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AHDB
AGRICULTURE & HORTICULTURE DEVELOPMENT BOARD

Welcome to the Scotland Agronomy Roadshow 2025

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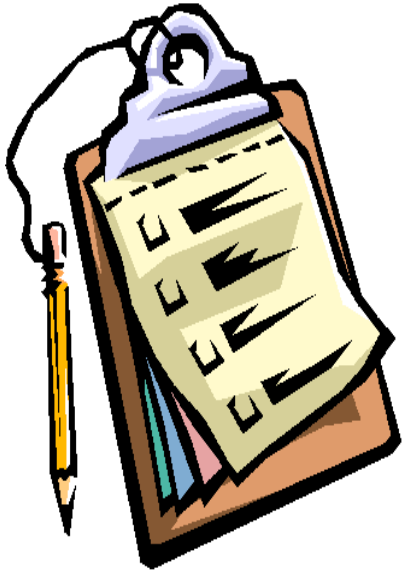
Farm Advisory Service

Before we start... Housekeeping



BASIS NR°SO

@AHDB_Cereals

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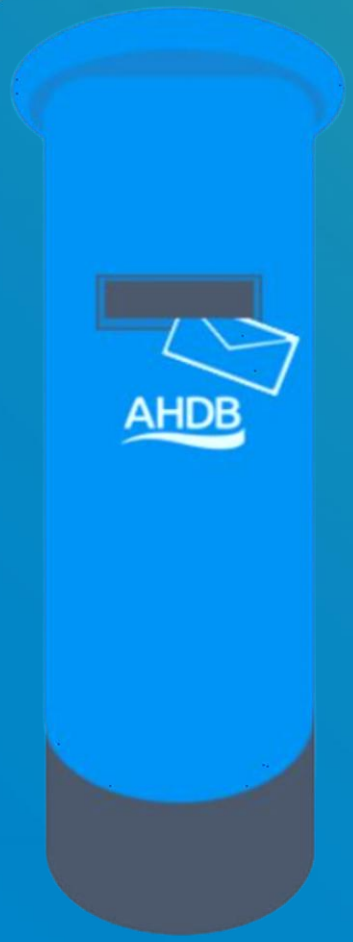
@Cereals_Scot

What research do **you** want to see?



- Keeping **levy payers** at the front & centre of research investment
- Ensure we keep answering the **most pressing questions** facing growers
- Want do **YOU** need to know to support your business?
- **Anyone** can submit an idea to the **'Letterbox'**

Email: research.ideas@ahdb.org.uk

Submit your research ideas now

Join the Recommended Lists (RL) team

Are you passionate about variety development and the future of cutting-edge crop variety trials?

The RL crop committees:

- Agree definitions for recommendation
- Select varieties for trial
- Propose new varieties to add to the RL

Web: ahdb.org.uk/rl
Email: rl@ahdb.org.uk
Phone: 024 7669 2051

Current vacancy:
A grower for the Oilseeds Crop Committee

Crop selection and variety performance

Steve Hoad
SRUC
steve.hoad@sruc.ac.uk

Agronomy Roadshows 2025

Facing the Future: Productive and sustainable cropping systems

Outline

- Crop harvest year 2023/24 and trends
- Review of the Scottish Cereals List 2025/26
  - Spring barley
  - Spring oats and spring wheat
  - Winter barley
  - Winter wheat

Crop harvest 2024

Source:
https://www.gov.scot/publications/cereal-and-oilseed-rape-harvest-final-estimates-2024/

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Area

	Area (Hectares)	Change from 2023
Total cereals	426,026	down 1%
Spring barley	257,507	up 3%
Winter barley	42,874	down 8%
Wheat	98,055	down 9%
Oats	27,590	up 5%
Oilseed rape	36,668	down 10%

- Wet weather affected winter plantings and spring growth
- Area of winter crops decreased
- Area of spring crops increased
- Total cereal area close to 20-year figure

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Crop harvest 2024

Source:
https://www.gov.scot/publications/cereal-and-oilseed-rape-harvest-final-estimates-2024/

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Yield

	Yield (Tonnes per hectare)	**Change from 2023**
Total cereals	7.0	down 2%
Spring barley	6.5	up 2%
Winter barley	7.6	up 2%
Wheat	8.4	down 8%
Oats	6.6	up 9%
Oilseed rape	3.6	down 11 %

- Good SB yields
- WB disappointing, though matches long-term average
- WW disappointing, compare with recent 9+ t/ha crops
- Oats yielded well

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Crop harvest 2024

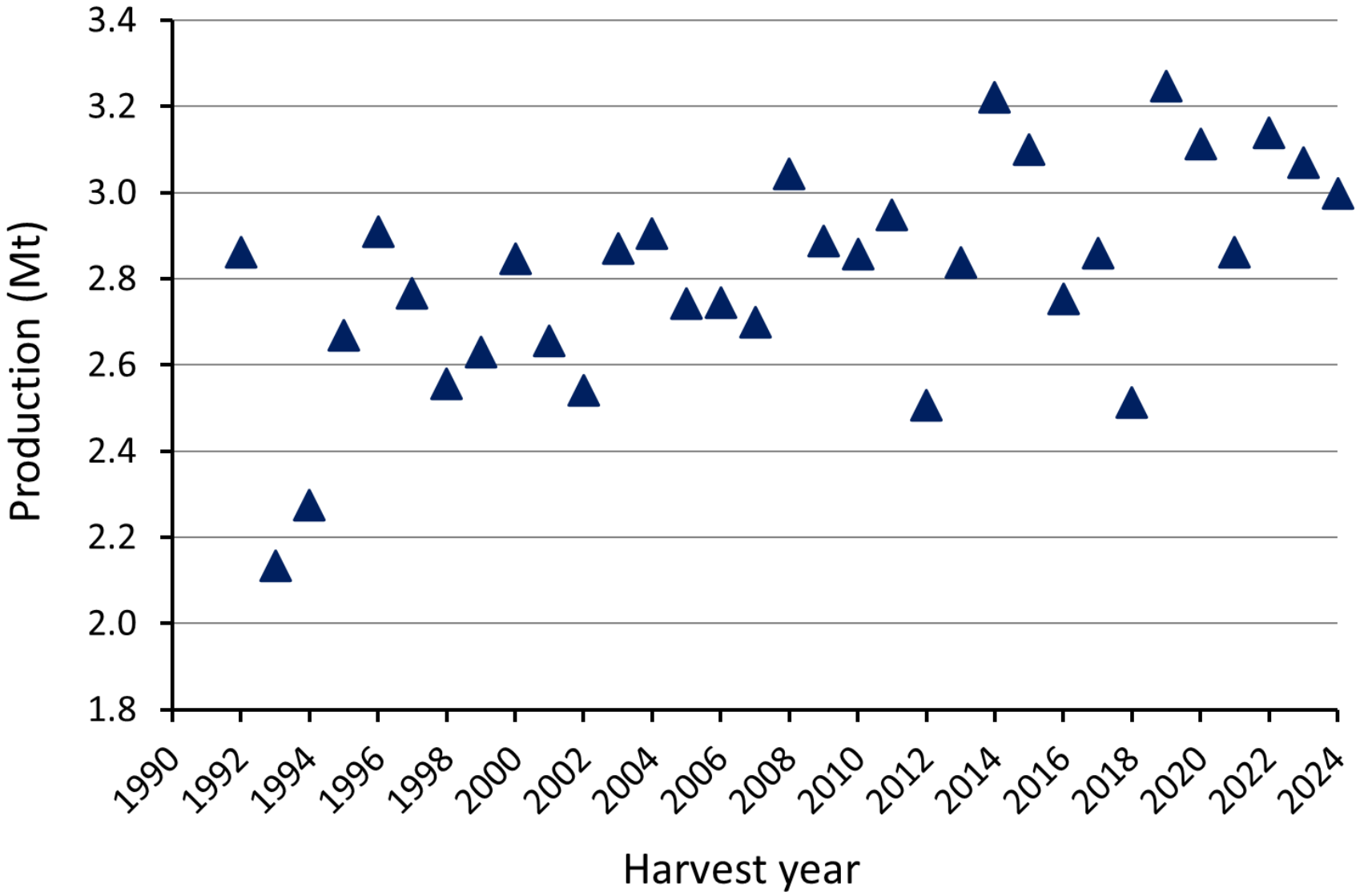
Source:
https://www.gov.scot/publications/cereal-and-oilseed-rape-harvest-final-estimates-2024/

Production

	Production (Tonnes)	Change from 2023
Total cereals	2,998,748	down 2%
Spring barley	1,663,207	up 5%
Winter barley	327,929	down 6%
Wheat	825,905	down 16%
Oats	181,707	up 15%
Oilseed rape	132,559	down 20%

- Total production 3.0 Mt
- Winter production driven by decrease in WB area and both WW area and yield
- Above average SB production
- Increase in oat production

Total cereal production



- Upwards trend
- Seasonal variation in area and yield
- Positive effects of new varieties and agronomy

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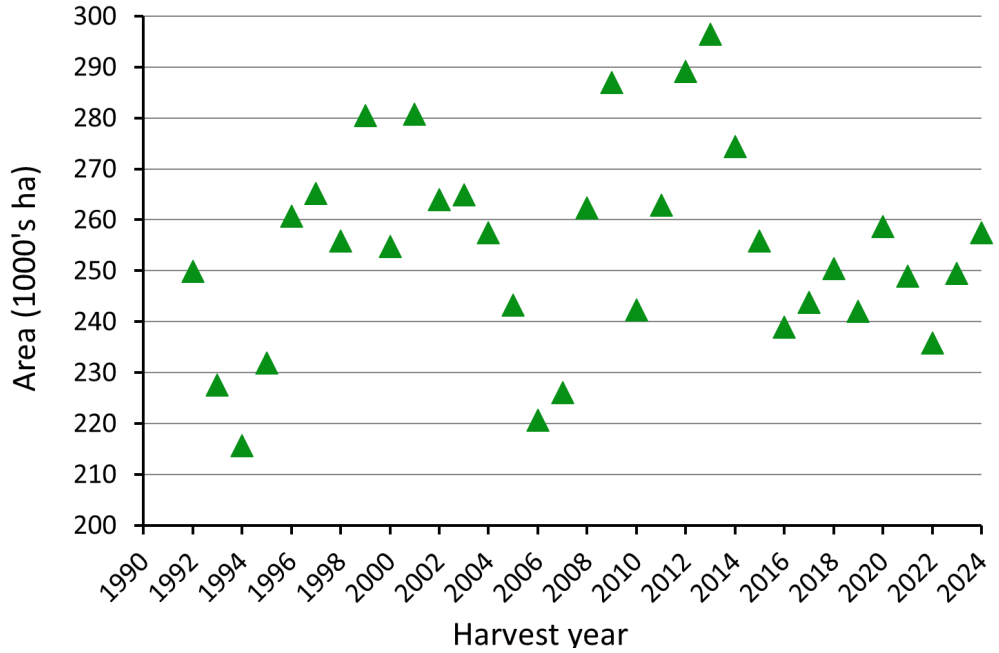
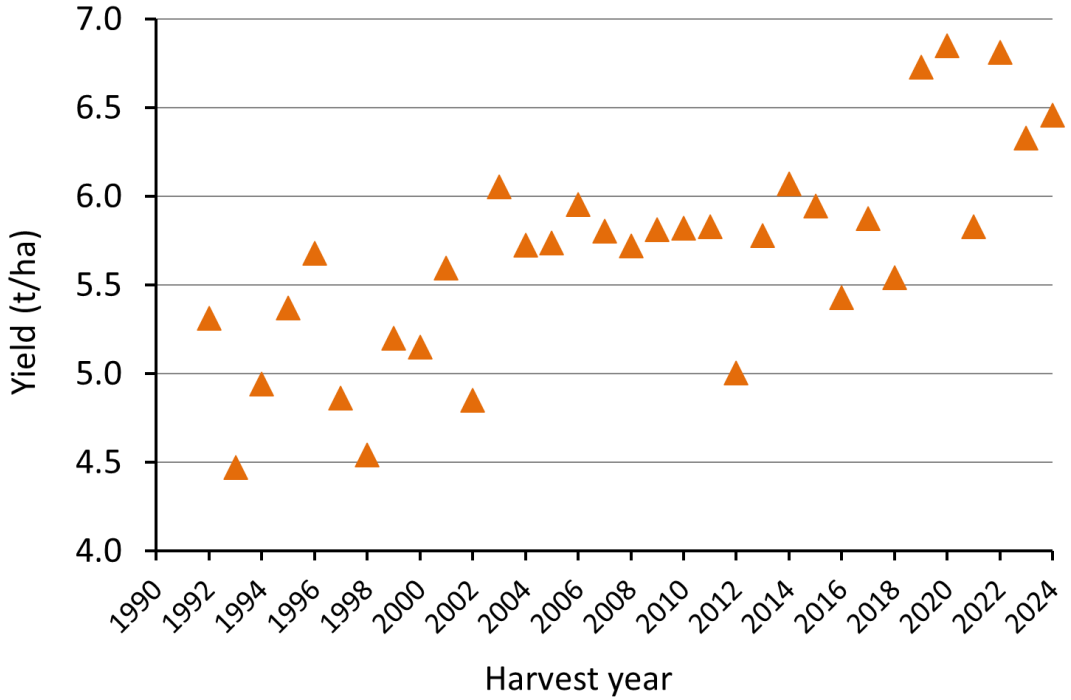
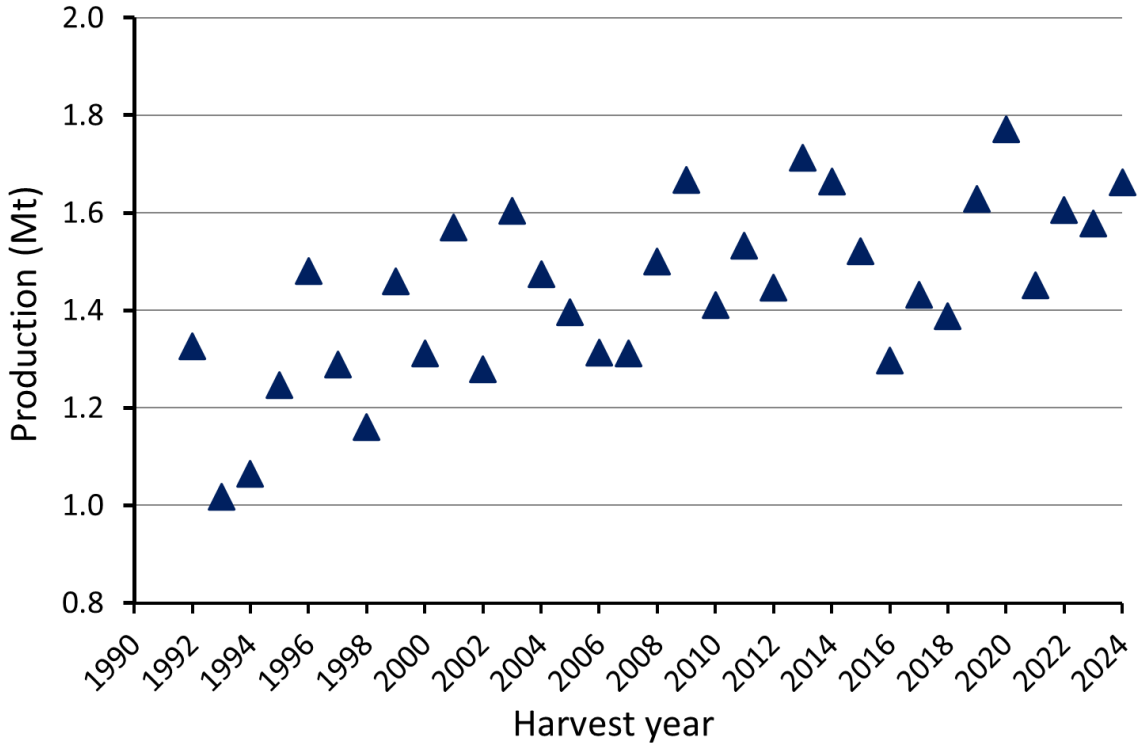
Spring barley production







- Maintained area
- Good yield and production

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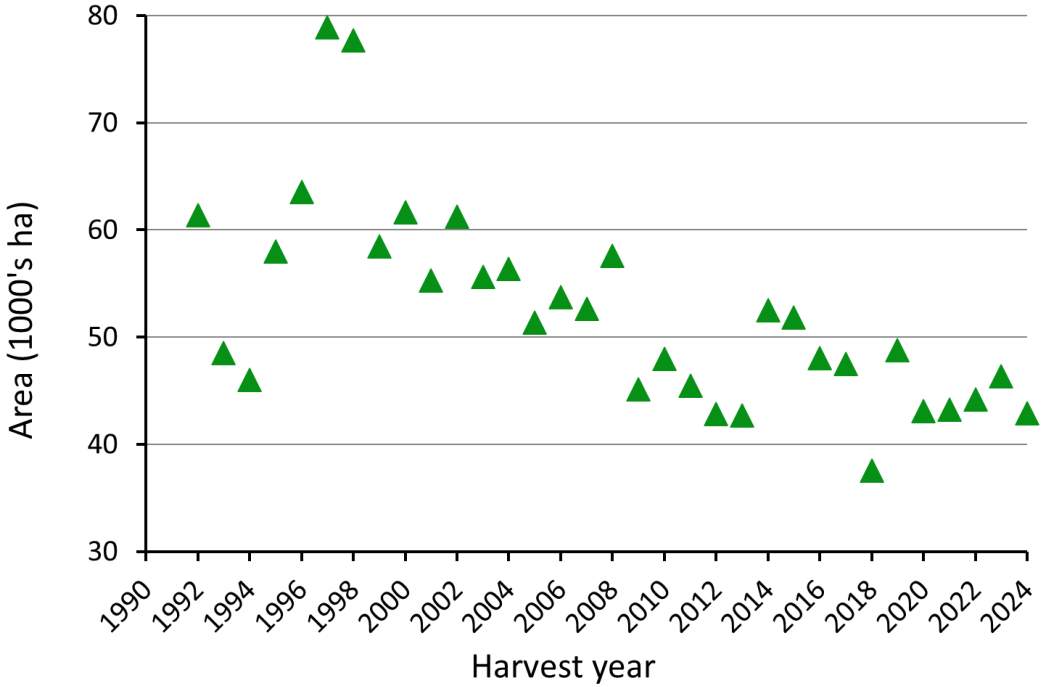
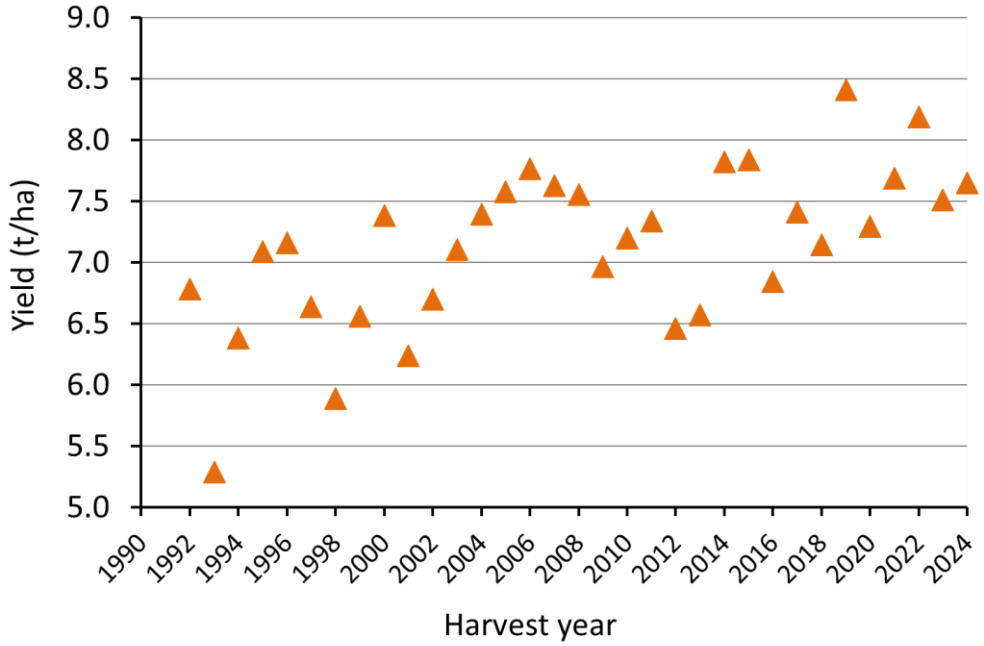
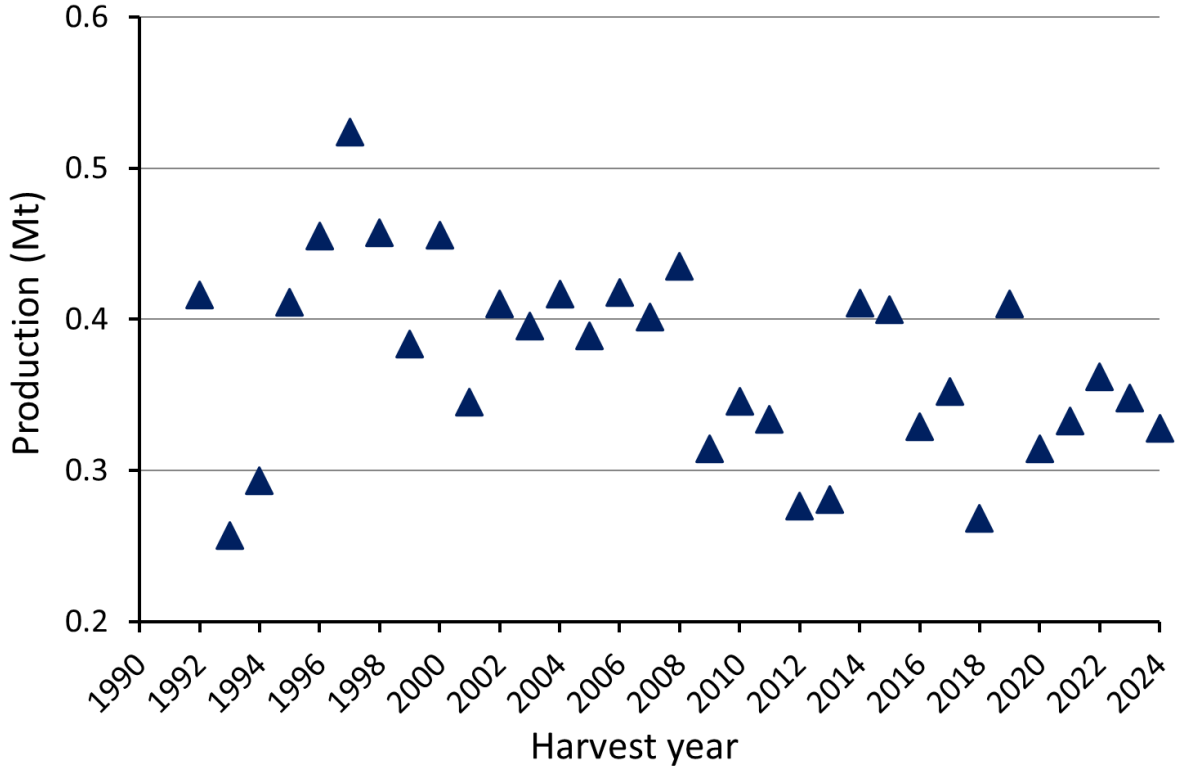
Winter barley production







- Area close to 5-year average
- Yield also average

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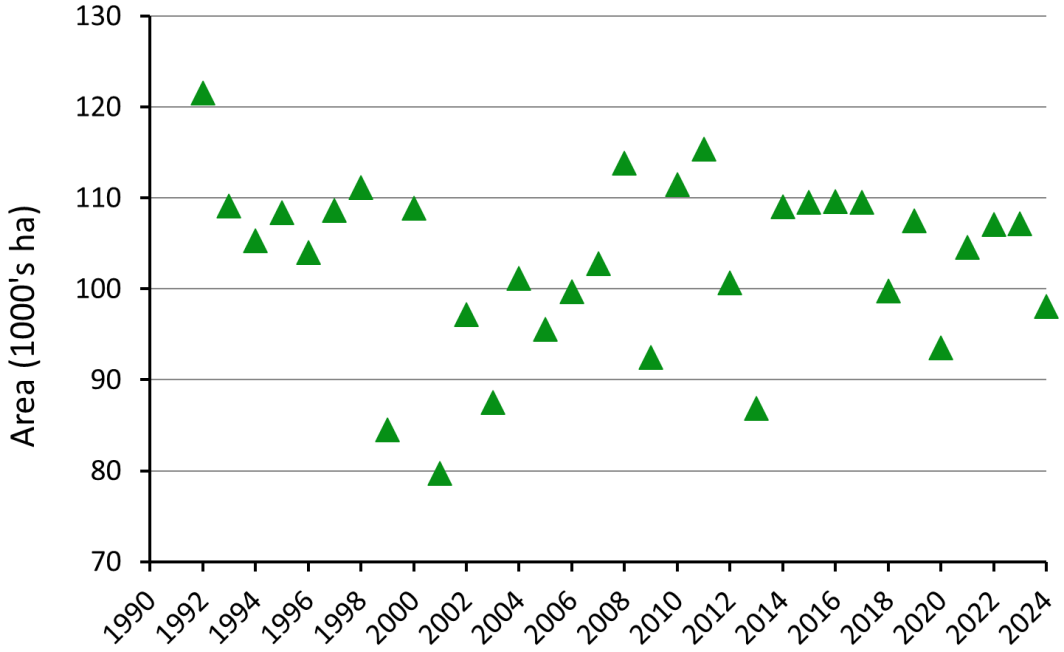
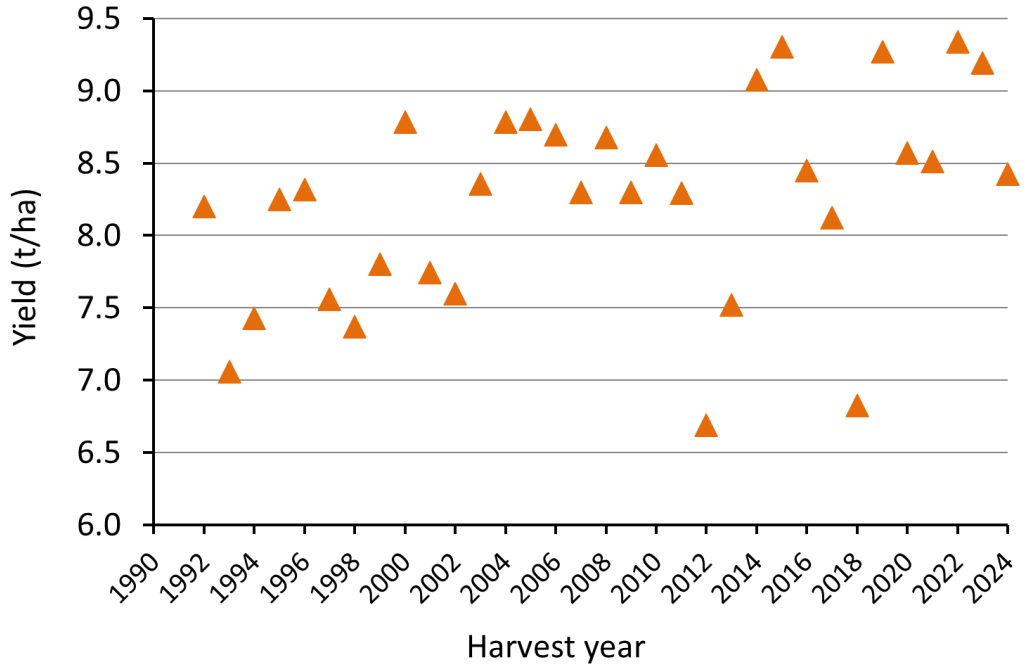
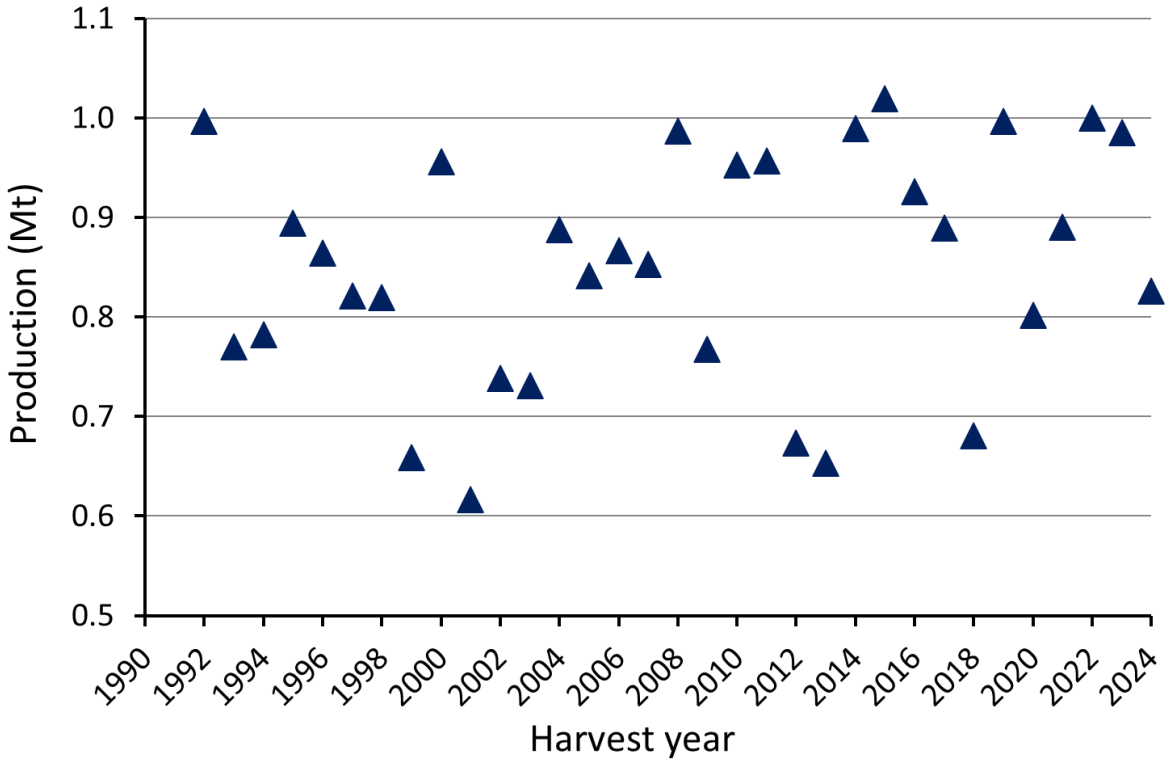
Winter wheat production







