based biofuels to remain at 7%*.

* If a member state's share of food-based biofuels is less than 7%, it qualifies for a lower overall target

UK biofuels policy

- Increase the Renewable Transport Fuel Obligation target to 9.75% in 2020
- Target from 2020 – 2032 to gradually increase from 9.75% to 12.4%
- Development fuels sub-target to gradually increase from 0.15% in 2020 to 2.8% in 2032
- Cap on crop based biofuels to steadily decline from 4% in 2020 to 2% in 2032

Used Cooking Oil is main raw material for UK biodiesel production



*Includes imported biodiesel
RTFO reporting year runs from April – April

Source : Department for Transport

Key Points

- If a tariff system for trade is in place after Brexit, rapeseed will not be affected directly as there is no tariff on oilseeds
- However, there could be indirect consequences
- The need to reduce soyameal imports is already on the radar, but could be accelerated by Brexit
- EU biofuel policy could arguably have a larger effect on UK rapeseed than Brexit

Thank you

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CEREALS & OILSEEDS

United Oilseeds

AHDB

United Oilseeds and AHDB Joint Seminar

Meeting close

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