- Area and yield down
- Disappointing production

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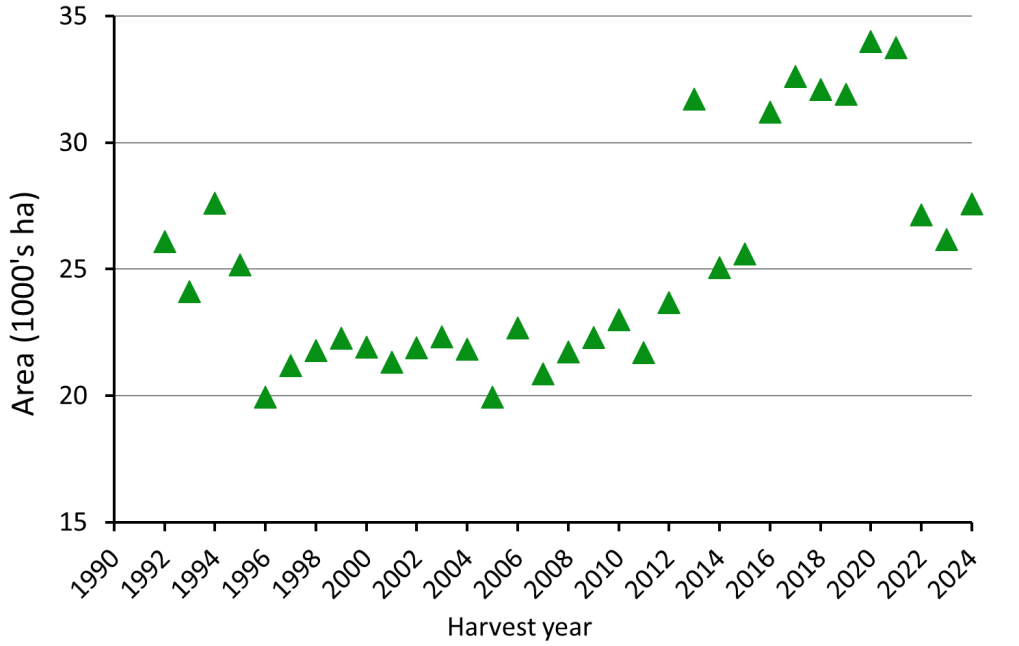
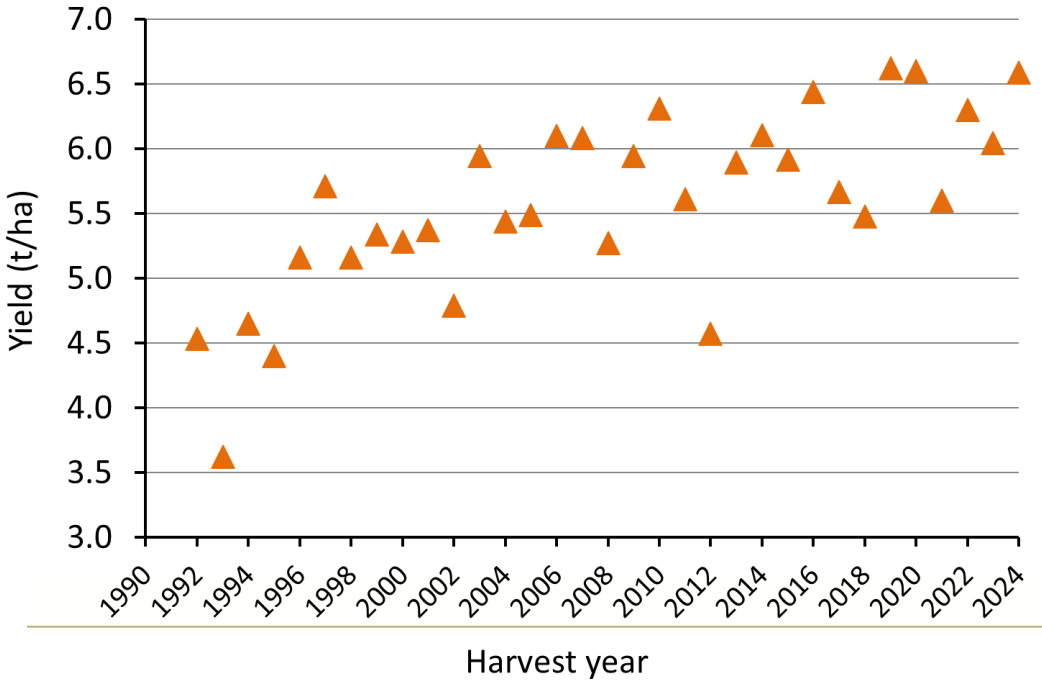
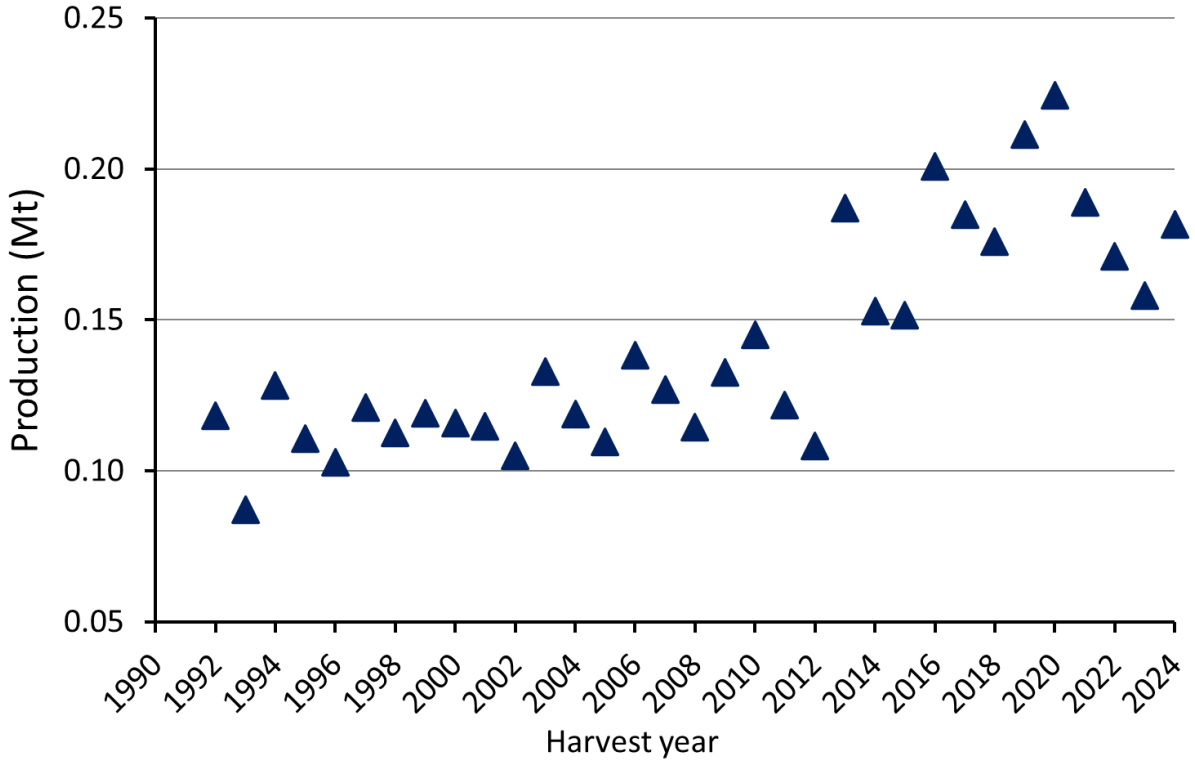
Oat production







- Very good yield
- Towards good production

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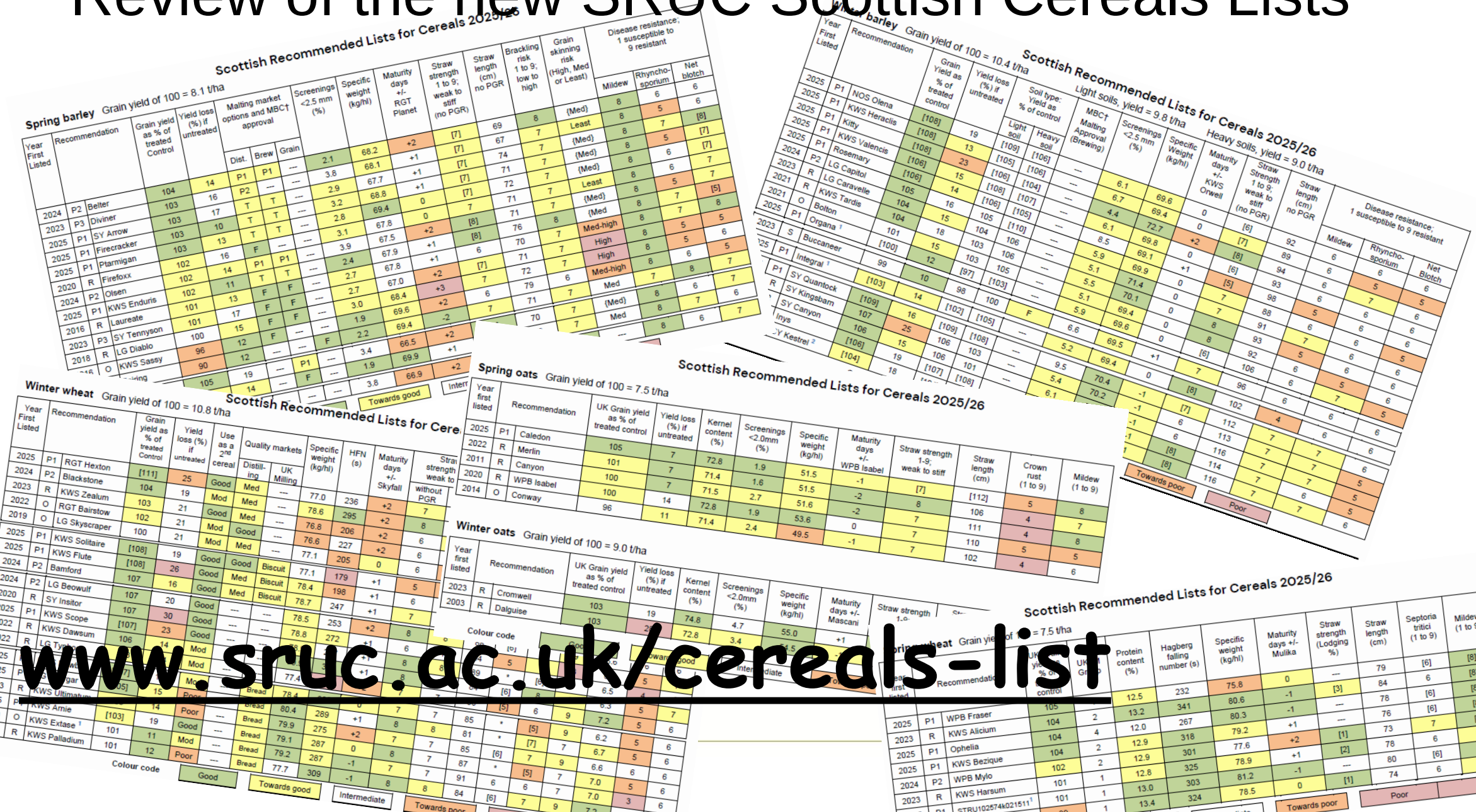
Review of the new SRUC Scottish Cereals Lists



Scottish Cereals Lists

- Uses AHDB RL data (consortium of AHDB, BSPB, MAGB & UKFM)
- Treated yield is based on the AHDB North Region
- Focus on varieties with most value for local farming and end use
- Recommendations include provisional years (P1 and P2) with option for P3, specific use (S) and becoming out-classed (O)
- Recommendations are based on a balance of agronomic features for growing and end use

Spring barley Grain yield of 100 = 8.1 t/ha

Year First Listed	Recommendation		Grain yield as % of treated Control	Yield loss (%) if untreated	Malting market options and MBC† approval		
					Dist.	Brew	Grain
2024	P2	Belter	104	14	P1	P1	---
2023	P3	Diviner	103	16	P2	---	---
2025	P1	SY Arrow	103	17	T	T	---
2025	P1	Firecracker	103	10	T	T	---
2025	P1	Ptarmigan	103	13	T	T	---
2020	R	Firefoxx	102	16	F	---	---
2024	P2	Olsen	102	14	P1	P1	---
2025	P1	KWS Enduris	102	11	T	T	---
2016	R	Laureate	101	13	F	F	---
2023	P3	SY Tennyson	101	17	F	F	---
2018	R	LG Diablo	100	15	F	F	---
2016	O	KWS Sassy	96	12	F	---	---
2016	S	Fairing	90	12	---	---	F
2024	P2	Bounty	105	19	---	P1	---
2021	O	Skyway	101	14	---	F	---
2023	R	Hurler	104	17	---	---	---

Spring barley

- Sixteen varieties
- Five removed, four added
- Long queue for malting tests
- List includes P1, P2 and P3
- Current market leaders

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Spring barley: Market leaders

Laureate	R	MBC Full Approval for D & B. Market share >60%. Yield 101. Good disease resistance. Moderate straw strength. Medium to high skinning risk *
Firefox	R	MBC Full Approval for distilling. Registered 4% market share in 2024. Yield 102. Early maturity (0). Improved skinning resistance *
LG Diablo	R	MBC Full Approval for D & B. 17% market share. Later maturity (+3). Higher skinning risk *
KWS Sassy	O	MBC Full Approval for Distilling. 11% market share. Becoming outclassed for yield (96) with weaker agronomics

* Working towards a rating for grain skinning

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Spring barley: *Possibles* at P3 …

SY Tennyson	P3	MBC Full Approval for D & B. Yield 101. Later maturing (+2) and weaker disease profile. Weaker for skinning.

Diviner	P3	MBC Provisional Approval for distilling. Yield 103. Maturity +1. Improved skinning resistance

Both could miss out

Spring barley: Waiting in the queue …

Two varieties at P2, with MBC Provisional Approval 1

Belter	P2	MBC Provisional Approval 1. High yield 104, later maturity +2. Bold grain and good spec weight. Excellent brackling resistance. *Malting tests indicate intermediate for B and D*

Olsen	P2	MBC Provisional Approval 1 for distilling and brewing. High yield 102, later maturity +2. Stiff straw (8). *Malting tests indicate strong for B, intermediate for D*

Spring barley: *New.* Under MBC tests for both D & B

SY Arrow	P1	Yield 103, maturity +1. Good disease resistance *Looks very strong for both D and B*
Firecracker	P1	Yield 103, maturity +1. *Better for brewing?*
Ptarmigan	P1	Yield 103, maturity 0. Very good spec weight 69.4. *Better for Distilling?*
KWS Enduris	P1	Yield 102, maturity +1. Very stiff straw. *Stronger for brewing*

Spring barley: Other malting and feed

Fairing	S	MBC Special Use for grain distilling. Low yield (90), but good uT yield. Very early maturing (-2)

Bounty	P2	MBC Provisional Approval 1 for brewing. Very high yield. Maturity +2. Very stiff straw
Skyway	O	MBC Full Approval for brewing. Yield 101 and very good spec weight. However, becoming out-classed.

Hurler	R	High yielding (104) feed variety. Low spec weight, but very stiff straw and good brackling resistance

Spring barley: Summary

- Malting sector supports a limited number of ‘main’ varieties
- Valuable agronomic features in some new varieties
- And, sign of improvements in husk adhesion in some new varieties
- Potential from a pipeline of new varieties, but …
- Commercial focus may be too narrow to take advantage of agronomic improvements

Spring oats yield and quality

Spring oats Grain yield of 100 = 7.5 t/ha

Year first listed	Recommendation		UK Grain yield as % of treated control	Yield loss (%) if untreated	Kernel content (%)	Screenings <2.0mm (%)	Specific weight (kg/hl)	Maturity days +/- WPB Isabel
2025	P1	Caledon	105	7	72.8	1.9	51.5	-1
2022	R	Merlin	101	7	71.4	1.6	51.5	-2
2011	R	Canyon	100	7	71.5	2.7	51.6	-2
2020	R	WPB Isabel	100	14	72.8	1.9	53.6	0
2014	O	Conway	96	11	71.4	2.4	49.5	-1

- Well established varieties
- Check differences in quality
- Variation in disease resistance

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Spring wheat yield and quality

- High turn-over for new list

Spring wheat Grain yield of 100 = 7.5 t/ha

Year first listed	Recommendation		UK Grain yield as % of treated control	UKFM Group	Protein content (%)	Hagberg falling number (s)	Specific weight (kg/hl)	Maturity days +/- Mulika
2025	P1	WPB Fraser	105	4	12.5	232	75.8	0
2023	R	KWS Alicium	104	2	13.2	341	80.6	-1
2025	P1	Ophelia	104	4	12.0	267	80.3	-1
2025	P1	KWS Bezique	104	2	12.9	318	79.2	+1
2024	P2	WPB Mylo	102	2	12.9	301	77.6	+2
2023	R	KWS Harsum	101	1	12.8	325	78.9	+1
2025	P1	STRU102574k021511[1]	101	1	13.0	303	81.2	-1
2022	R	KWS Ladum	99	1	13.4	324	78.5	0

- Good yield grain quality among UKFM Groups
- Variation in agronomics, but no significant weaknesses

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Winter barley Grain yield of 100 = 10.4 t/ha

Year First Listed	Recommendation		Grain Yield as % of treated control	Yield loss (%) if untreated
2025	P1	NOS Olena	[108]	19
2025	P1	KWS Heraclis	[108]	13
2025	P1	Kitty	[108]	23
2025	P1	KWS Valencis	[106]	15
2025	P1	Rosemary	[106]	14
2024	P2	LG Capitol	105	16
2023	R	LG Caravelle	104	15
2021	R	KWS Tardis	104	18
2021	O	Bolton	101	15
2025	P1	Organa [1]	[100]	12
2023	S	Buccaneer	99	10
2025	P1	Integral [1]	[103]	14
2025	P1	SY Quantock	[109]	16
2019	R	SY Kingsbarn	107	25
2022	R	SY Canyon	106	15
2025	P1	Inys	[106]	19
2025	P1	SY Kestrel [2]	[104]	18

Winter barley

- Seventeen varieties, four categories
- High turn-over
- Eight removed, ten added
- Strong list, plenty of choice
- Check variation in maturity, straw strength and spec weight
- Check performance on soil type

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Winter barley: Market leaders

KWS Tardis	R	Yield 104. Excellent specific weight (70.1). Very stiff straw (8)
LG Caravelle	R	Yield 104. Excellent specific weight (71.4). Stiff straw (7)
LG Capitol	P2	Yield 105. Good specific weight (69.9). Stiff straw (7)

SY Kingsbarn	R	Yield 107. Excellent specific weight (70.2). Intermediate straw strength (6). uT yield loss is high at 25%

Winter barley: *New* two-row feed options

NOS Olena	Yield [108]. Good spec weight (69.6). Weaker straw? [6]
KWS Heraclis	Yield [108]. Good spec weight (69.4). Stiff straw [7]
Kitty	Yield [108]. Excellent spec weight (72.7), low screenings (4.4%) and very stiff straw [8]

KWS Valencis	Yield [106]. Good spec weight (69.8). Weaker straw? [6]
Rosemary	Yield [106]. Good spec weight (69.1). Weak straw [5] and weak for mildew (5)
Organa	***New trait*** tolerance to BYDV. Relatively low yield [100] but good specific weight (69.6)

Winter barley: *New* six-row feed options

Integral	P1	***New trait*** tolerance to BYDV. Yield 103. Spec weight (69.4). Conventional type

SY Quantock	P1	Very high yield [109]. Excellent spec weight (70.4). Hybrid
Inys	P1	High yield [106]. Good spec weight (69.3). Hybrid

SY Kestrel	P1	***New traits*** resistance to BYDV and tolerance to WDV. Relatively low yield [104], but very stiff straw. Hybrid

Winter barley: Summary

- Yield gap between 6-row and 2-row has just about closed
- New high yielding two-row varieties
- Conventional 6-row options still very limited
- Choice of 6-row hybrids
- Good spec. weights
- Variation in straw strength
- Compare performance on soil types

Winter wheat Grain yield of 100 = 10.8 t/ha

Year First Listed	Recommendation		Grain yield as % of treated Control	Yield loss (%) if untreated	Use as a 2nd cereal	Quality markets	
						Distill-ing	UK Milling
2025	P1	RGT Hexton	[111]	25	Good	Med	---
2024	P2	Blackstone	104	19	Mod	Med	---
2023	R	KWS Zealum	103	21	Good	Med	---
2022	O	RGT Bairstow	102	21	Mod	Good	---
2019	O	LG Skyscraper	100	21	Mod	Med	---
2025	P1	KWS Solitaire	[108]	19	Good	Good	Biscuit
2025	P1	KWS Flute	[108]	26	Good	Med	Biscuit
2024	P2	Bamford	107	16	Good	Med	Biscuit
2024	P2	LG Beowulf	107	20	Good	---	---
2020	R	SY Insitor	107	30	Good	---	---
2025	P1	KWS Scope	[107]	23	Good	---	---
2022	R	KWS Dawsum	106	14	Mod	---	---
2022	R	LG Typhoon	103	14	Mod	---	---
2025	P1	KWS Newbie	[107]	18	Mod	---	Bread
2025	P1	LG Shergar	[105]	15	Poor	---	Bread
2023	R	KWS Ultimatum	103	14	Poor	---	Bread
2025	P1	KWS Arnie	[103]	19	Good	---	Bread
2019	O	KWS Extase [1]	101	11	Mod	---	Bread
2022	R	KWS Palladium	101	12	Poor	---	Bread

Winter wheat

- Nineteen varieties, four categories
- High turn-over
- Four removed, 7 added, several becoming outclassed
- Variation in T and UT yield
- Good 2nd wheats

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Winter wheat: Soft textured feed and grain distilling

RGT Hexton	*New*	**‘Medium’** for distilling. Very high yield [111]. Maturity +2, Septoria 6.8. uT yield loss is high (25%)
Blackstone	P2	**‘Medium**’ for distilling. Yield 104. Maturity +2, stiff straw (8), very good spec weight (78.6) and Hagberg (295)
KWS Zealum	R	**‘Medium’** for distilling. Yield 103. Maturity +2. Stiff treated straw (8). Low spec weight (76.8) and Hagberg (206)
RGT Bairstow	O	**‘Good’** for distilling. Yield 102, becoming out-classed: spec weight (76.6), weakness for Septoria (5.7) and eyespot (4)
LG Skyscraper	O	**‘Medium’** for distilling. Becoming out-classed for: yield (100), diseases, and stiffness, though is early maturing (0)

Winter wheat: Biscuit-making and grain distilling

Bamford	P2	**‘Medium’** distilling. Yield 107. Maturity +1. Stiff straw (7). Good spec weight (78.7) and Hagberg (247)

KWS Solitaire	New	**‘Good’** distilling. Yield [108]. Maturity +1. Septoria 6.7 Weaker straw? Low Hagberg (179)
KWS Flute	New	**‘Medium’** distilling. Yield [108]. Maturity +1. Medium straw strength. Good spec weight (78.4), but poor Hagberg (198). uT yield loss is high (26%)

Winter wheat: Hard textured feed varieties

LG Beowulf	P2	Yield 107. Maturity +2. Stiff straw. Septoria 6.6. Good spec weight (78.5) and Hagberg (253)
SY Insitor	R	Yield 107, but poor uT yield (loss = 30%). Maturity +1. Good spec weight (78.8) and Hagberg. Poor Y Rust (3)
KWS Scope	*New*	Yield [107]. Maturity +1. Stiff straw (8). Septoria 6.5. Good spec weight (78.9) and Hagberg (247)
KWS Dawsum	R	Yield 106. Good uT yield (loss only 14%). Excellent spec weight (79.9) and Hagberg (310)
LG Typhoon	R	Yield 103. Good uT yield (loss only 14%). Medium spec weight, but low Hagberg. Very good Septoria (7.2)

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Winter wheat: Hard textured milling (all Group 2s)

KWS Ultimatum	R	Yield 103 and good uT yield (loss 14%). Excellent spec weight (79.9). Maturity +2. Stiff straw. Septoria 6.6.
KWS Extase	O	Out-classed for yield 101. Early maturity (-1). Excellent uT yield (loss only 11%). Was an 'S' with weakness to ear sterility
KWS Palladium	R	Yield [101]. Early maturity (-1). Excellent uT yield (loss only 12%). Very stiff straw. Septoria 7.2. Good spec weight (77.7) and excellent Hagberg (309)
KWS Newbie	New	Yield [107]. Early maturity (0). Stiff straw. Septoria 6.2. Good spec weight (78.4) and excellent Hagberg (305)
LG Shergar	New	Yield [105], and good uT yield (loss 15%). Excellent spec weight (80.4). Maturity +1. Very stiff straw.
KWS Arnie	New	High yield [103]. Excellent spec weight (79.1). Early maturity (0). Stiff straw.

Winter wheat: Summary

- High turn-over in varieties
- Removal of ‘out-classed’ varieties
- New varieties in each category
- Compare T and uT yields
- Variation in agronomics and grain quality
- Good 2nd wheats

Take home messages

- Significant changes to the WW and WB lists to benefit growers and end-users
- High turn-around can support demand through local supply with higher yields
- Steady improvement in untreated yield in the winter crops indicates good progress in breeding for disease resistance
- Spring barley list has a lengthening queue of new varieties waiting to be judged for commercial value
- If malting preferences are too narrow, then growers may miss out on valuable agronomic features
- The Lists provide an opportunity to connect on-farm and end-user values

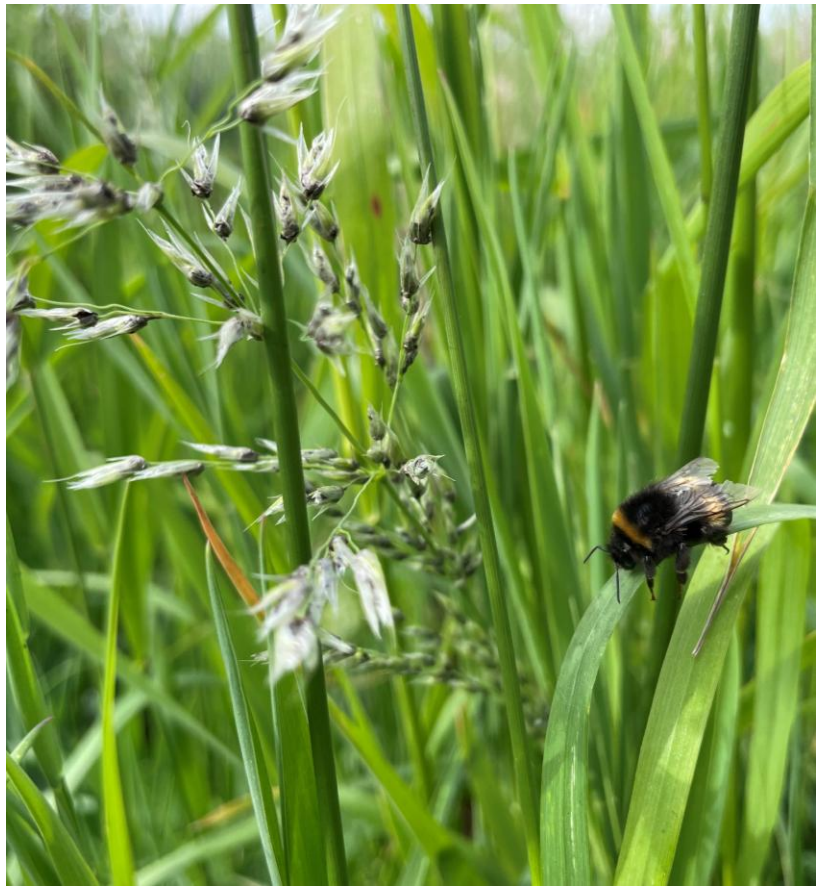
Thank you

Further information:

www.sruc.ac.uk/cereals-list

https://ahdb.org.uk/rl

https://www.gov.scot/publications/cereal-and-oilseed-rape-harvest-final-estimates-2024/



Optimising fungicide inputs through IPM

Fiona Burnett, SRUC

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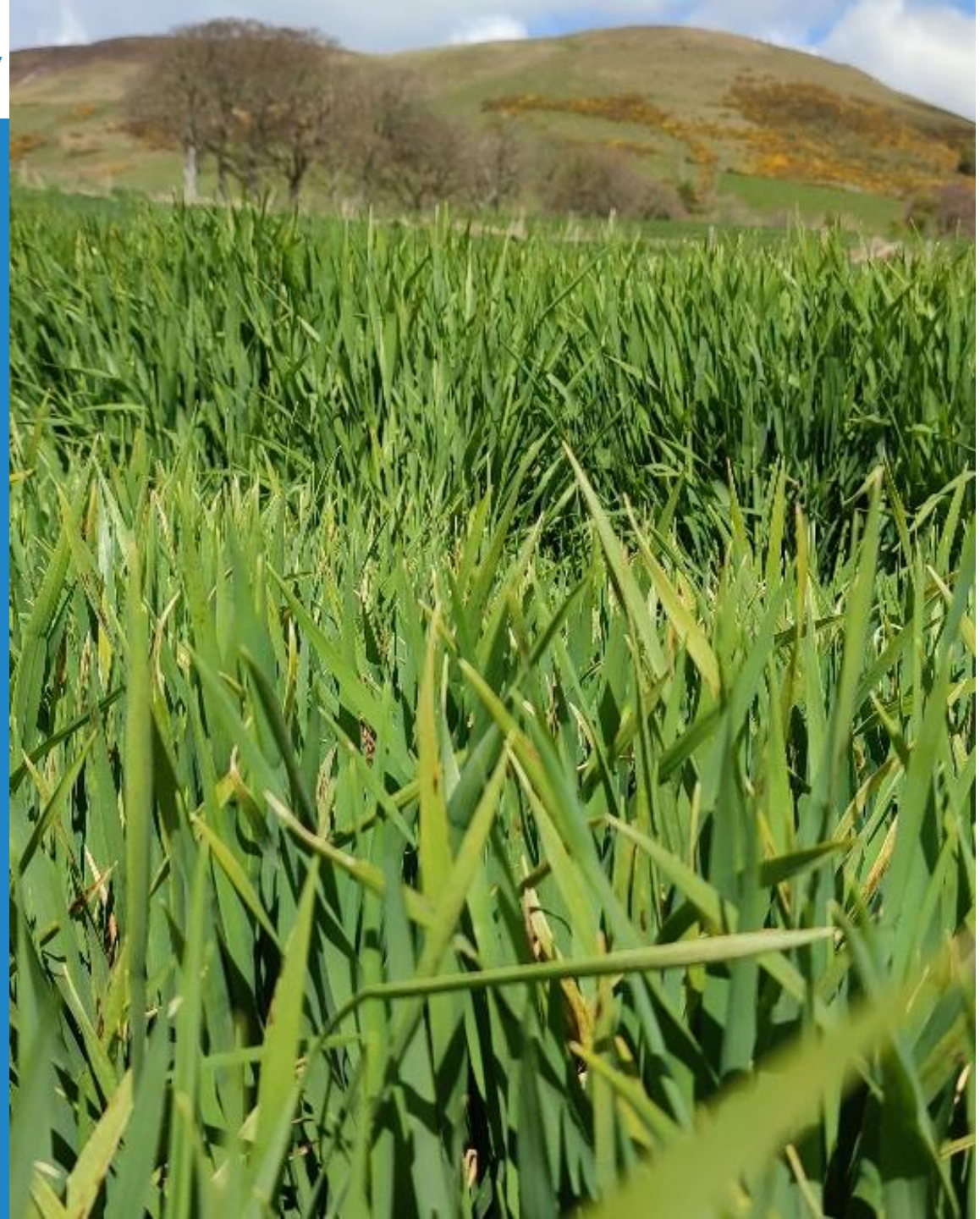

Integrated Pest Management

- IPM - holistic approach to managing pests that combines biological, cultural and physical techniques to minimize agrochemical use
- Tailored to each individual farm and nests within wider sustainable / regenerative approaches to farm systems
- IPM widely accepted as being crucial for the sustainability of crop production in Europe and written into European, UK and Scottish policy.
- Can reduce reliance on conventional pesticides while maintaining crop yields and profitability.
- Use IPM to reduce risk and optimise inputs

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Audits and Plans that make up the Whole Farm Plan

Audit/Plan name	Validity
Animal Health and Welfare Plan	Annual review
Biodiversity Audit	Five-year review
Carbon Audit	Five-year review
Integrated Pest Management Plan	Annual review
Soil Sampling of Region 1 land	Five-year review (every Region 1 field sampled once over a five-year period)

IPM Plans are already part of main crop assurance schemes such as Scottish Quality Crops

2024 Scottish IPM plans: Arable : 2823 Grass: 520 Horticulture: 43

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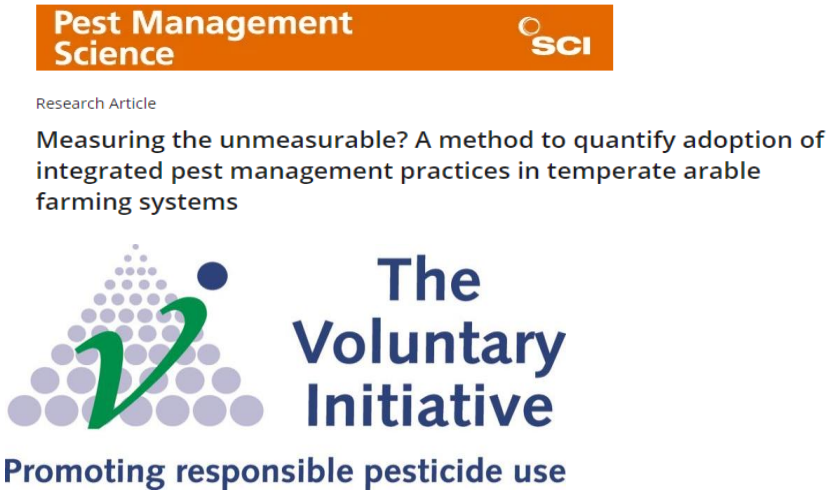
IPM Assessment Plans

- Tool to facilitate discussion between farmer and agronomist
- Data collection
  - Baselines
    - IPM score (0-100)
    - Scoring system is based on expert / farmer experience of effectiveness
  - Identify issues/topics
  - Improve practices year on year



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Weights: Arable IPM metric

Question	Final weights (%)
What proportion of land on your farm is in continuous cereals production?	11.46
Why do you typically use an arable rotation?	11.78
What influences your choice of crop variety?	8.77
What preventative measures are used to control weeds, diseases & insects etc.	46.93
What factors do you consider when deciding on your pest management plan?	15.24
Membership of an agronomy / crop discussion group?	5.82
Total	100

Creissen et al. 2019 *Pest Man.Sci.* **75**

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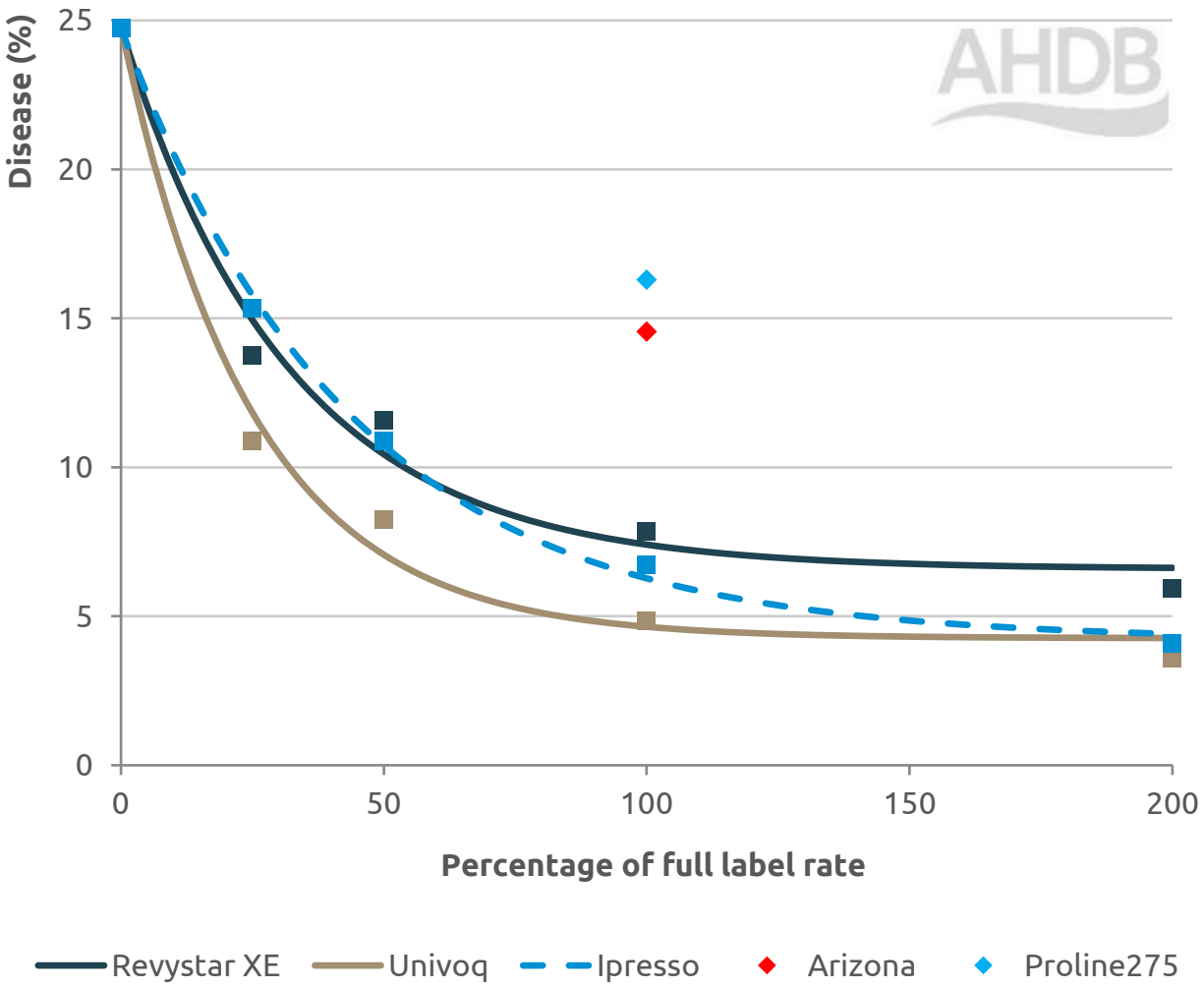
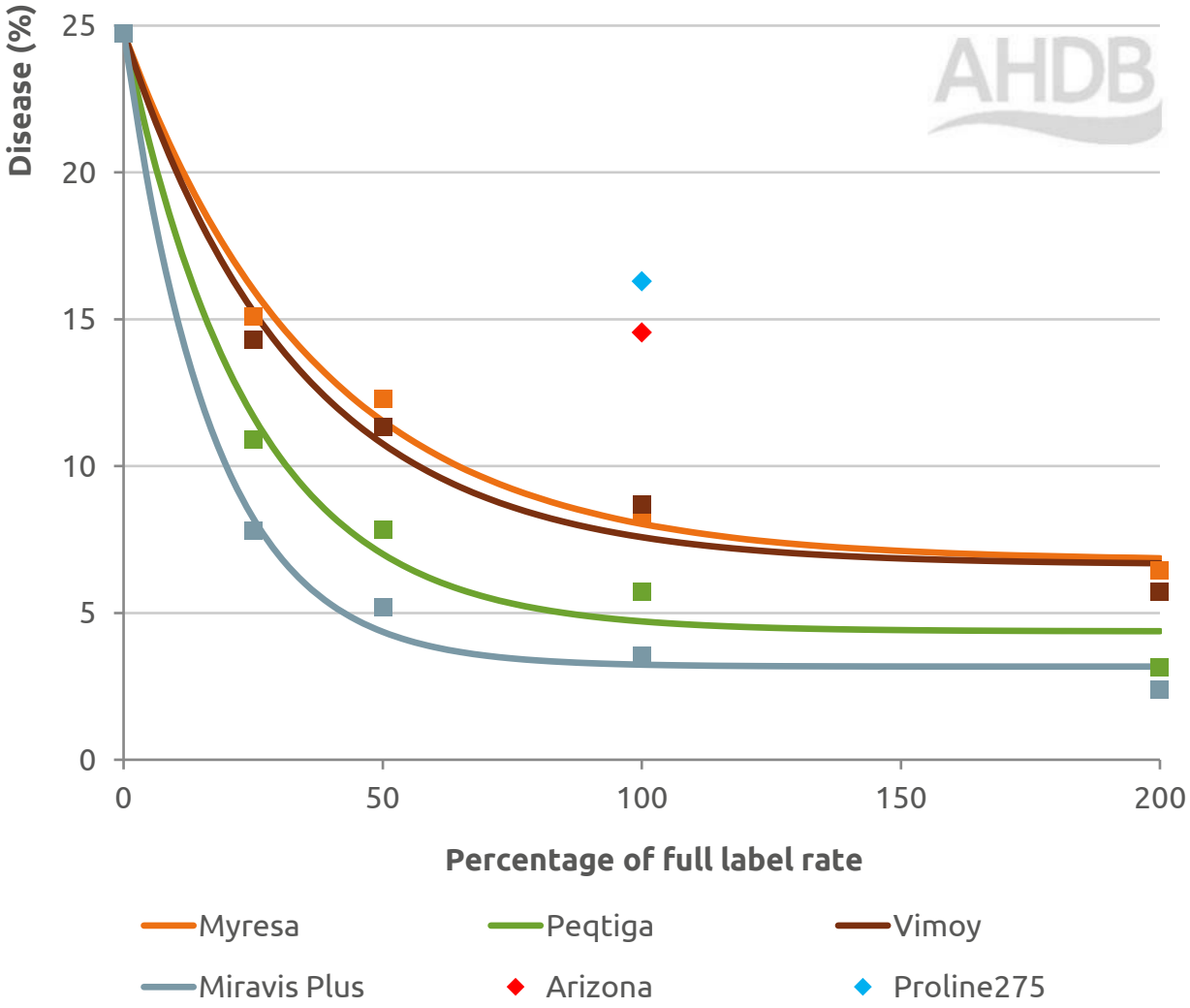
Optimising inputs: IPM

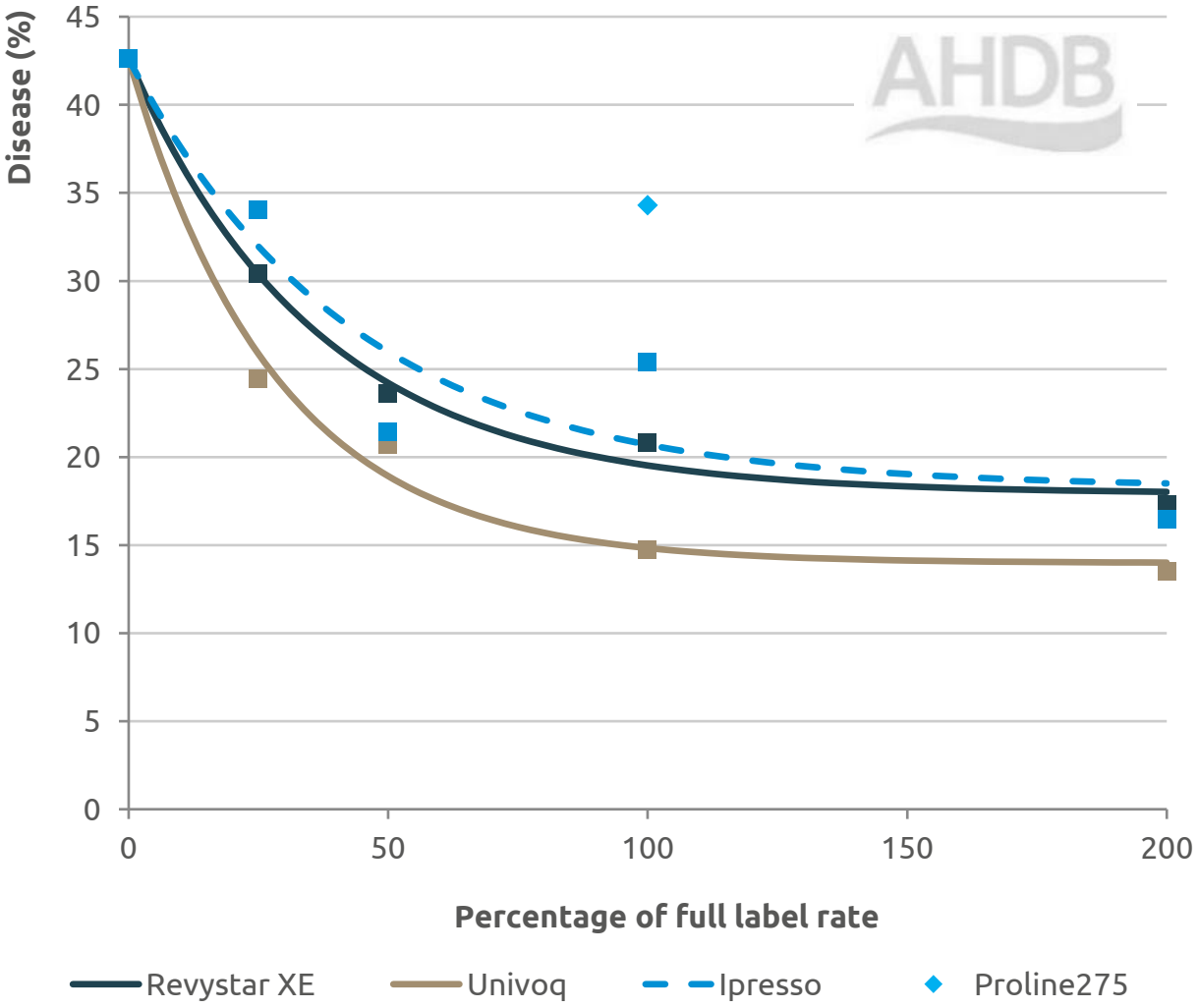
- Deploy preventative measures (e.g. variety)
- Decide on key disease risks
- Use the most effective options
- Consider any biopesticide options
- Review efficacy
- Tailor following sprays
- Steward against resistance

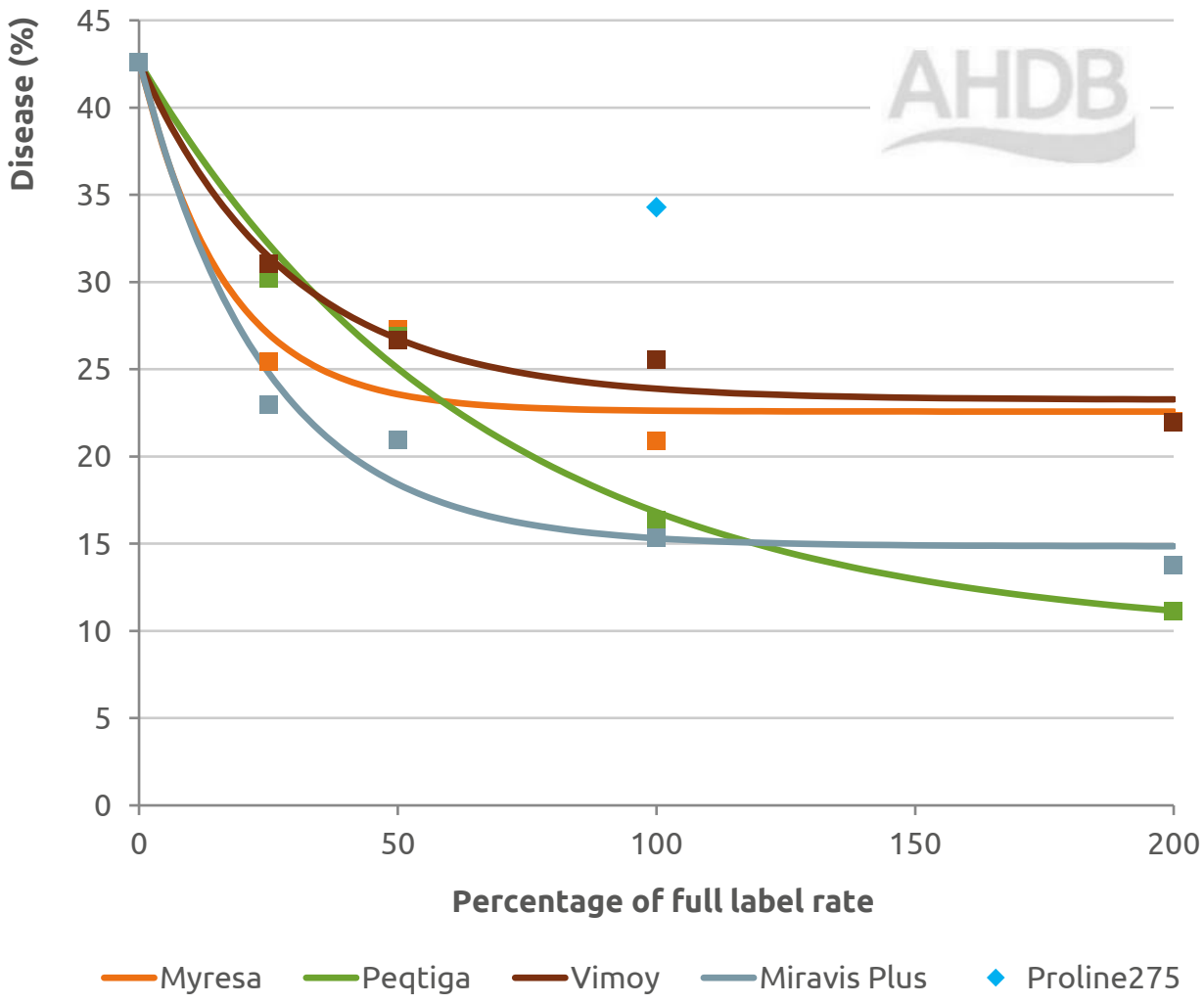
Septoria protectant overyear 2022-24 (16 trials)



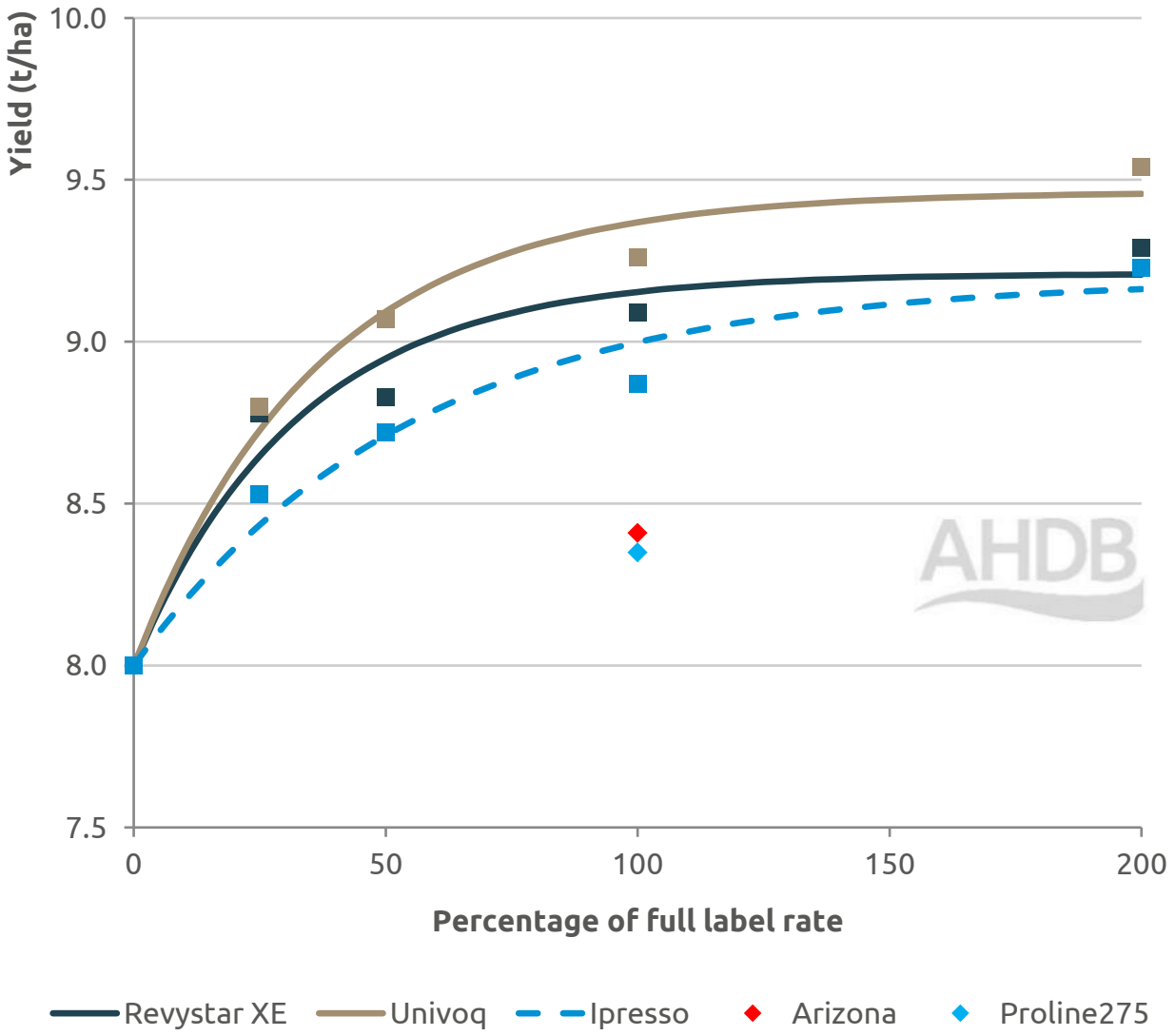


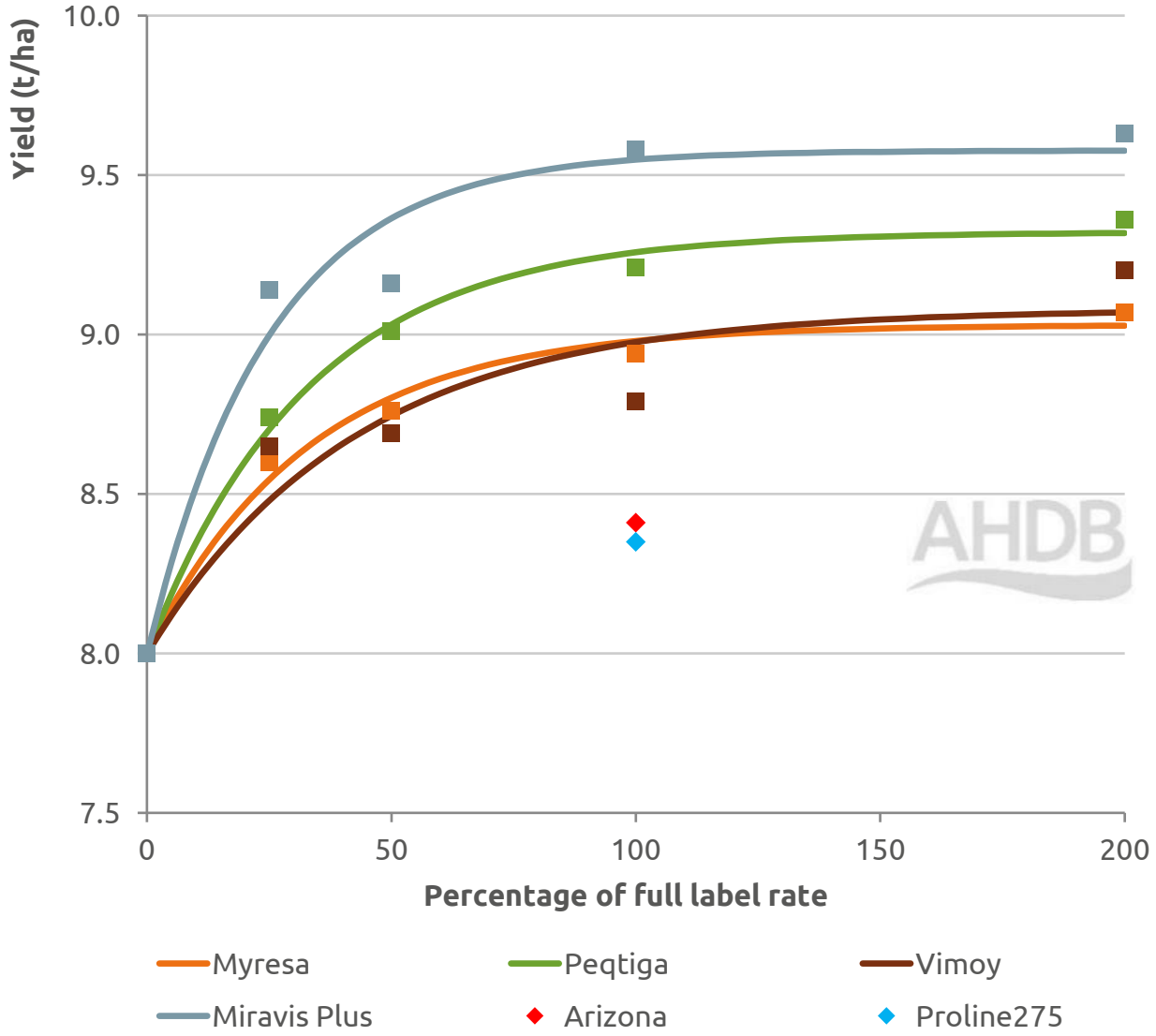
Septoria eradicant overyear 2022-24 (4 trials)



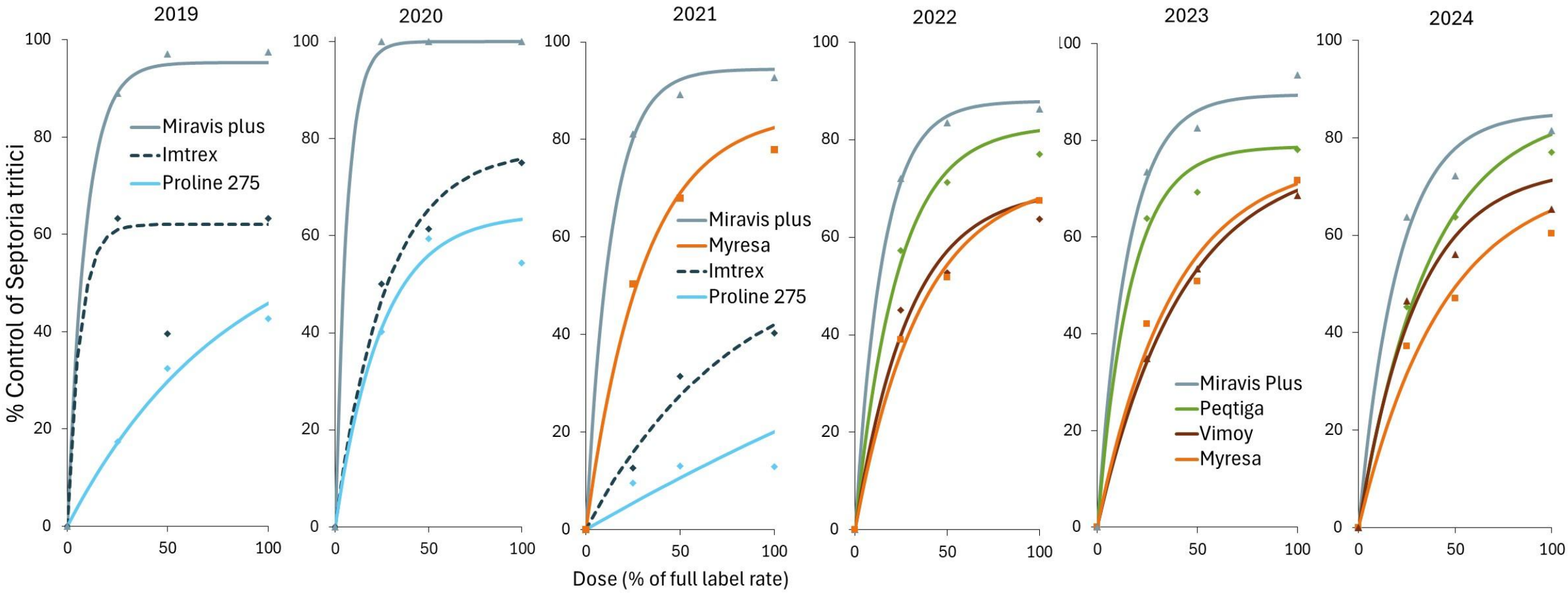


Septoria yield overyear 2022-24 (12 trials)

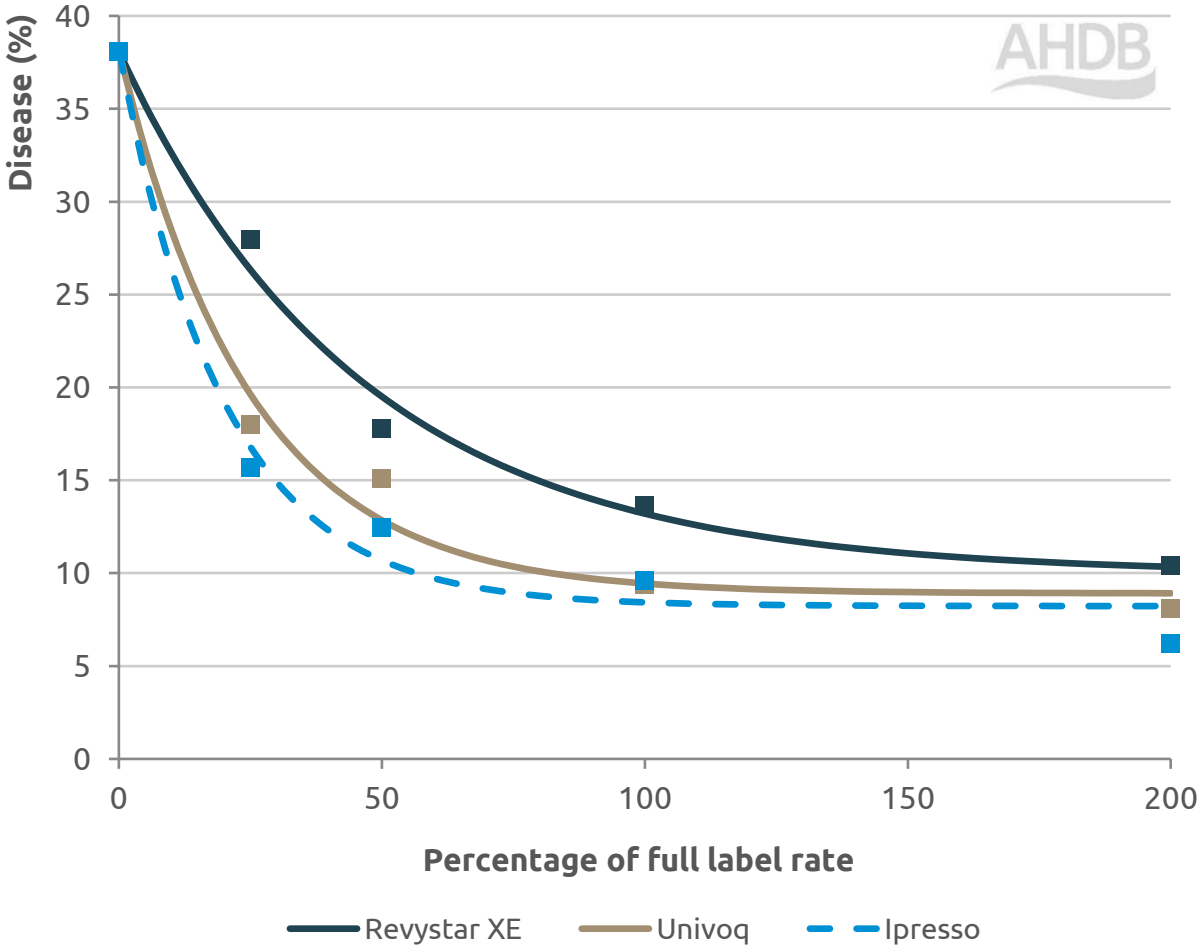


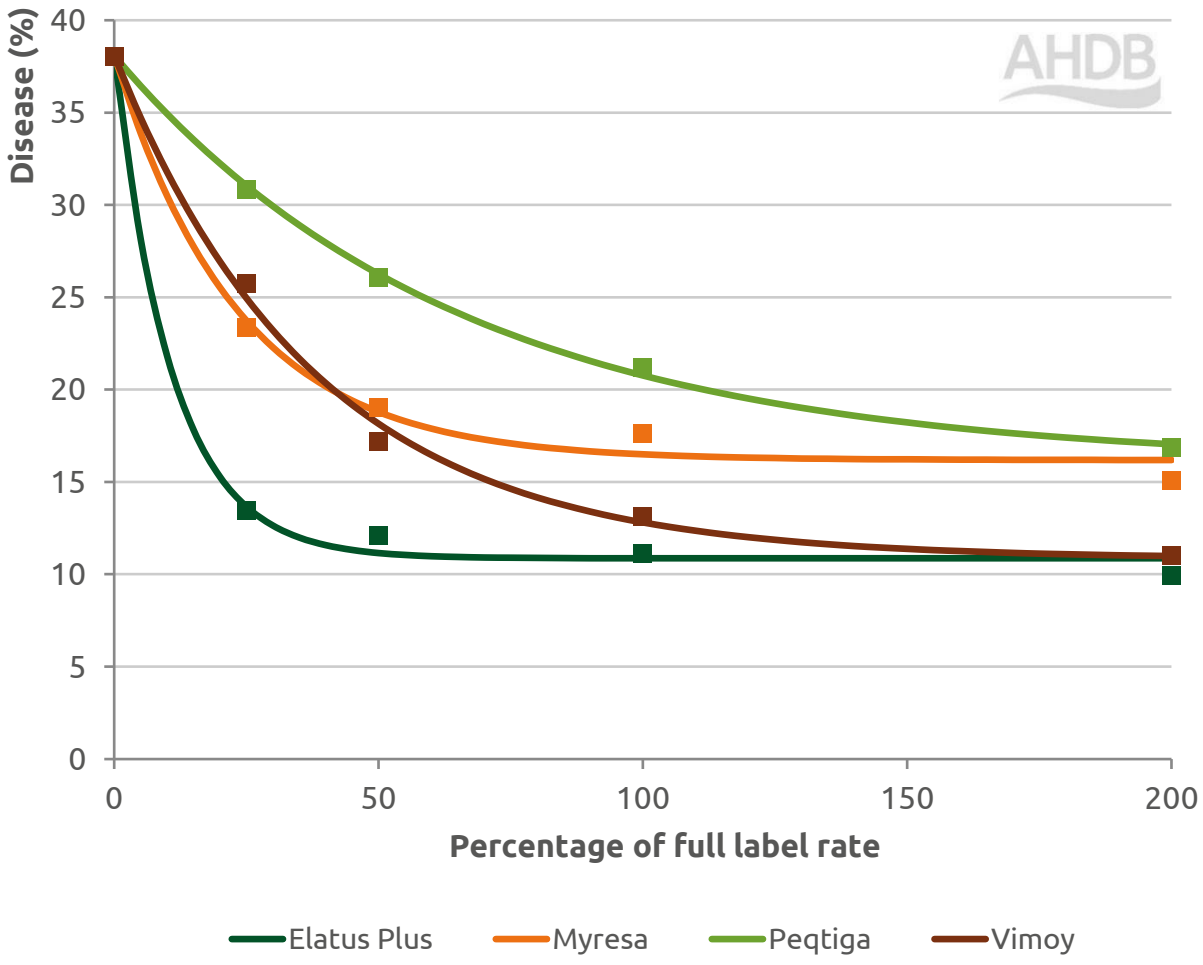


Changes in septoria protectant activity of single site MoA's in Fungicide Performance trials

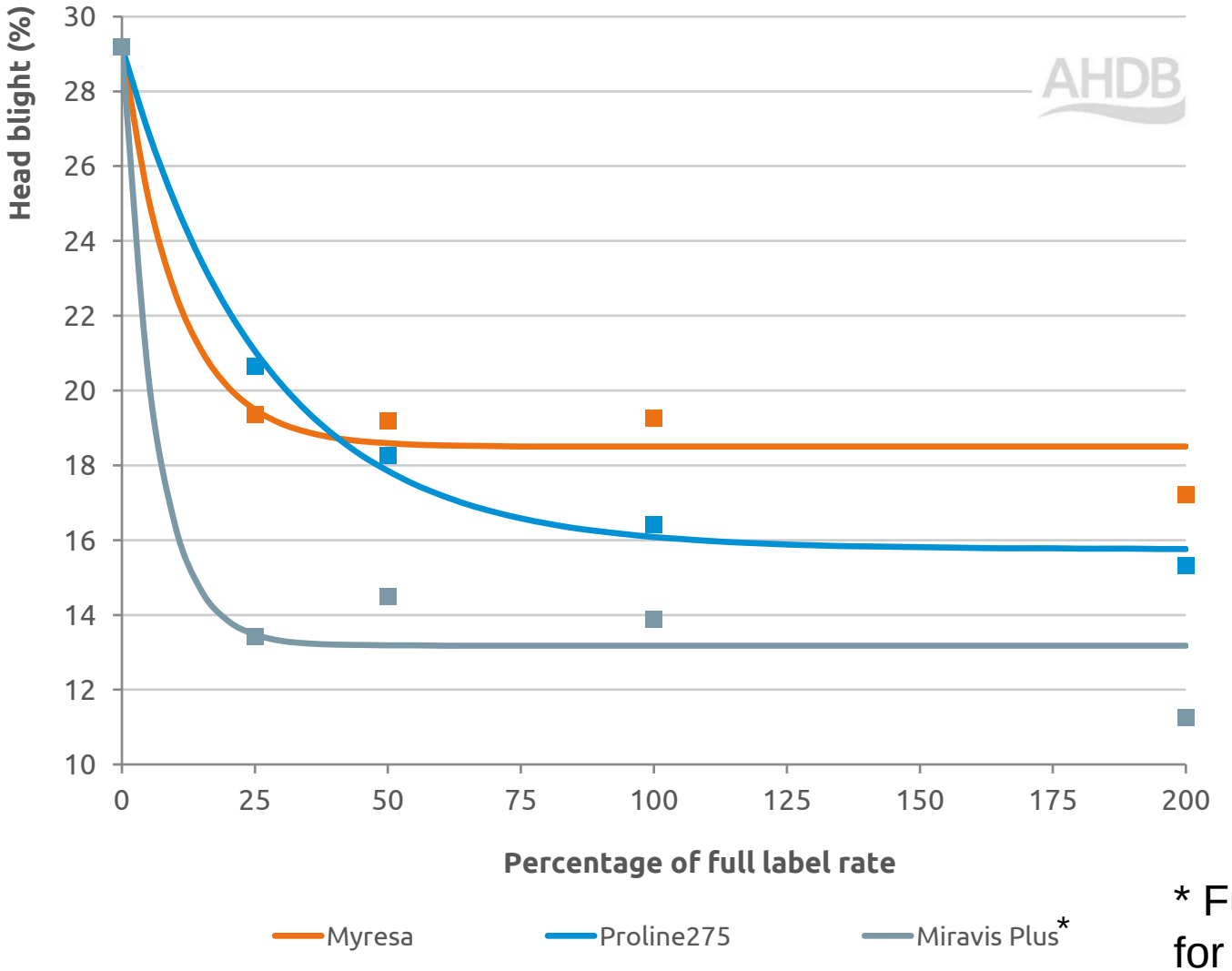


Yellow rust overyear 2022-24 (3 trials)





Head blight overyear 2022-24 (3 trials)

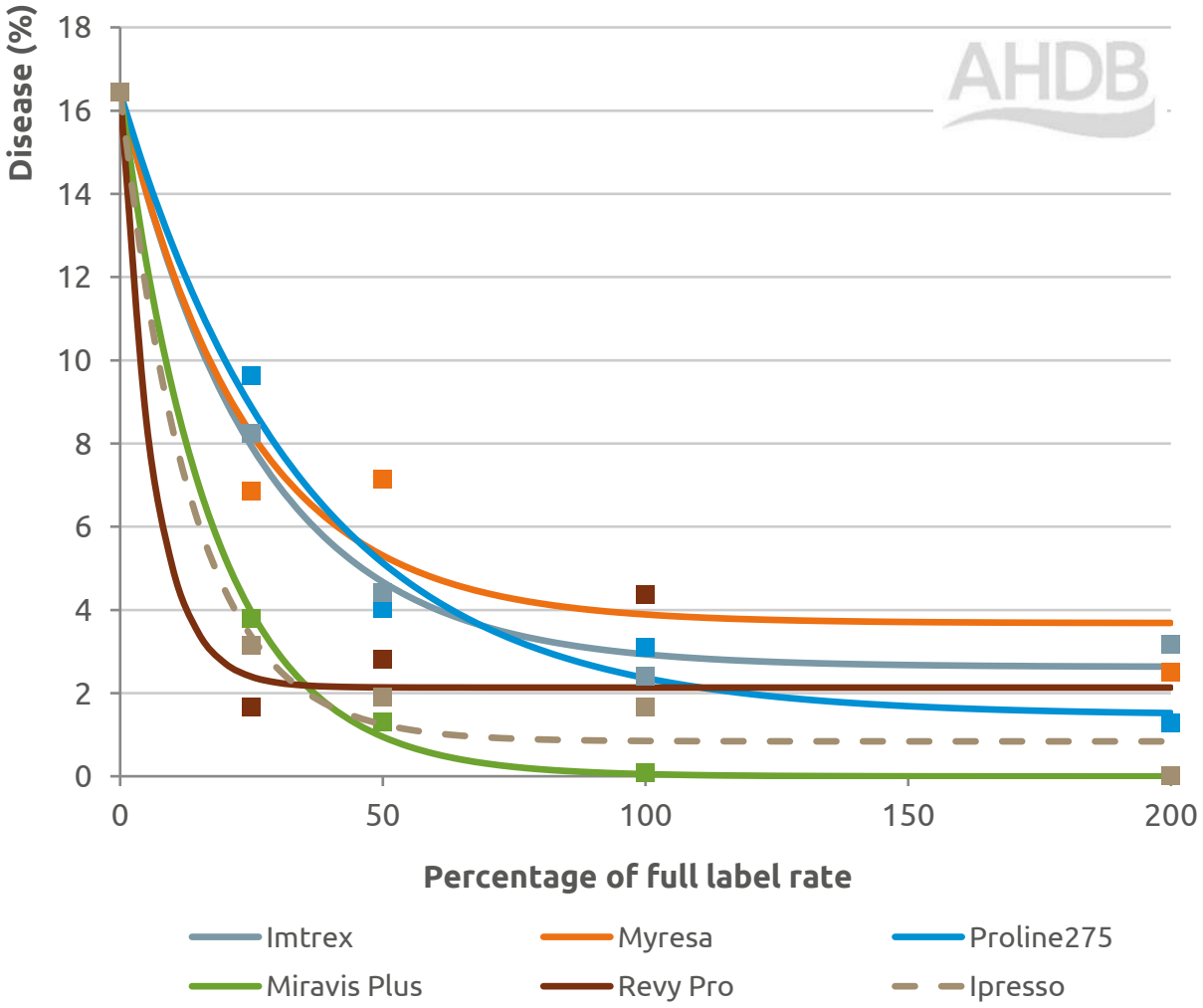


* Full label rate of Miravis Plus for fusarium control is 3.2 l/ha

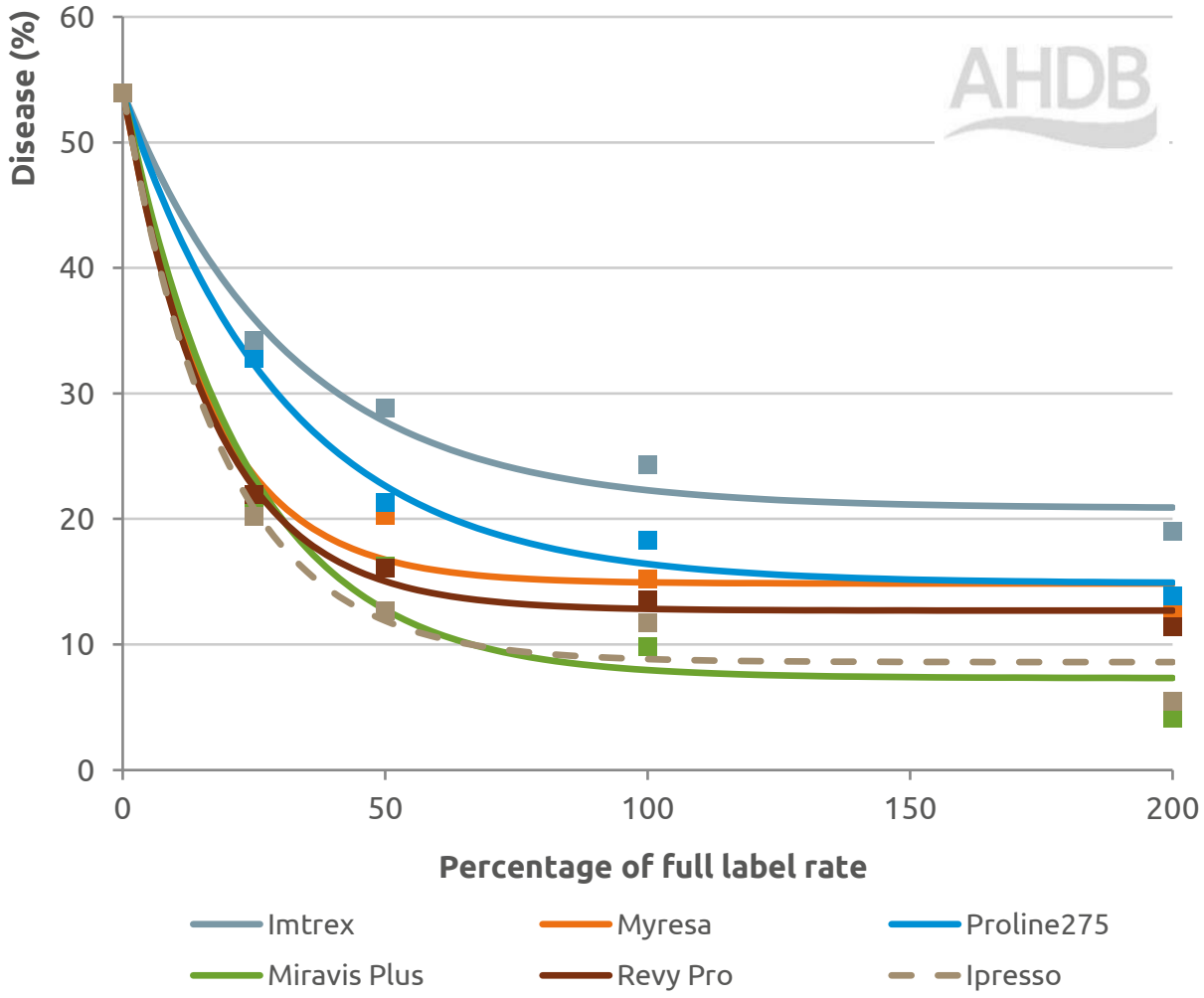
Wheat summary

- **Septoria:** Miravis Plus (pydiflumetofen), Peqtiga (fenpicoxamid), Ipresso (isoflucypram + prothioconazole) and Univoq (fenpicoxamid + prothioconazole) achieved best control
- Vimoy (isoflucypram) and Myresa (mefentrifluconazole) maintained good activity
- Further small shifts in fungicide sensitivity in septoria population at some sites
- **Yellow rust:** all azoles and SDHIs tested effective, but mixtures Ascra Xpro (bixafen + fluopyram + prothioconazole), Ipresso, Revystar XE (fluxapyroxad + mefentrifluconazole) and Univoq were most effective
- Mixtures offer more robust disease control and yields than straights.
- Large differences between varieties in 2024
- Use a combination of fungicide groups to reduce the risk of resistance development

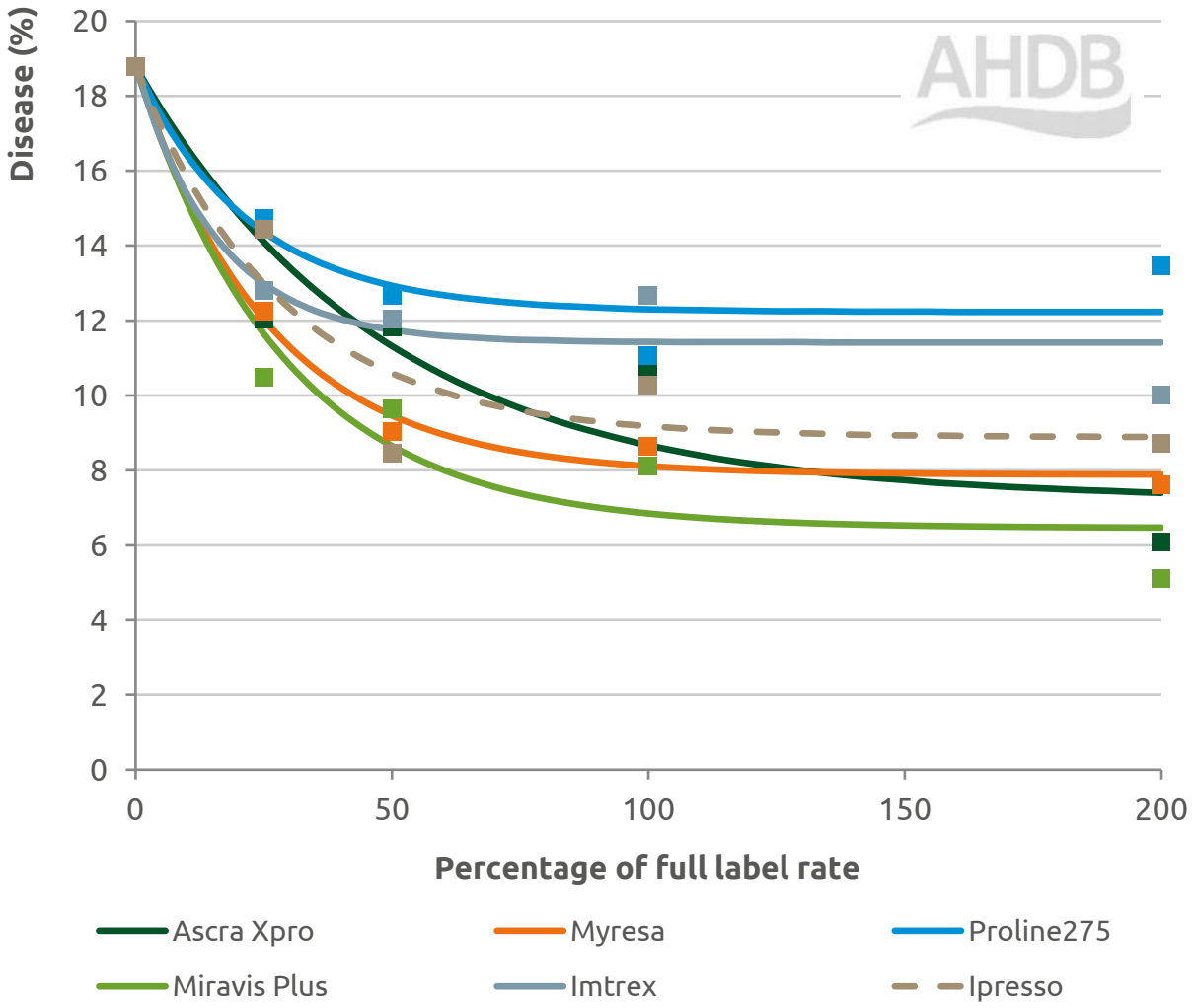
Rhynchosporium protectant 2024 (2 trials)



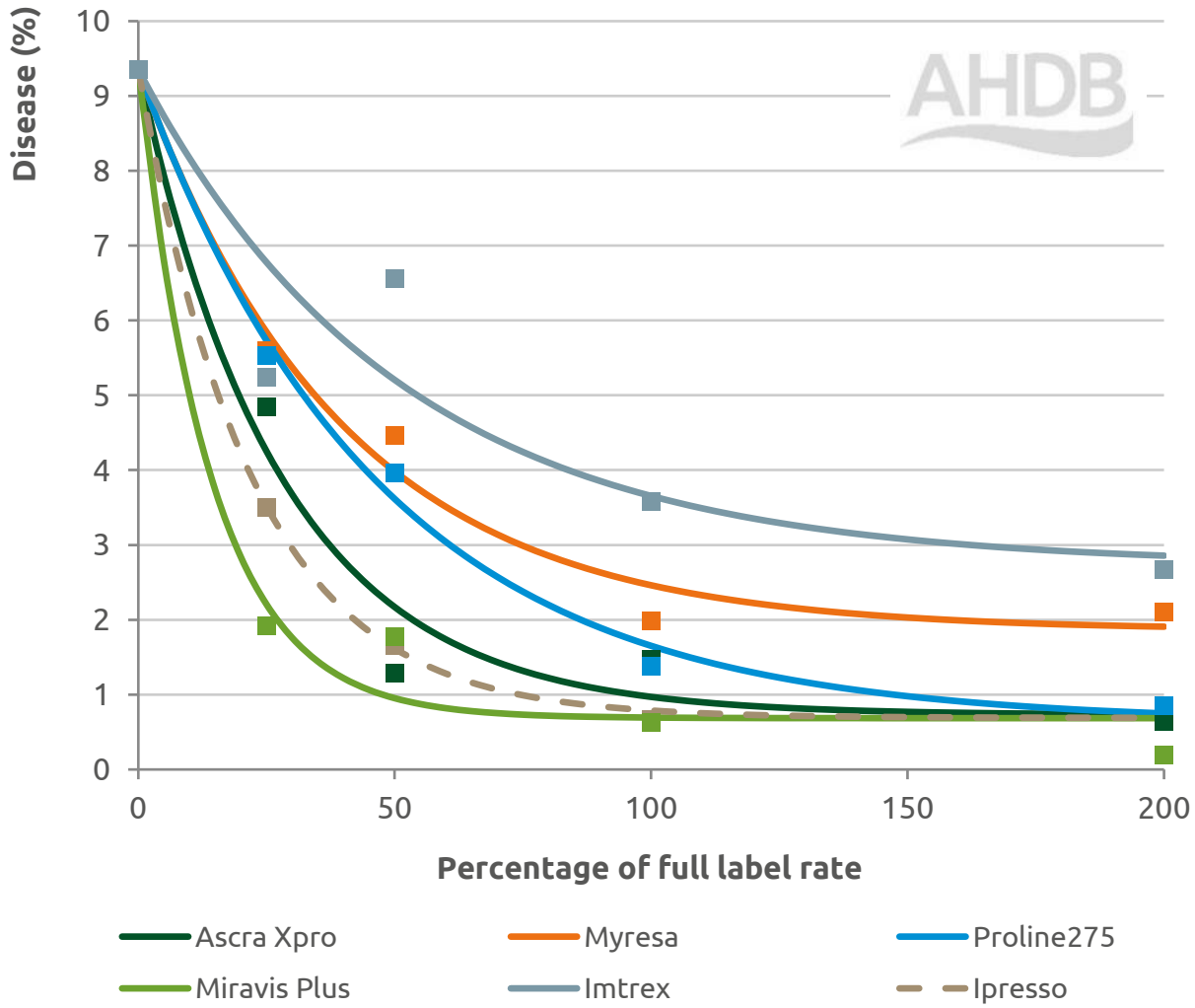
Rhynchosporium mixed 2024 (2 trials)



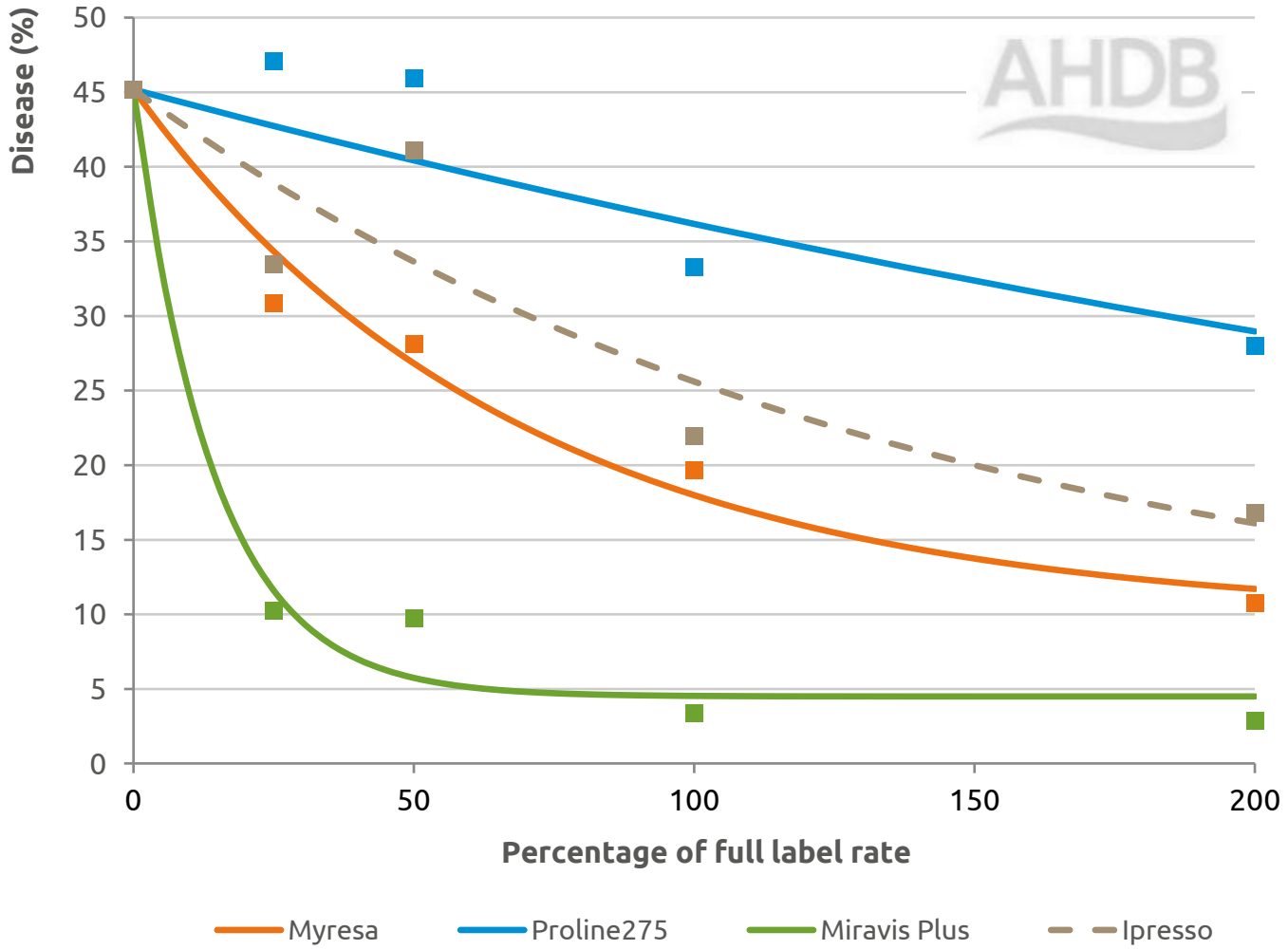
Net blotch protectant overyear 2022-24 (3 trials)



Net blotch eradicant overyear 2021-24 (3 trials)



Ramularia 2024 (3 trials)



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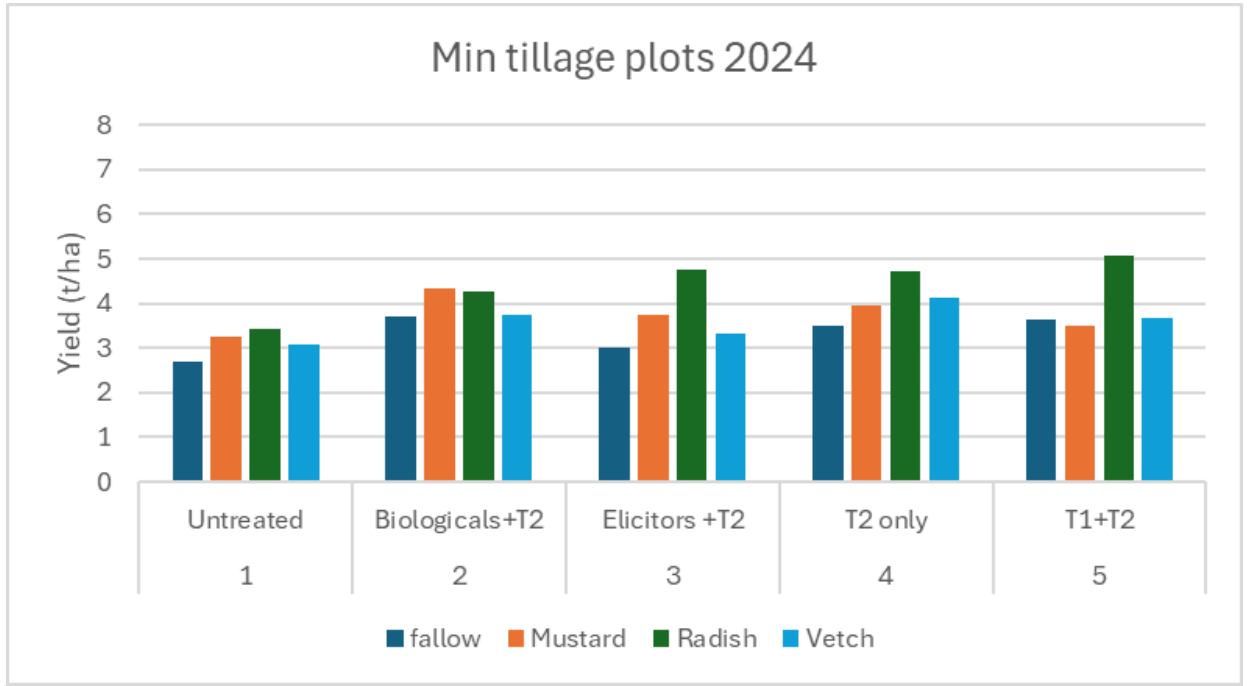
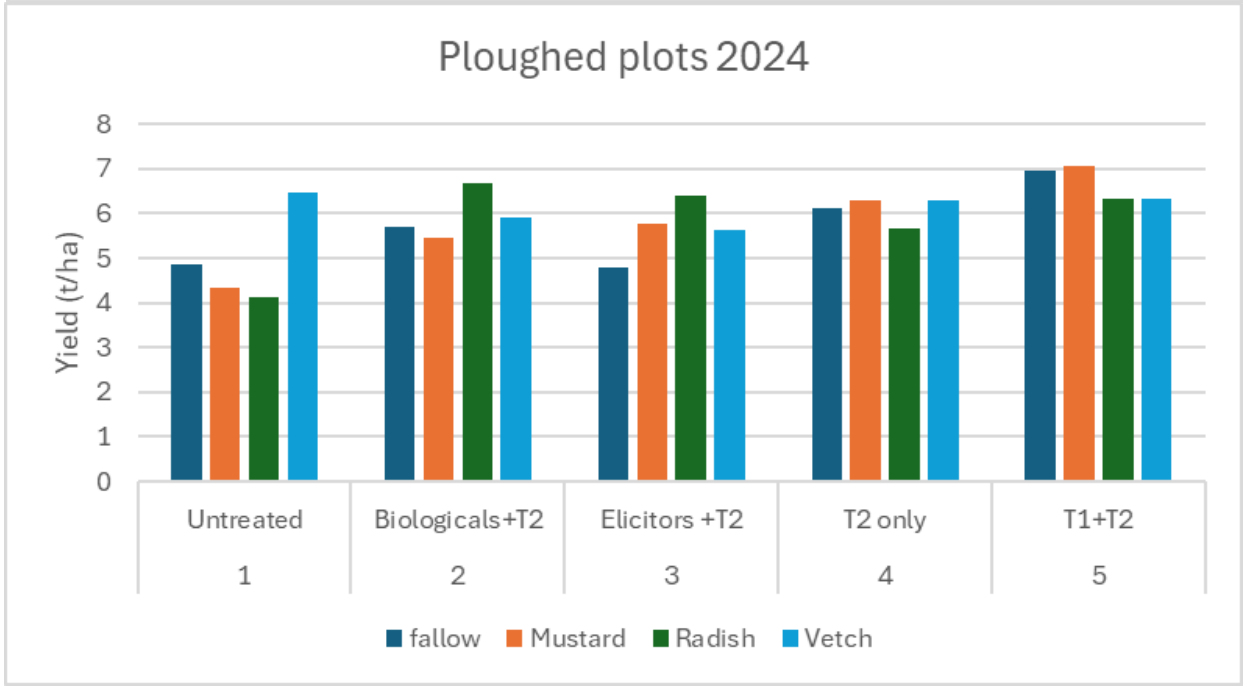
IPM in spring barley

- Data from RESAS funded trials at Boghall, Midlothian
- Minimum tillage can yield but recognise the challenges
- Radish cover crop seems to be making a difference in the min til
- Larger differences in the fungicide programmes in the ploughed, except for the vetch, which is intriguing
- Possible to substitute biological or elicitor products for conventional fungicides and match or exceed yield
- Differences between tillage, variety and cover crop emphasises how system specific optimal inputs are





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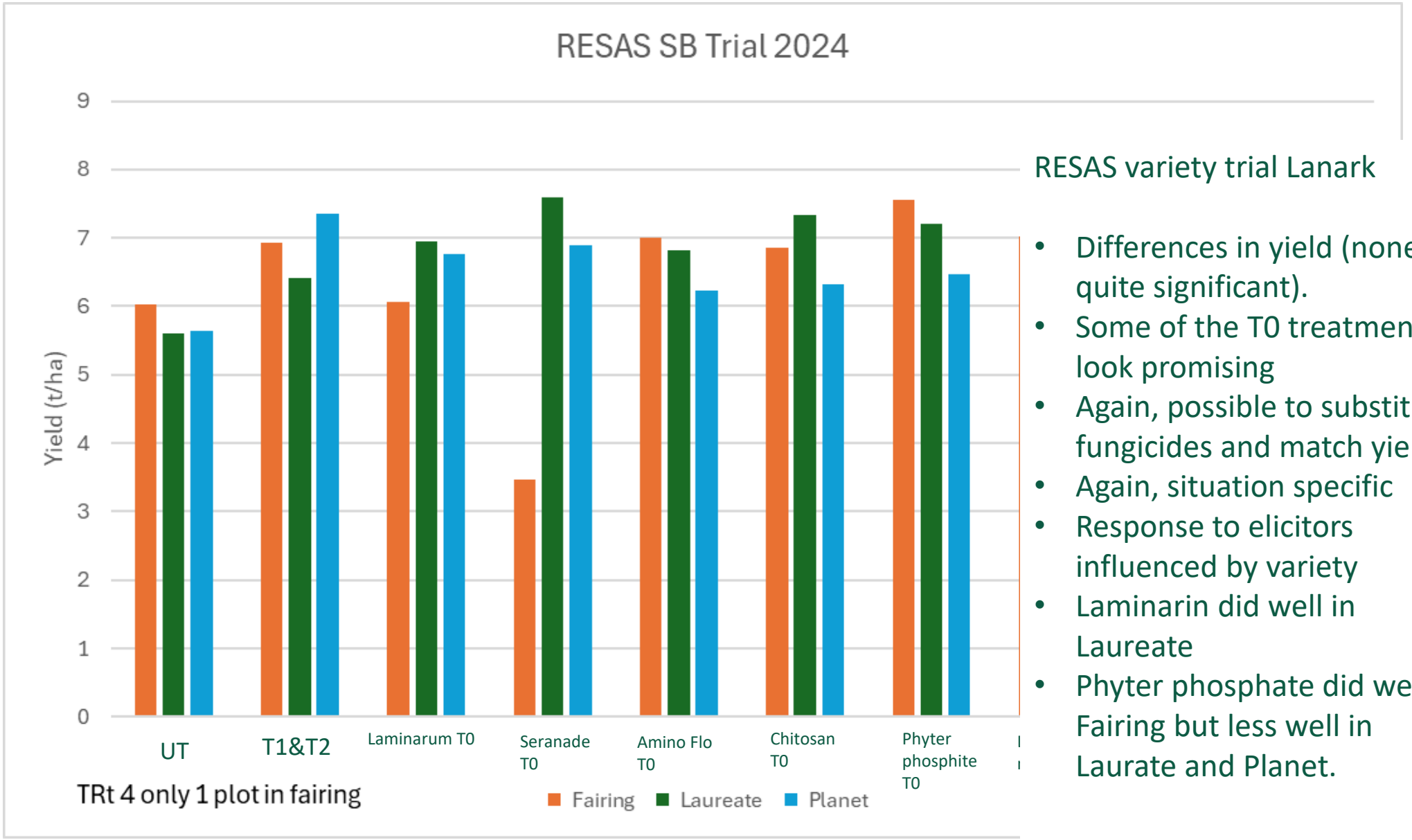

RESAS variety trial Lanark

- Differences in yield (none quite significant).
- Some of the T0 treatments look promising
- Again, possible to substitute fungicides and match yield
- Again, situation specific
- Response to elicitors influenced by variety
- Laminarin did well in Laureate
- Phyter phosphate did well in Fairing but less well in Laurate and Planet.

Barley summary

- **Rhynchosporium**: Miravis Plus (pydiflumetofen), Ipresso (isoflucypram + prothioconazole), Ascra Xpro (bixafen + fluopyram + prothioconazole) and RevyPro (mefentrifluconazole + prothioconazole) gave best control
- Good activity from Imtrex (fluxapyroxad), Myresa (mefentrifluconazole) and Proline (prothioconazole)
- **Net blotch:** Miravis Plus gave best control, but the mixtures Ascra Xpro and Ipresso also maintained good efficacy
- **Ramularia**: Miravis Plus gave the highest levels of control, with Myresa and Ipresso both more effective than Proline
- Mixtures offer the broadest spectrum and most robust control
- Yields can be maintained with lower input, tailored approaches

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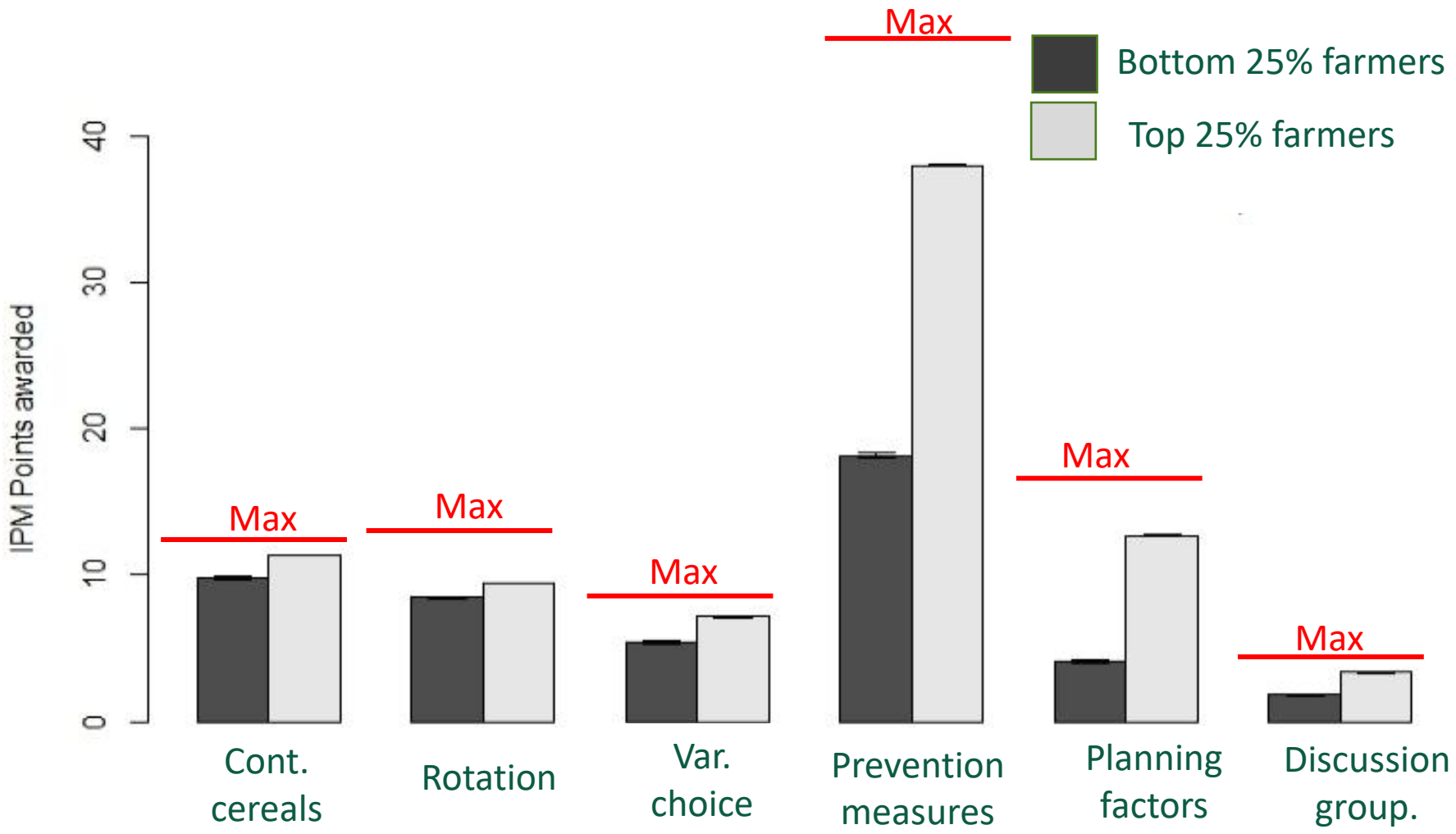
IPM Scores: High/Low IPM adopters



Plant Health Centre
Scotland's Centre of Expertise
SRUC
The Voluntary Initiative
Promoting responsible pesticide use
NFU

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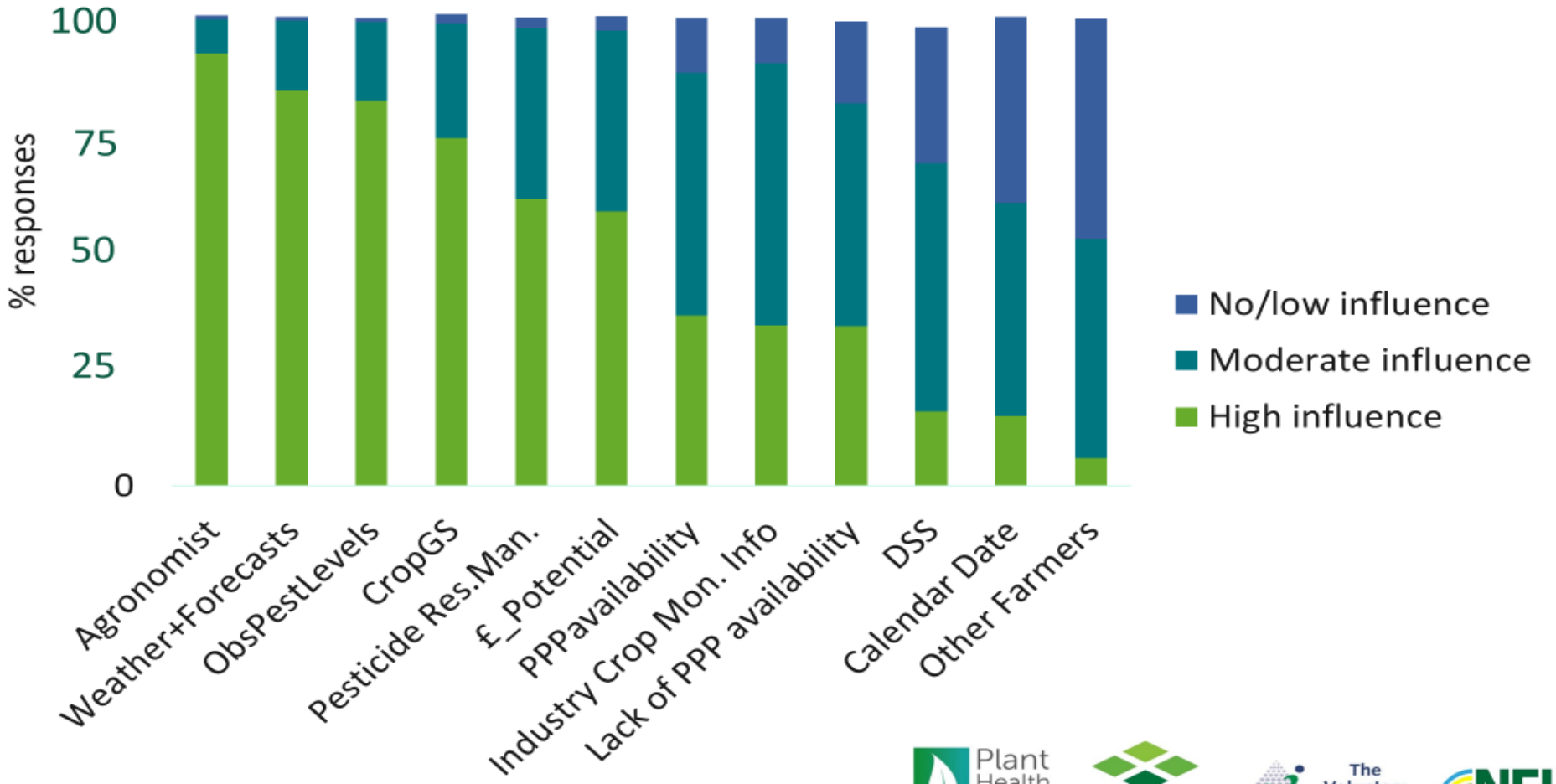
What factors influence your decision to adjust your spray programme (e.g. changes in timings, rates, products) throughout the season?



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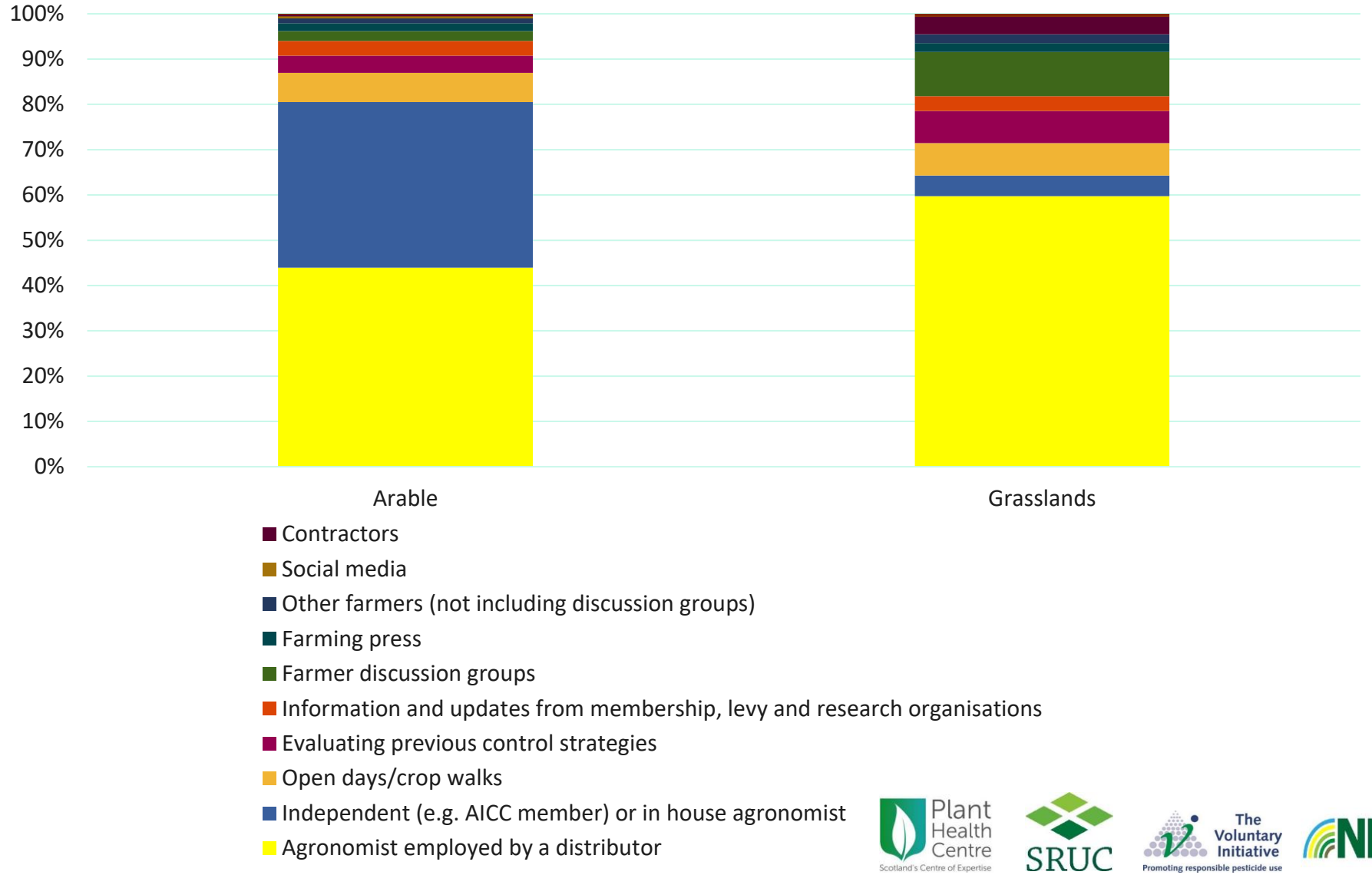
IPM information source preference



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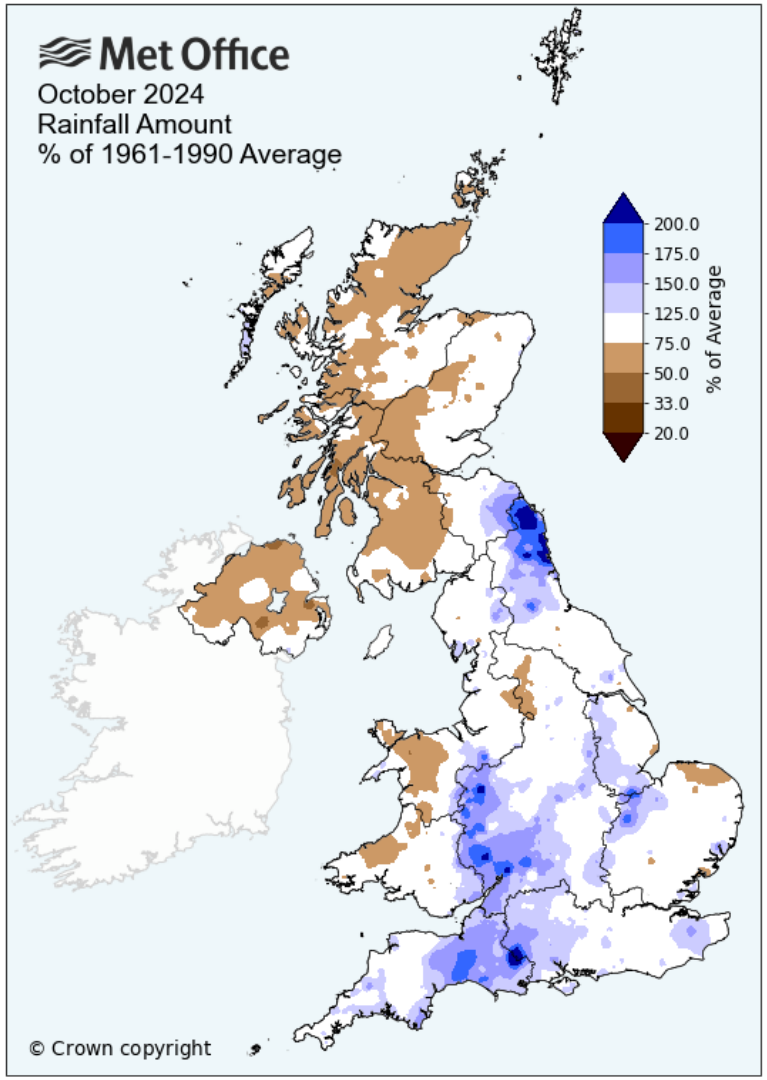
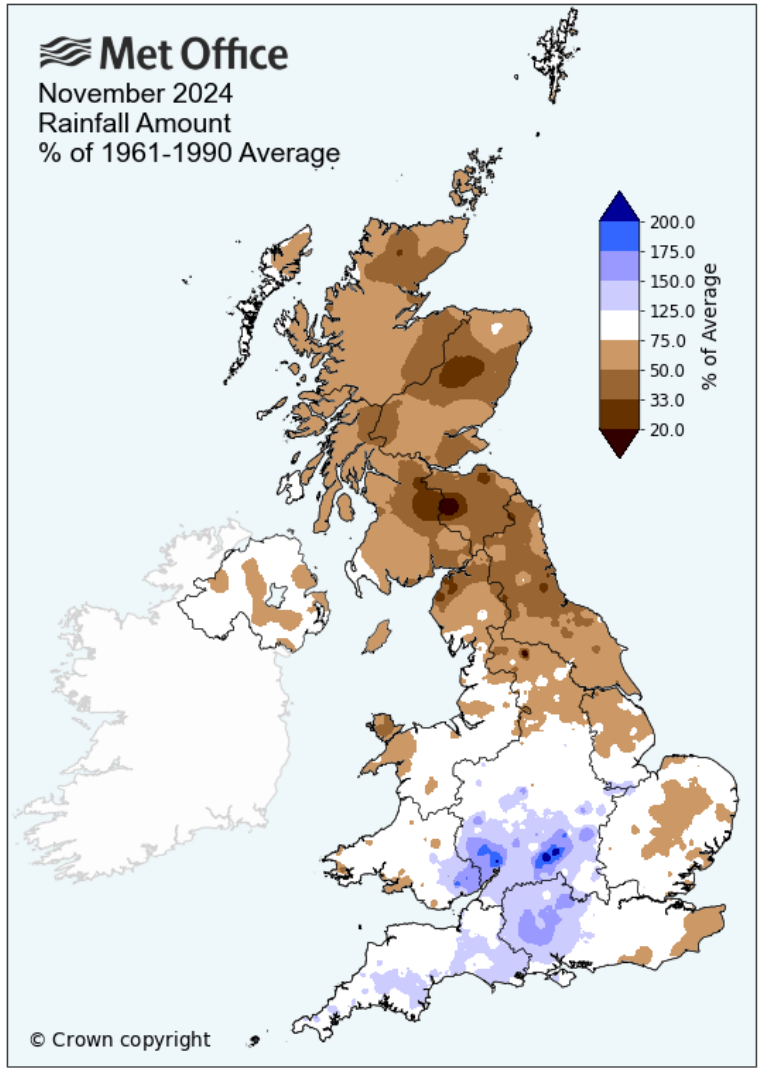
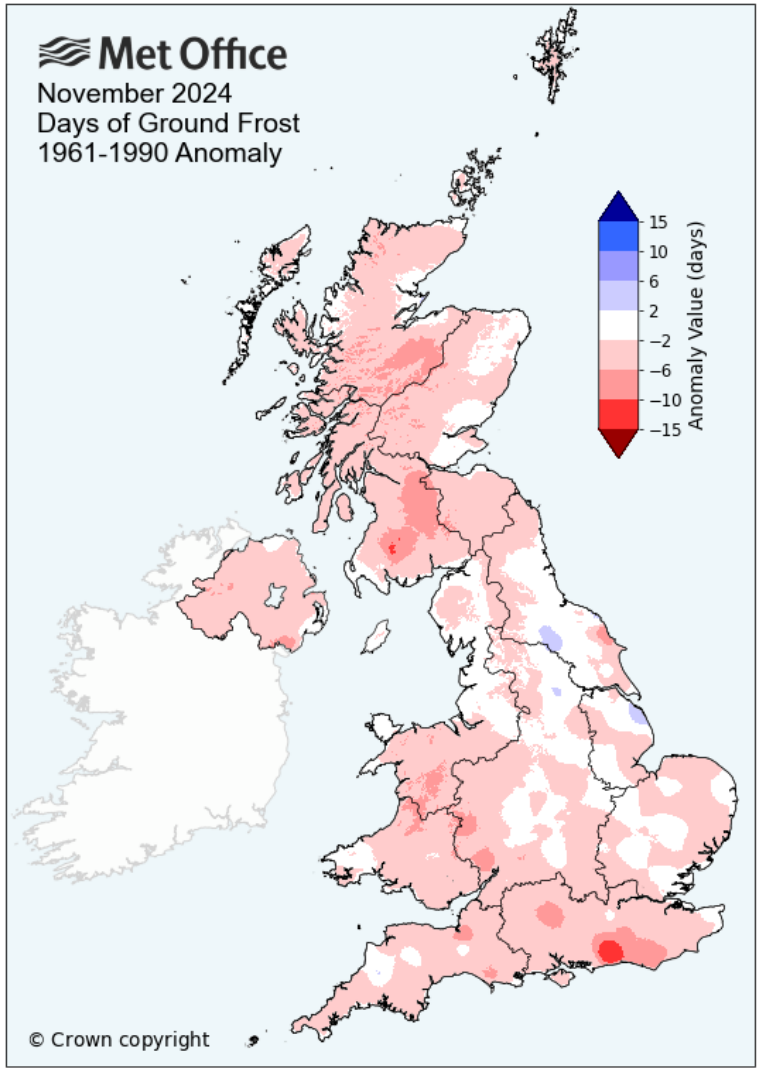
Take home messages







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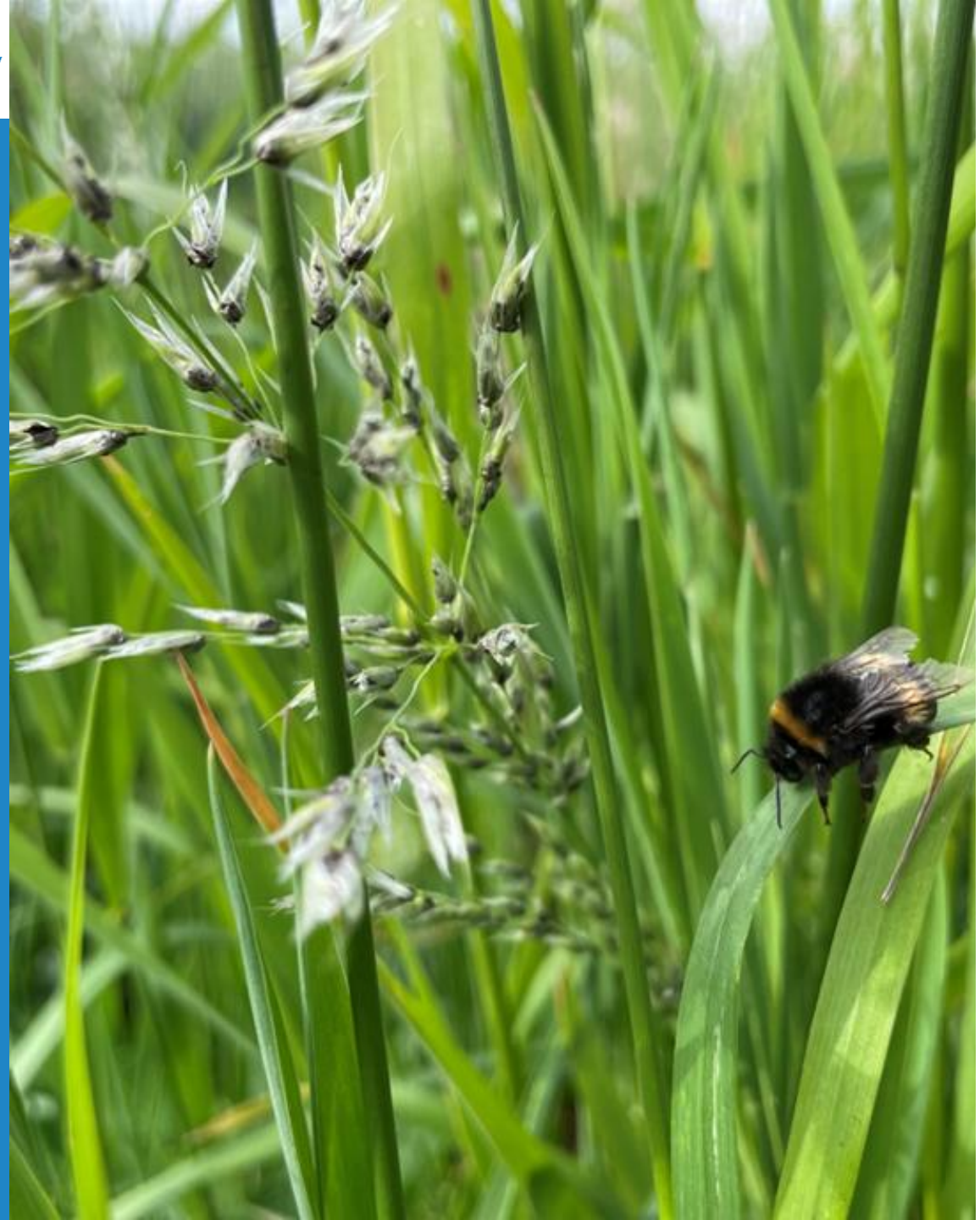

IPM for 2025 season

- ➢ Winter crops well established
- ➢ Optimise and tailor inputs to site and season
- ➢ Utilise IPM plan to consider and discuss options
- ➢ IPM in arable crops aligns with sustainable and regenerative approaches
- ✓ Can eliminate unnecessary overspends on pesticides
- ✓ Can reduce pest, weed and disease risks and protect crop yields
- ✓ Reduces the risk of pesticide resistance and control failures
- ✓ Can ‘gap fill’ where pesticides are no longer available
- ✓ Can allow you to discuss and query advice you get on farm

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Thank you

Acknowledgements Fungicide Performance Trials: AHDB; ADAS; NIAB; SRUC; Harper Adams University; Teagasc

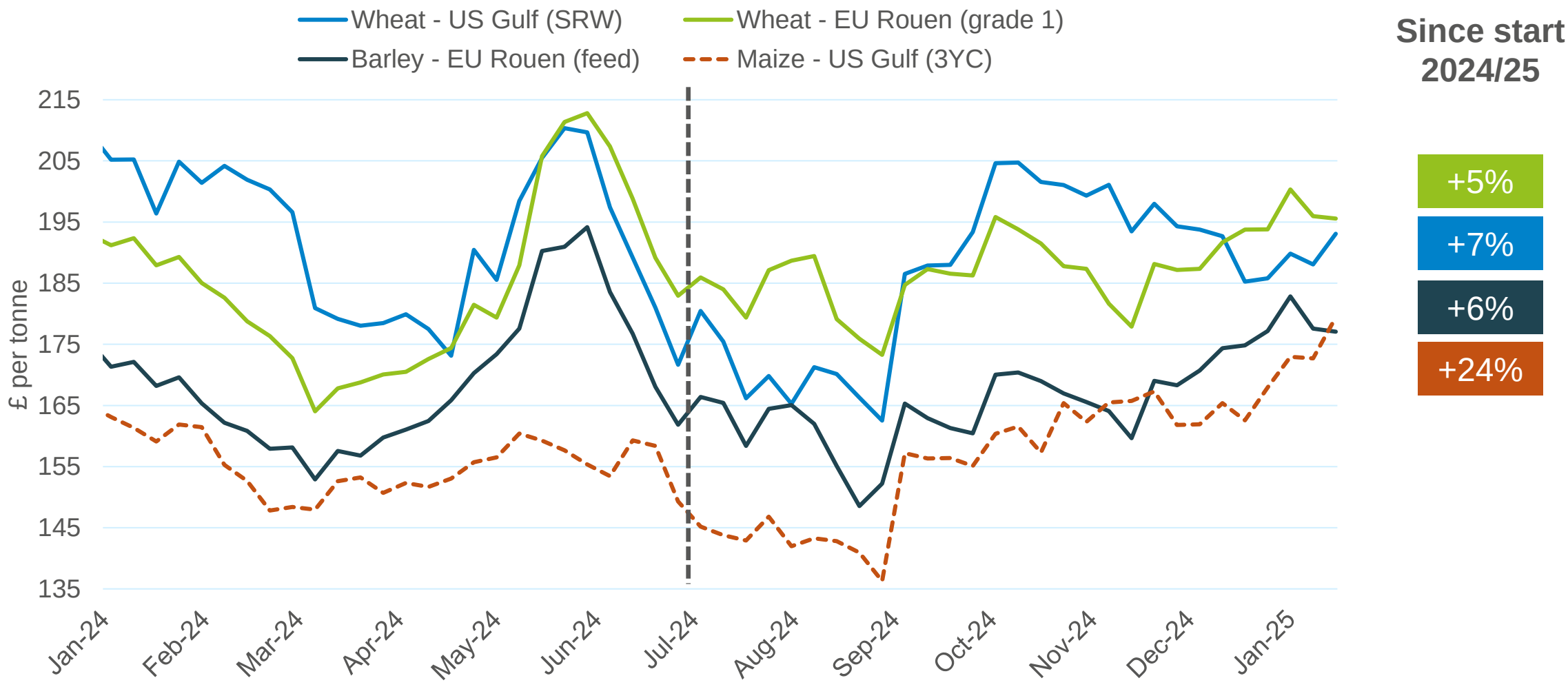
Market update and selling strategies

Helen Plant / Olivia Bonser, Senior Analyst

CEREALS & OILSEEDS

Global drivers

Global grain export prices



Source: International Grains Council (FOB prices), ECB.

2024/25 total grain supply and demand

Global production

= 2,288 Mt

Global demand

= 2,312 Mt

Stocks to fall for wheat, maize and barley

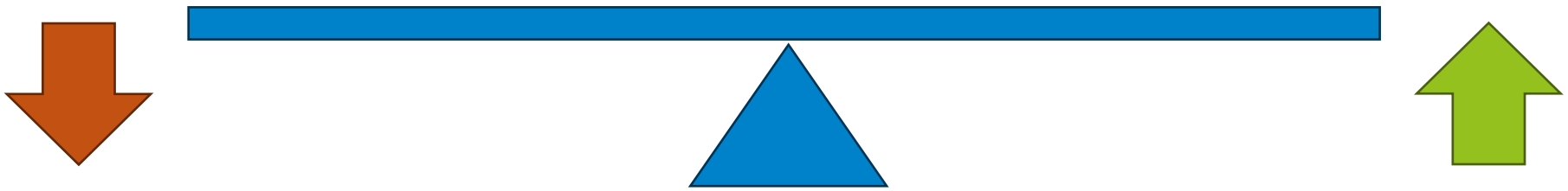
Worries about global economic growth & demand

Reliance on South American maize

Source: USDA (December 2024)

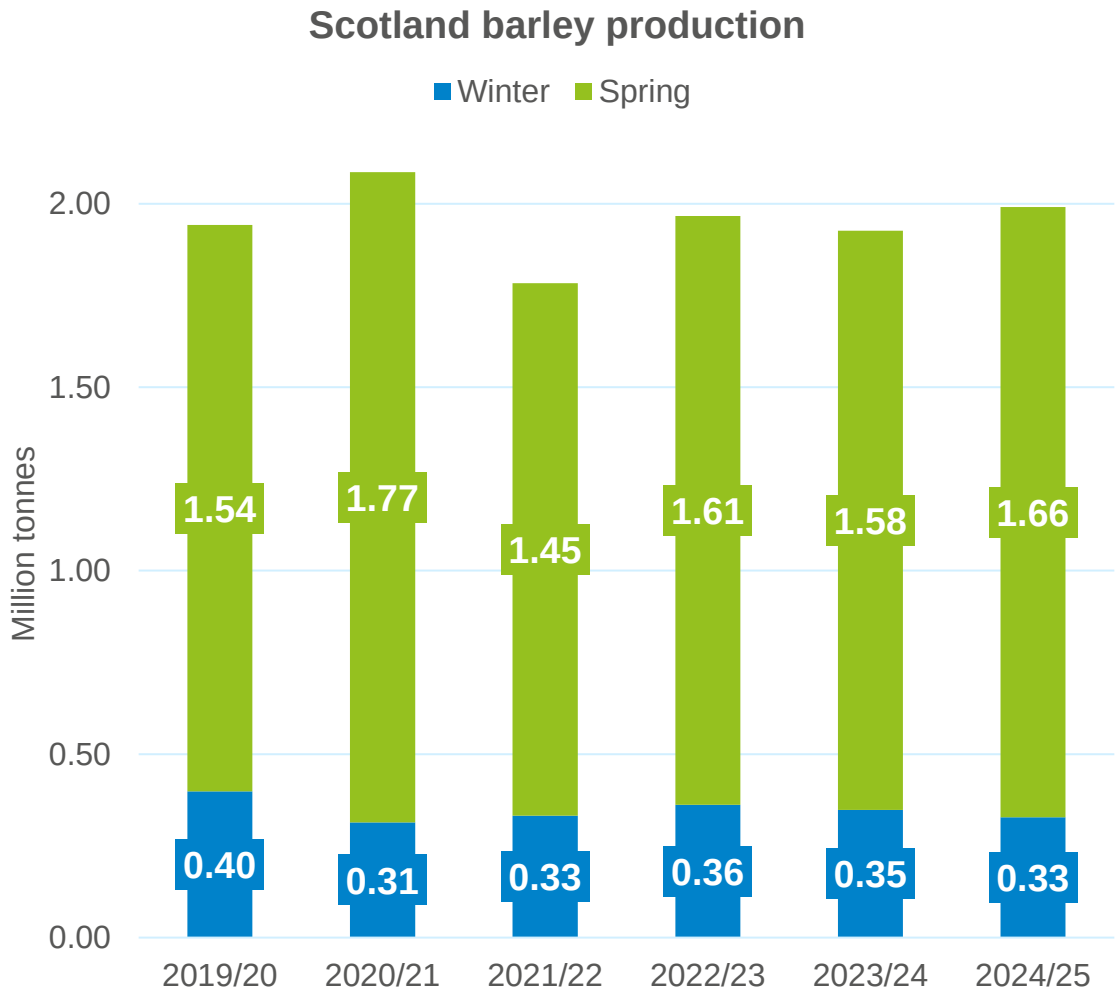
Factors to watch in 2025

- Strong maize crop expectations in Brazil
- Risk of trade disputes
- Global GDP mixed picture
- Bigger 2025 US maize area??
- Dry weather for Argentine maize
- Black Sea export pace slowing
- Mixed start for 2025/26 wheat crops
- EU 2025/26 spring barley area to contract

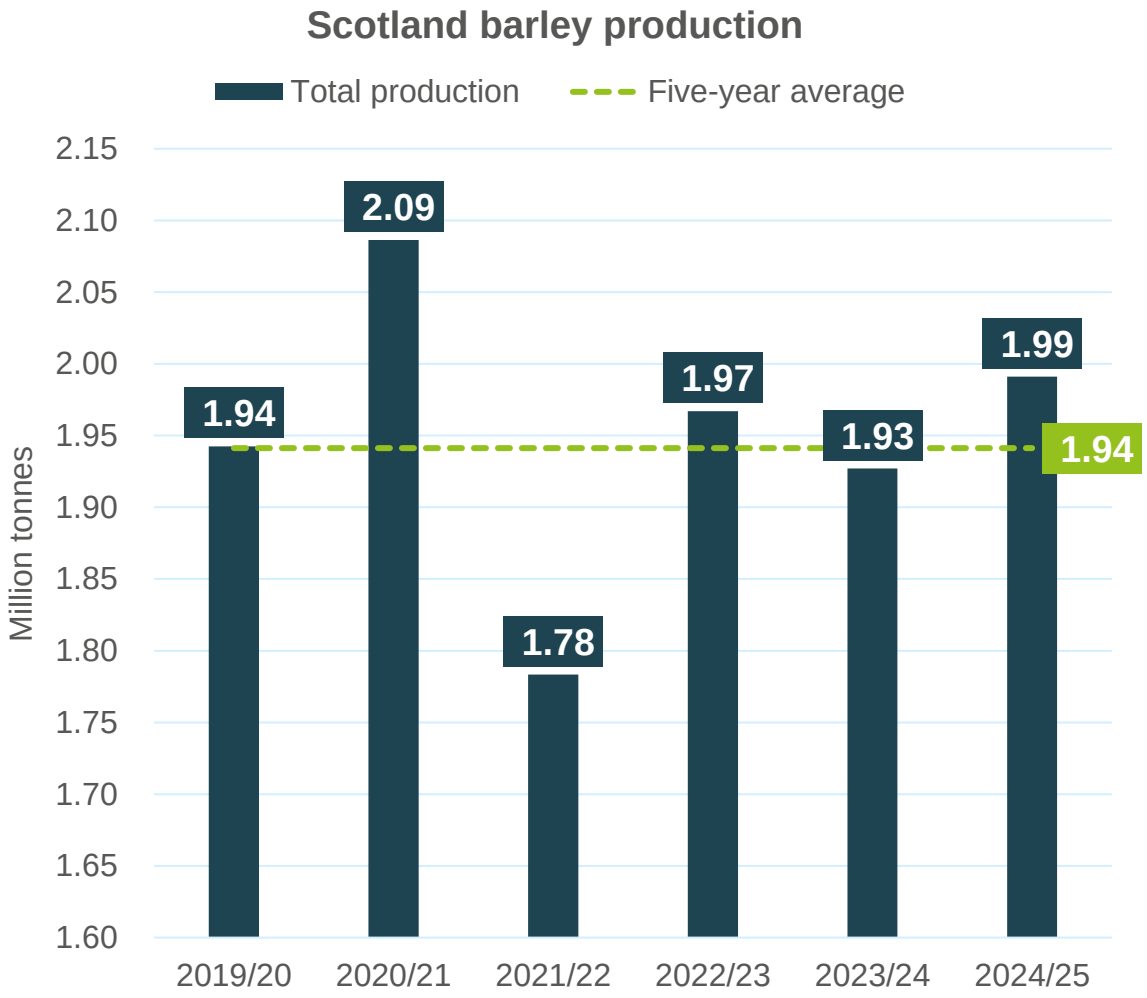


Domestic supply and demand

Largest Scottish barley crop since 2020

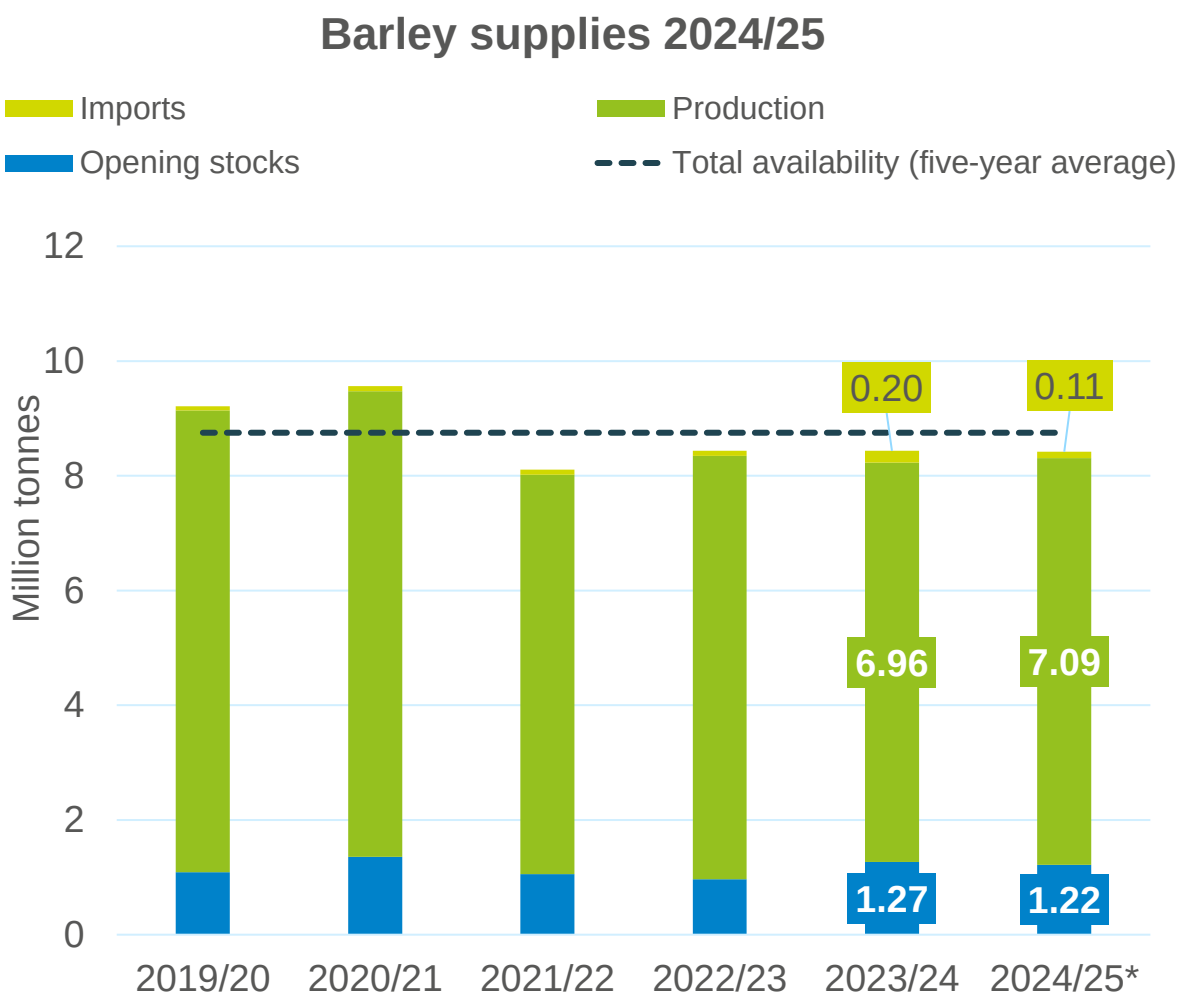


Source: Scottish Government



Source: Scottish Government

UK barley supplies 2024/25



Source: Defra, AHDB forecasts

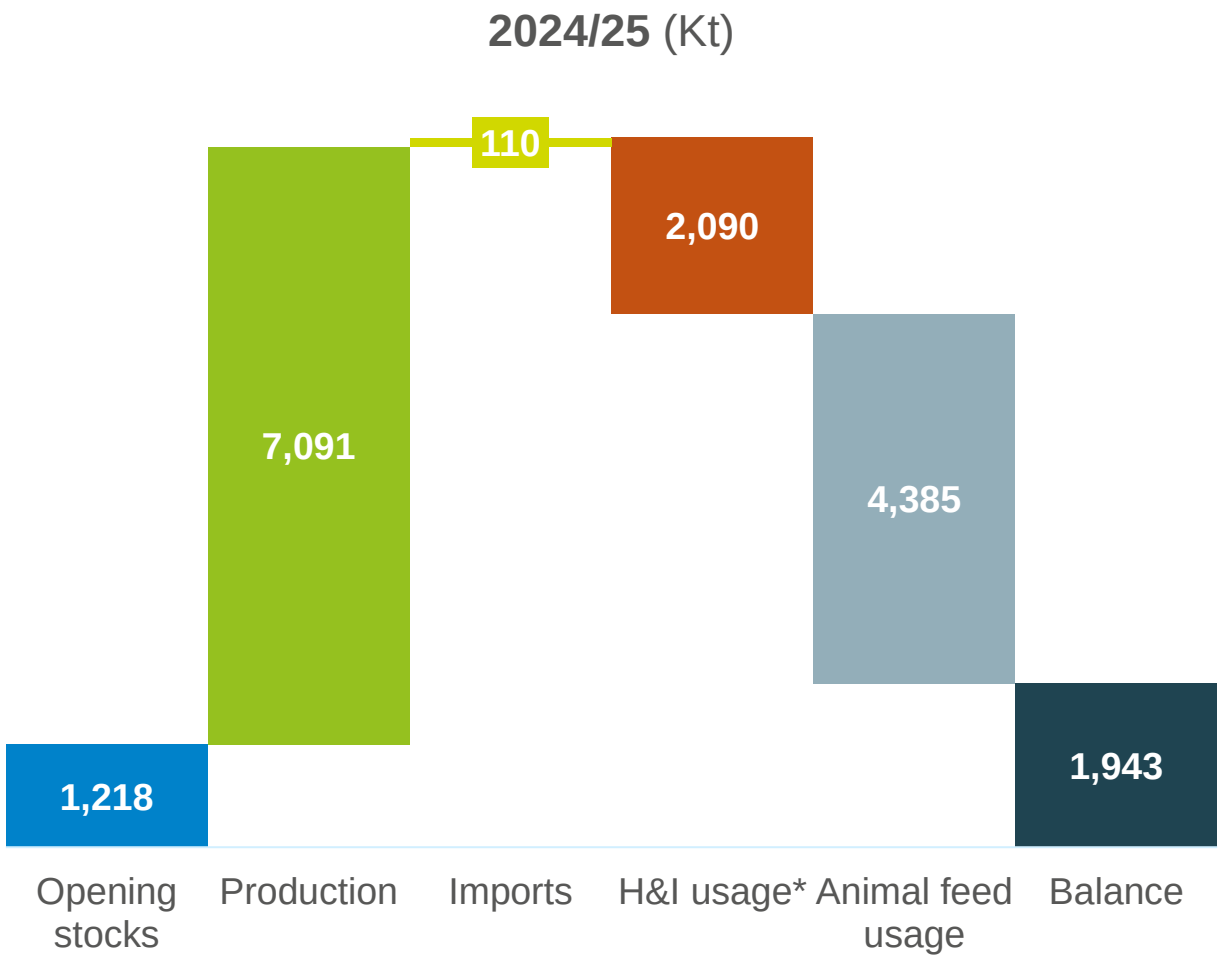
*November

- Reduced opening stocks
- Increased UK production
- Slower imports (- 58%**)

Source: HMRC - Nov

**Jul

A tighter barley supply and demand balance



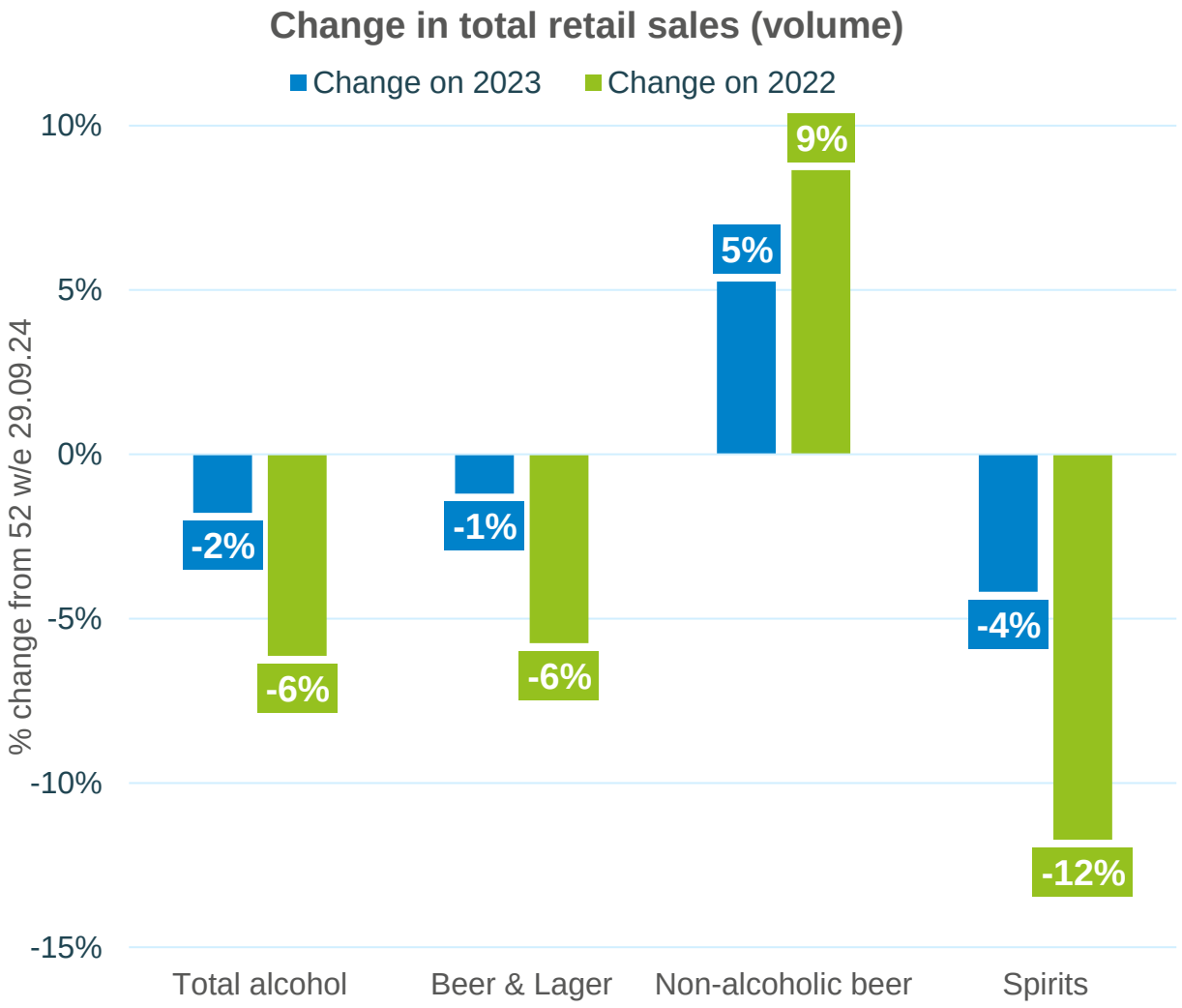
Source: AHDB, Defra *includes seed and other Based on Nov usage estimates

H&I consumption - 3% YoY

Animal feed usage + 5% YoY

Barley balance - 8% YoY

Headwinds for malting demand



Source: Kantar

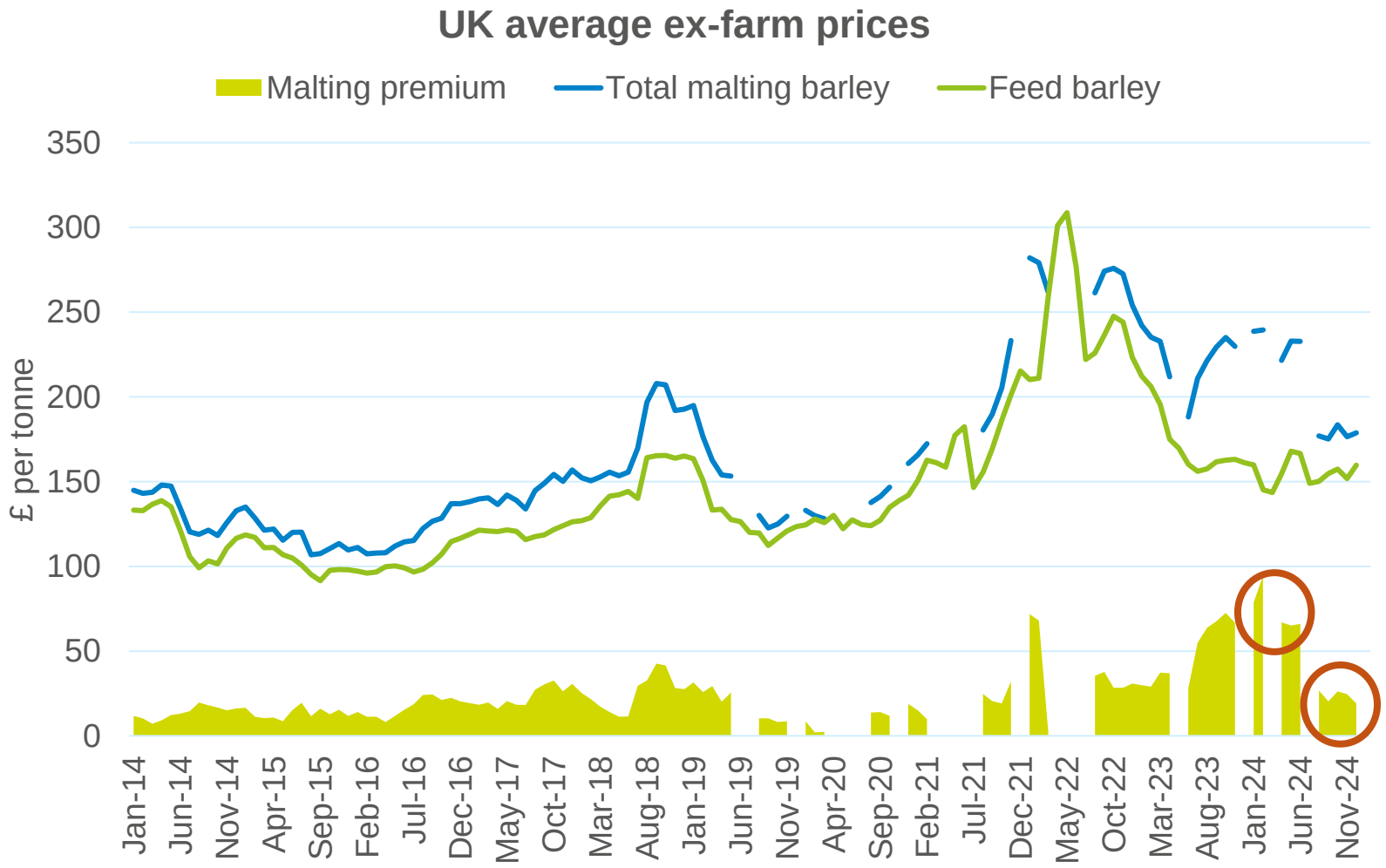
Scotch whisky exports H1 2024

Export value: -18% (YoY)

Export volume: -10% (YoY)

Source: Scotch Whisky Association

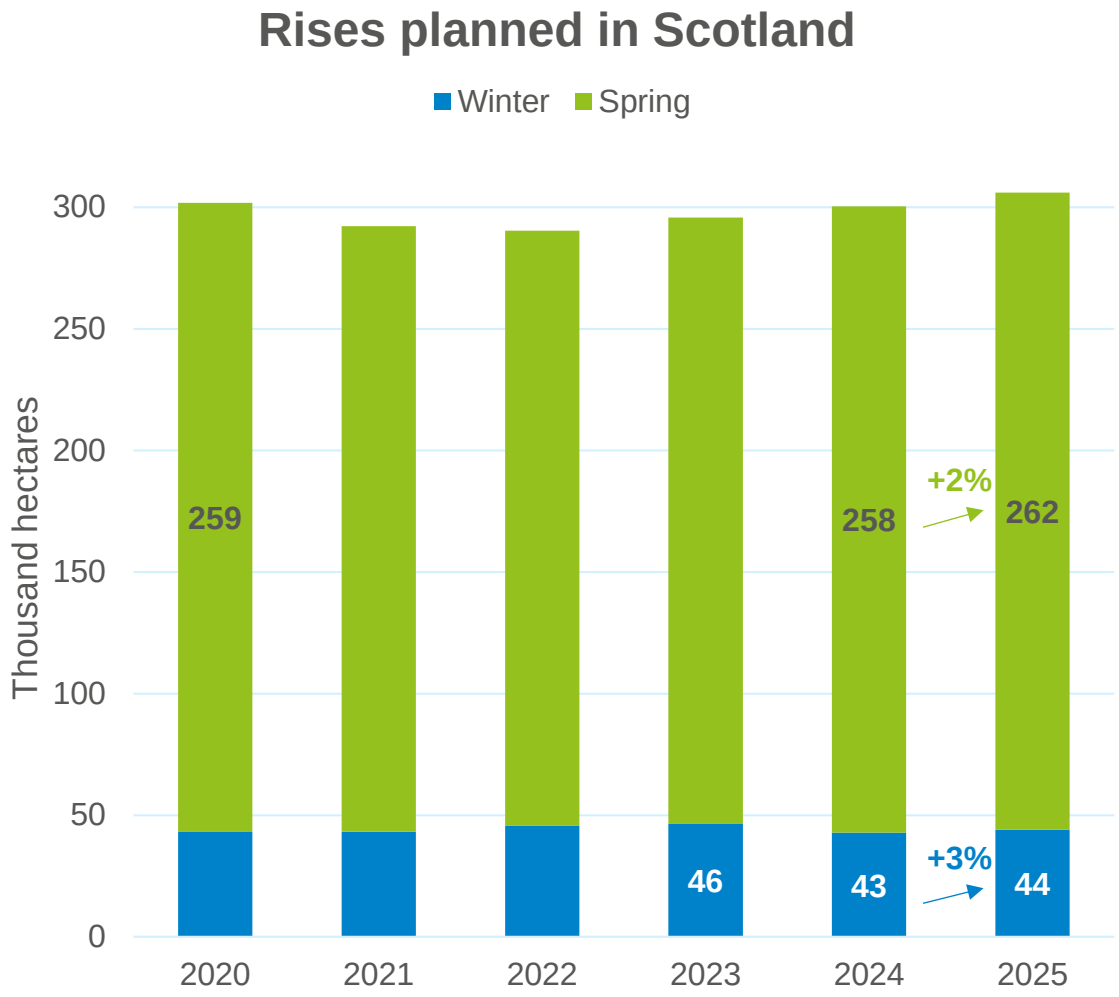
Premiums pressured



- Nitrogen
- Screenings
- Specific weights

Source: AHDB Corn Returns

Barley area plans for harvest 2025



Source: Scottish Government, AHDB's Early Bird Survey

But smaller barley areas for the UK as a whole

Total

↓ **9%**

Winter

↓ **1%**

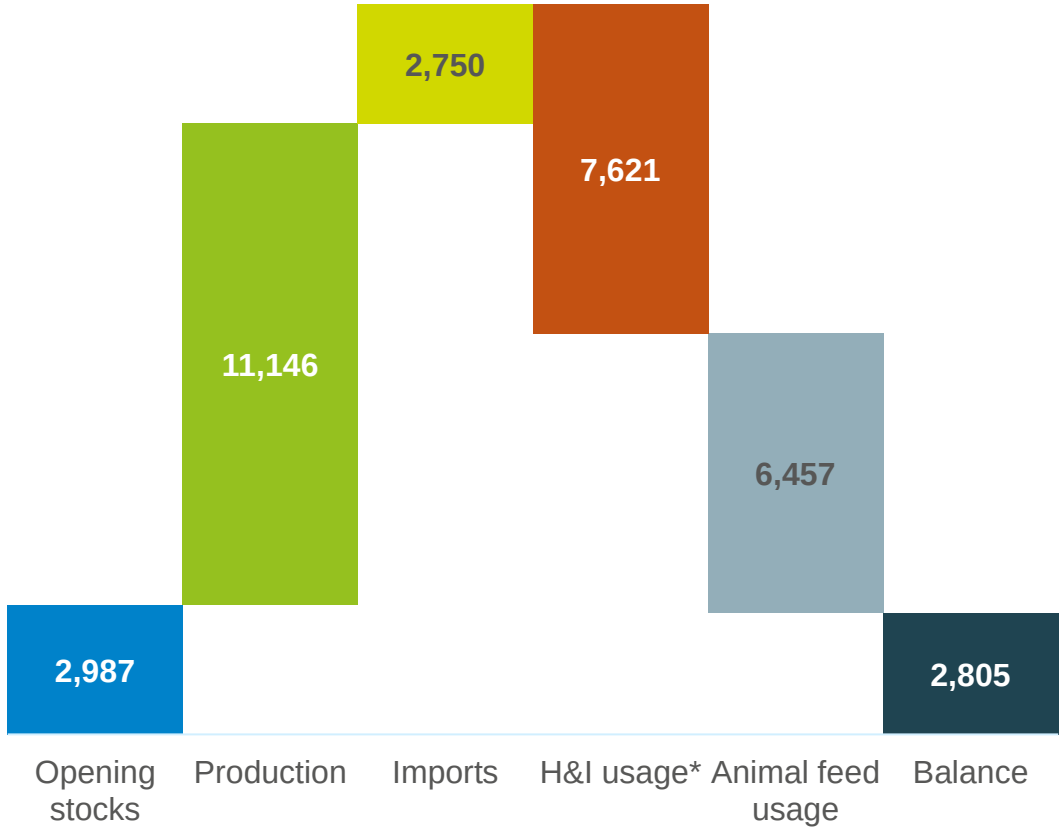
Spring

↓ **13%**

Source: Defra, AHDB's Early Bird Survey

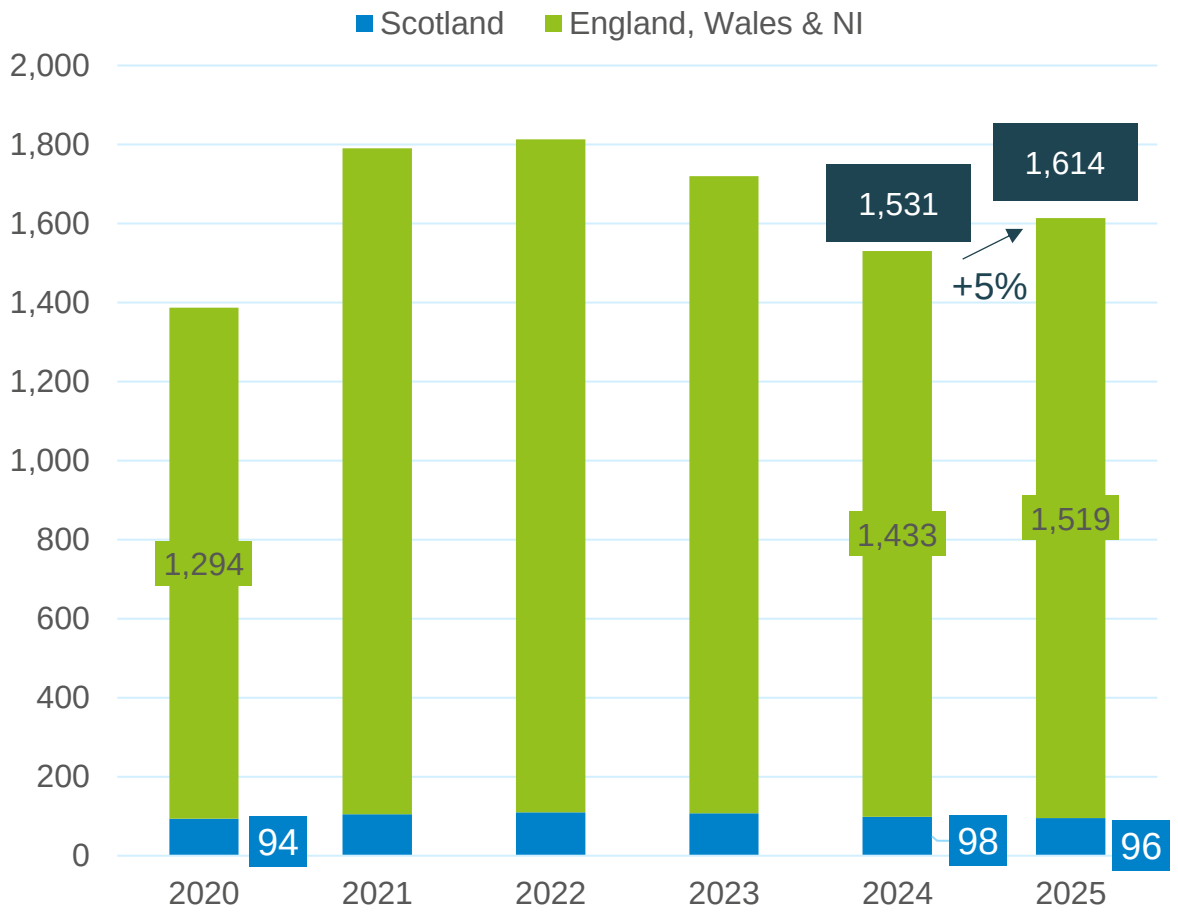
UK wheat supply and demand

2024/25 supply & demand (Kt)

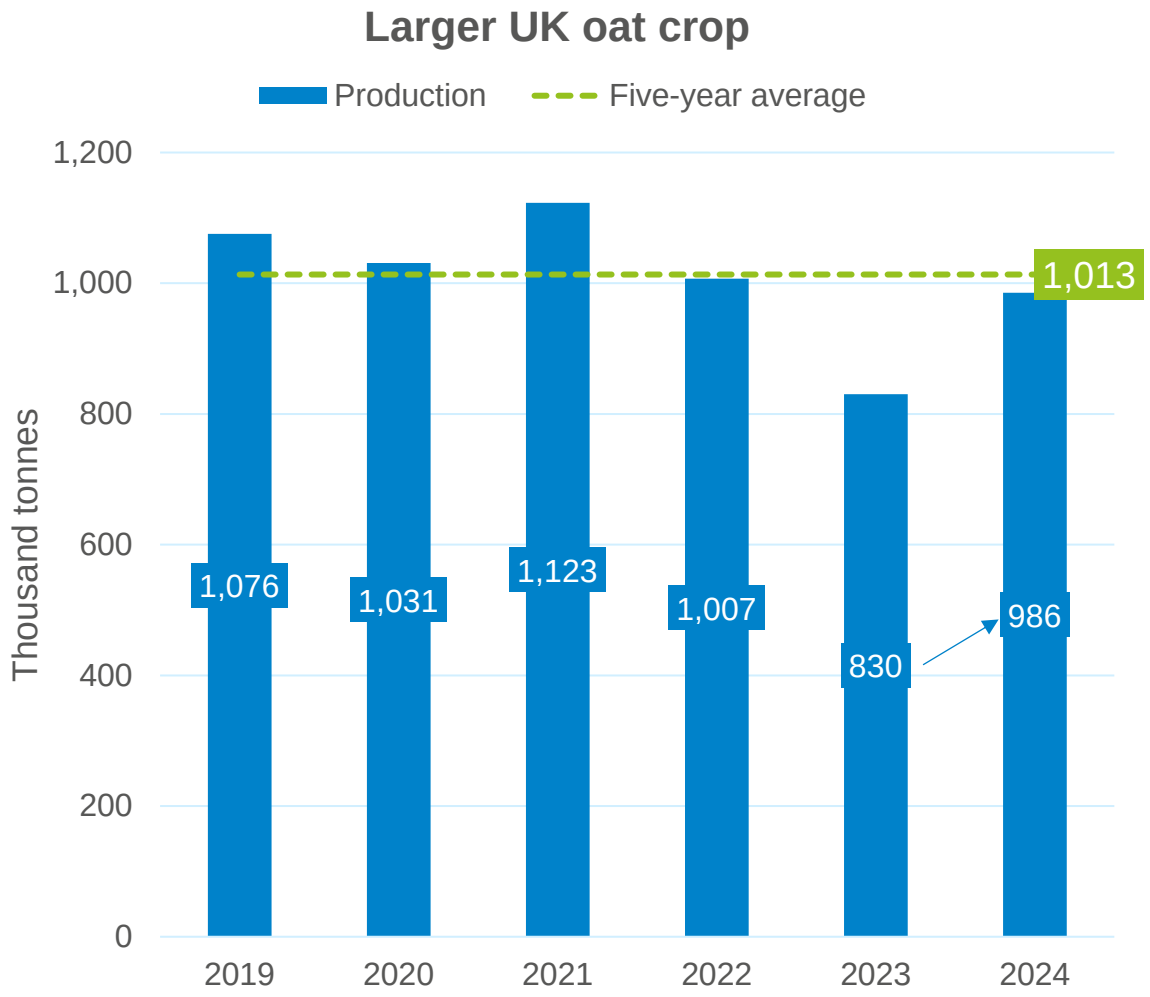


Source: AHDB, Defra *includes seed and other Based on Nov usage estimates

Rebound in UK wheat area but further decline expected in Scotland



Heavier UK oat supplies – larger crops and struggling exports



Source: Defra, AHDB, HMRC

- Domestic milling demand forecast down 1%
- More to be fed on-farm
- Slow oat exports (-91% so far)
- Larger area (+3%) intended for harvest 2025

Rapeseed

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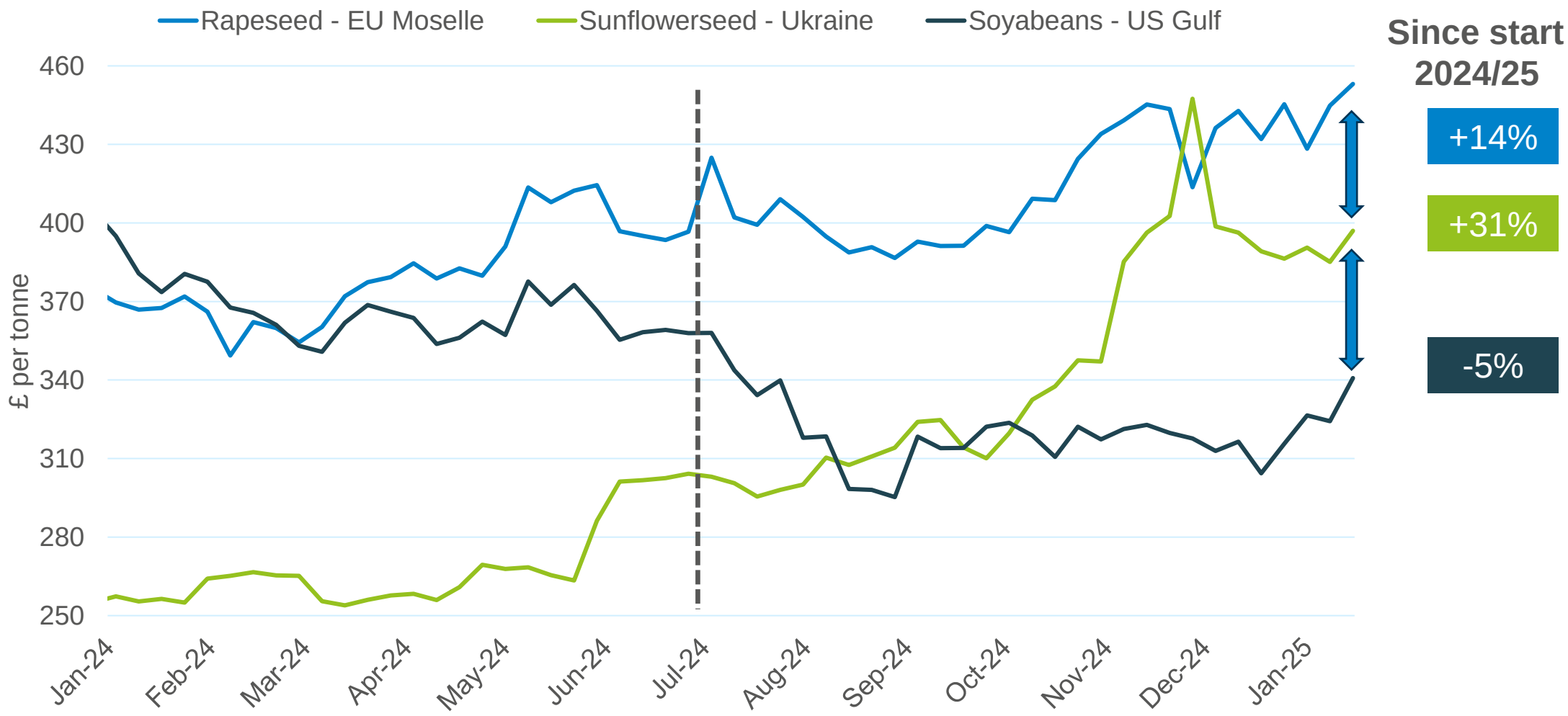
Rapeseed prices supported by tight global supplies

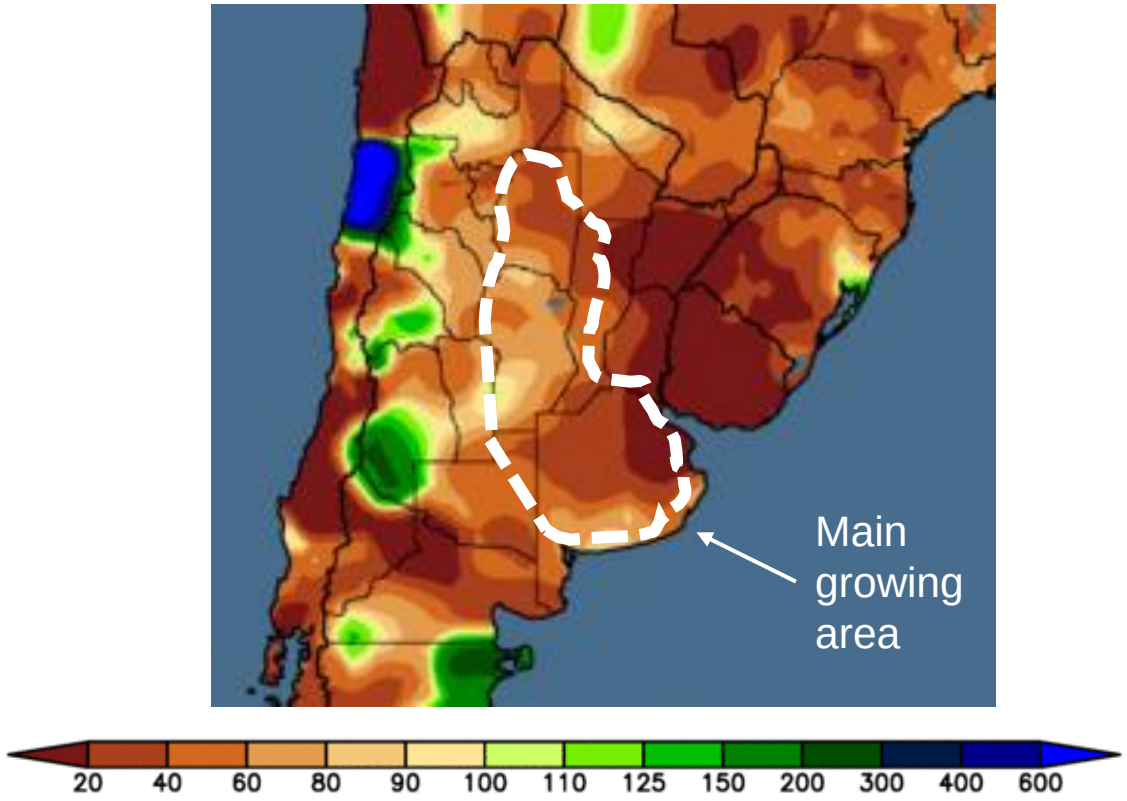


Source: International Grains Council (FOB prices), ECB.

Looking ahead

Argentina soyabean crops

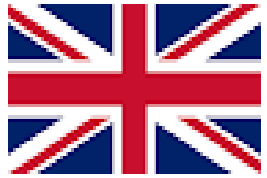
Percentage of normal rainfall 12 Dec – 15 Jan



Source: World Ag Weather

Mixed picture for 2025 OSR areas

17%



17%

6%

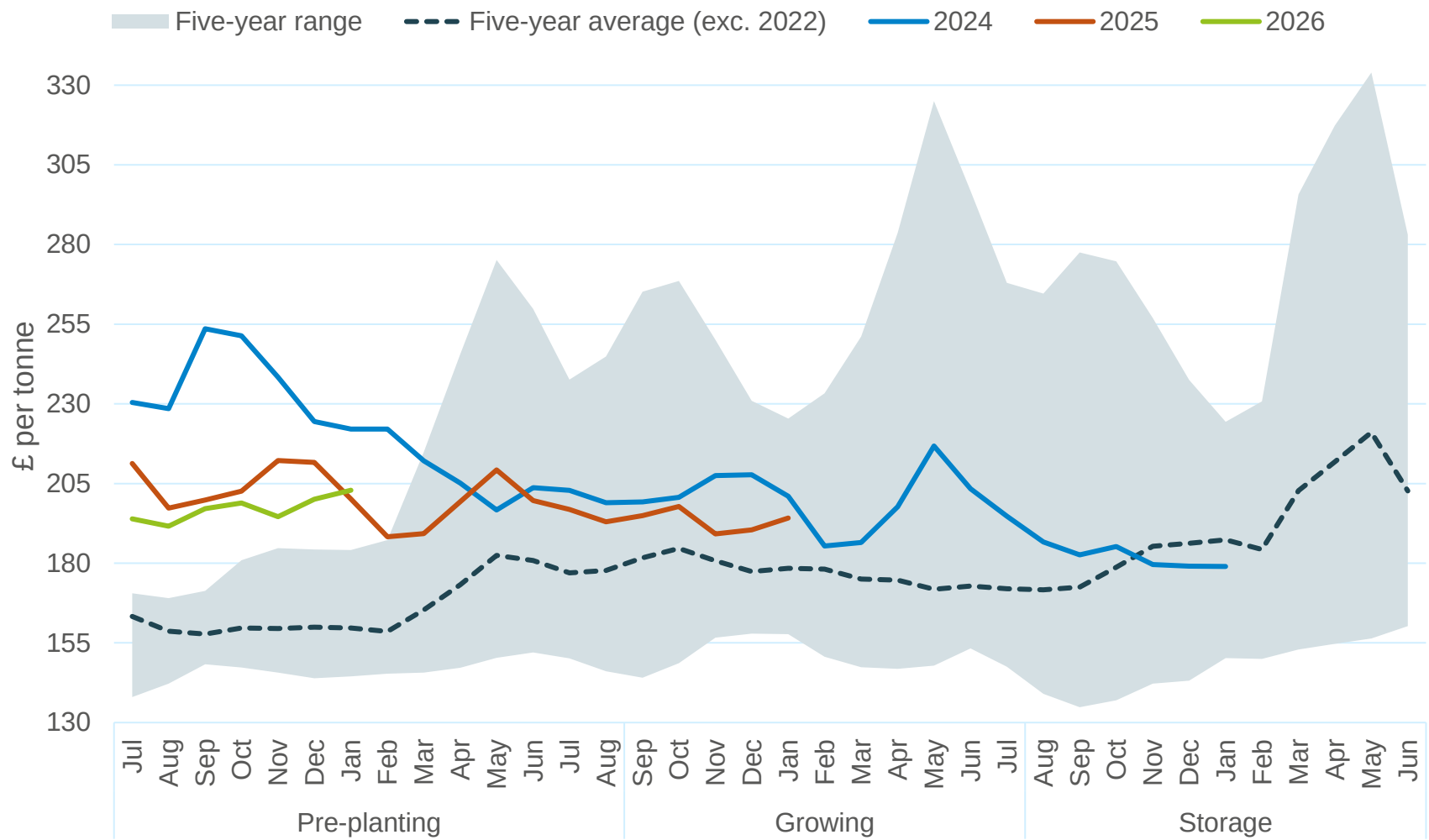
But rises for Canada & Australia too?

Source: ASAP Agri, AHDB, Coceral, IGC

Marketing

CEREALS & OILSEEDS

UK feed wheat futures by crop year*



What's your break-even point?

FARMBENCH

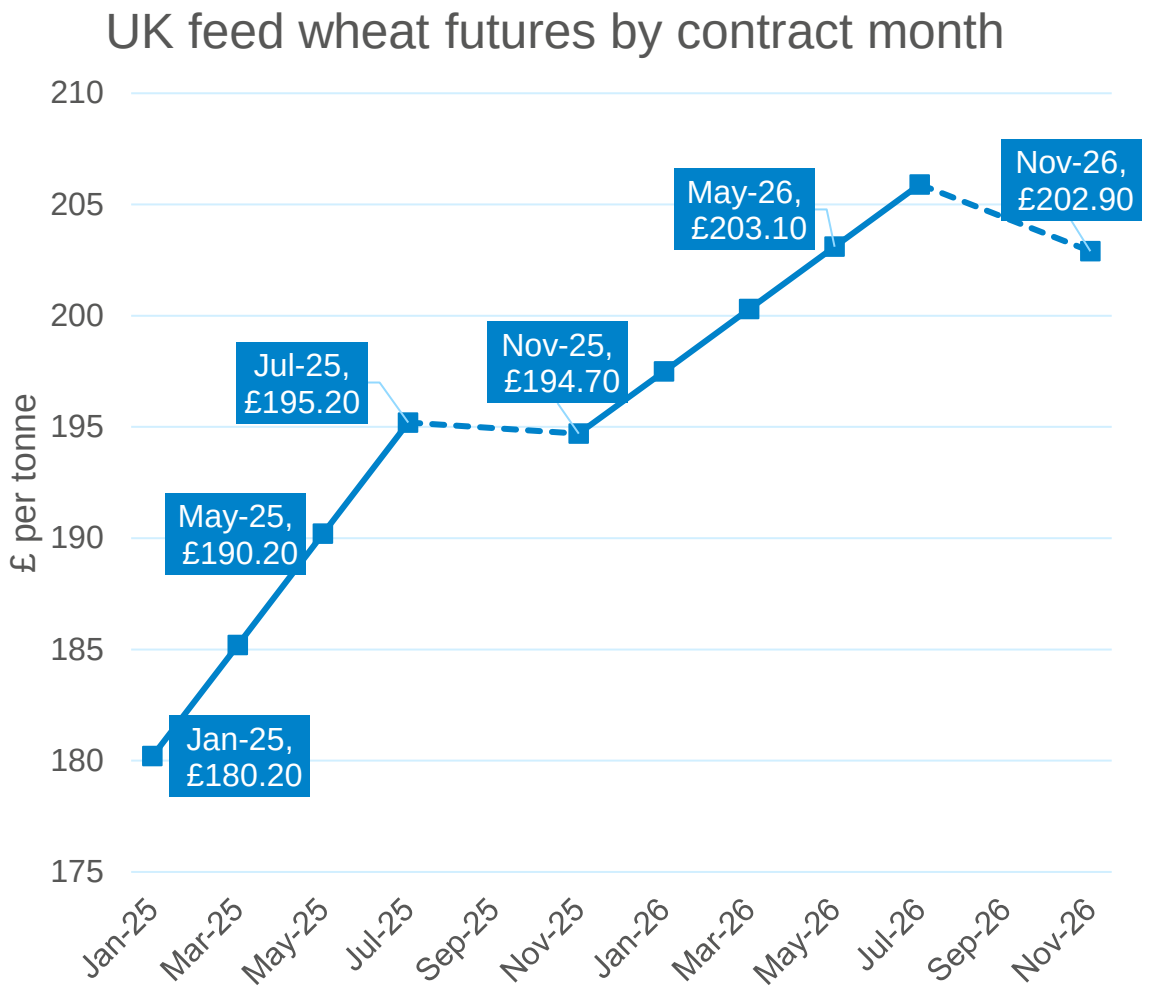
Source: ICE

*the November contract for each crop until it expires, followed by nearby prices

Spot or forward?

Consider:

- Cash flow needs
- What does it cost you to store it?
- What's your view on the outlook?
- Your basis
  (the gap between ex-farm and futures prices)



Source: ICE (as of 17 Jan)

Key takeaways

Fragile global grain market – tight supplies but lacklustre demand

Malting premiums under pressure with sluggish demand a key watch point

Rapeseed market tight but limited by ample global soyabeans

This is a year to watch markets more closely


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

Agronomy Roadshow

Understanding and managing grain contaminants

Dr Kristina Grenz

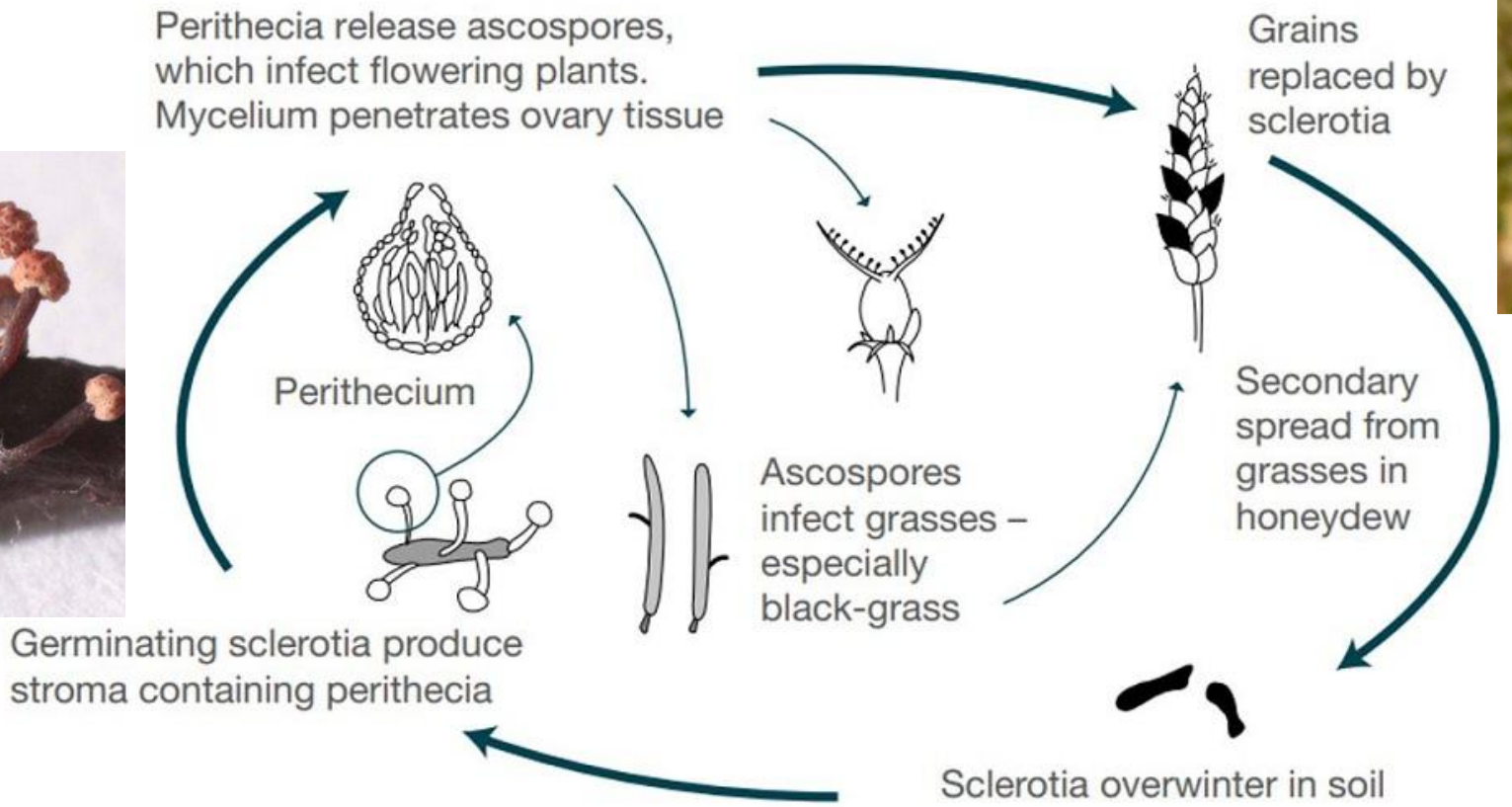
CEREALS & OILSEEDS


MIDSOMER
MURDERS

Ergot, *Claviceps purpurea*

- Fungal pathogen
- Infects cereals
  - Rye, triticale, wheat, barley, oats
- Also infects grasses
- No significant impact on yield
- Produces toxic alkaloids

Lifecycle


Perithecia release ascospores, which infect flowering plants. Mycelium penetrates ovary tissue
Grains replaced by sclerotia
Perithecium
Ascospores infect grasses – especially black-grass
Secondary spread from grasses in honeydew
Germinating sclerotia produce stroma containing perithecia
Sclerotia overwinter in soil


Kristina Grenz


NIAB

Ergot in the field





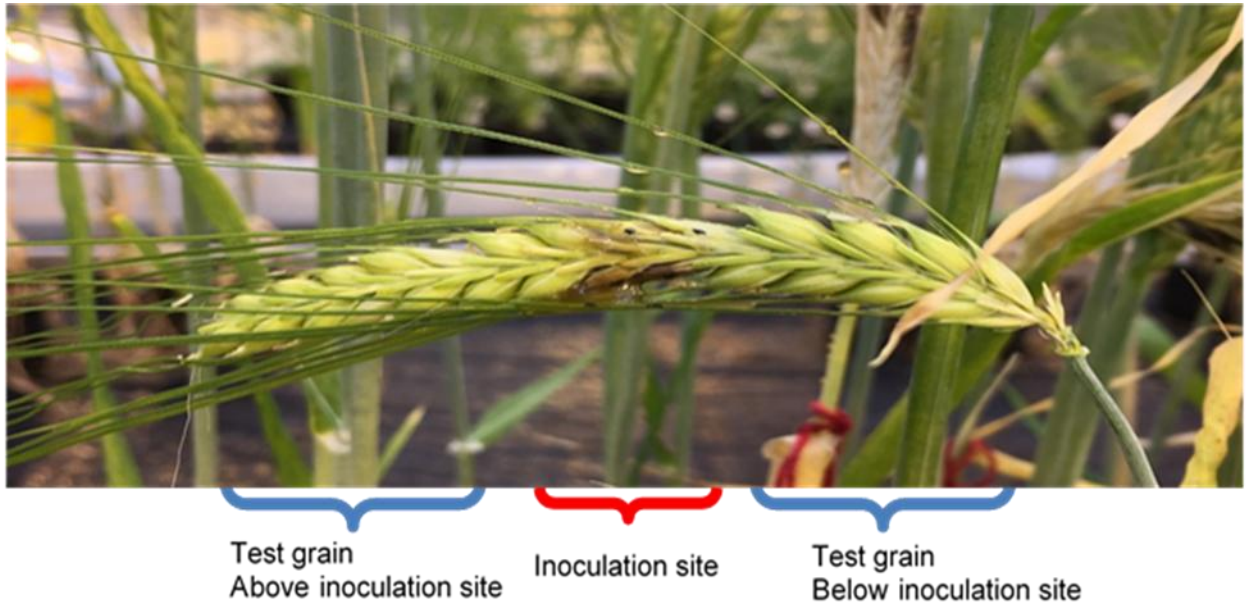
Photos taken by Kristina Grenz

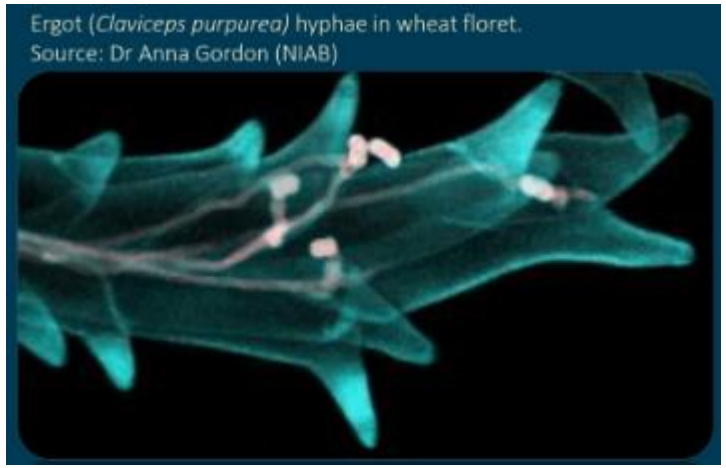
Ergot alkaloids

- Alkaloids are naturally occurring organic nitrogen-containing bases
- 12 main ergot alkaloids
- Extremely toxic
- Egotism – long-term alkaloid poisoning
- Hallucinogenic properties like LSD
- Also, medical applications

Alkaloid transmission

- It was unknown how ergot infects wheat and barley heads
- AHDB funded project lead by Dr Anna Gordon & Dr Lesley Boyd at NIAB
- Investigation of ergot infection in the ear
- Showed there were alkaloids detected in the ear before the point of infection
- Even if sclerotia are removed the ear could pose a risk





So, why is ergot so relevant now?

Limits and legislation

Ergot alkaloid limits in flour are very strict

- EU reduced the maximum ergot sclerotia limit in grain
- July 2024 - Established maximum levels for ergot alkaloids in cereal products
- EU and NI

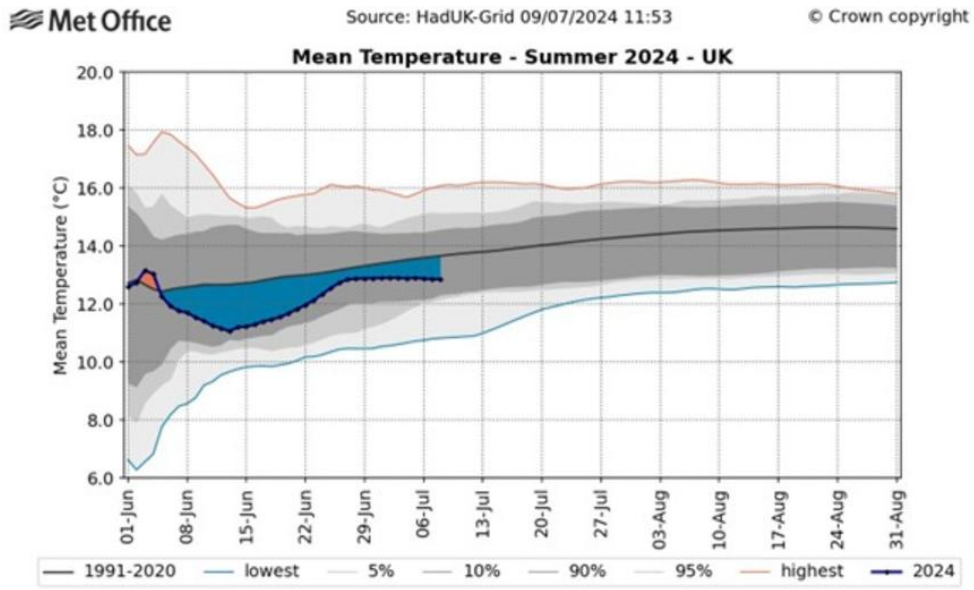
- Under GB Assimilated Law EU 1881/2006 – 0.5g/kg Maximum Level (ML) for ergot sclerotia in unprocessed cereals
- No ML for ergot alkaloids in GB

For more info check out the AHDB webpage or AIC's FAQs

2024 was an exceptionally challenging year

Harvest results variable due to challenging weather

Monday, 14 October 2024



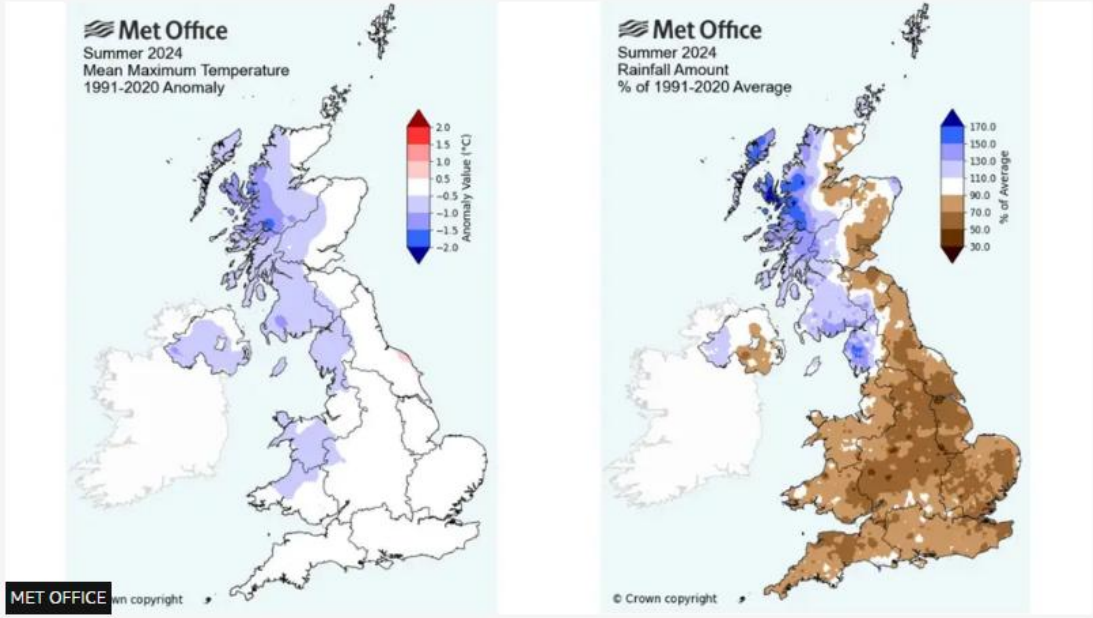
When will it stop raining?

BBC

WEATHER

Coolest UK summer since 2015

This year bucks the trend of the warm summers we have seen in recent years.
The last time the UK had a cooler than average summer was back in 2015.



The coolest and wettest weather this summer has been in the north-west of the UK

High-risk factors for ergot

- Cool and wet conditions during flowering, which facilitates spore production and prolongs the flowering period
- Grassweeds, particularly black-grass
- Grass margins containing early flowering grass species
- Late and secondary tillering
- Open pollinated wheat varieties
- Varieties with a long flowering period

Contaminants monitoring at AHDB

Monitoring of contaminants in UK cereals used for processing food and animal feed (2016-2025)

- Scientific, evidence-based approach to help guide policy makers as to whether any changes need to be made to policy
- Results help inform levy payers on any potential harvest risks and changes to policy
- **Independent** monitoring scheme to validate other industry findings to provide consumer confidence in the UK and abroad

UK FLOUR MILLERS

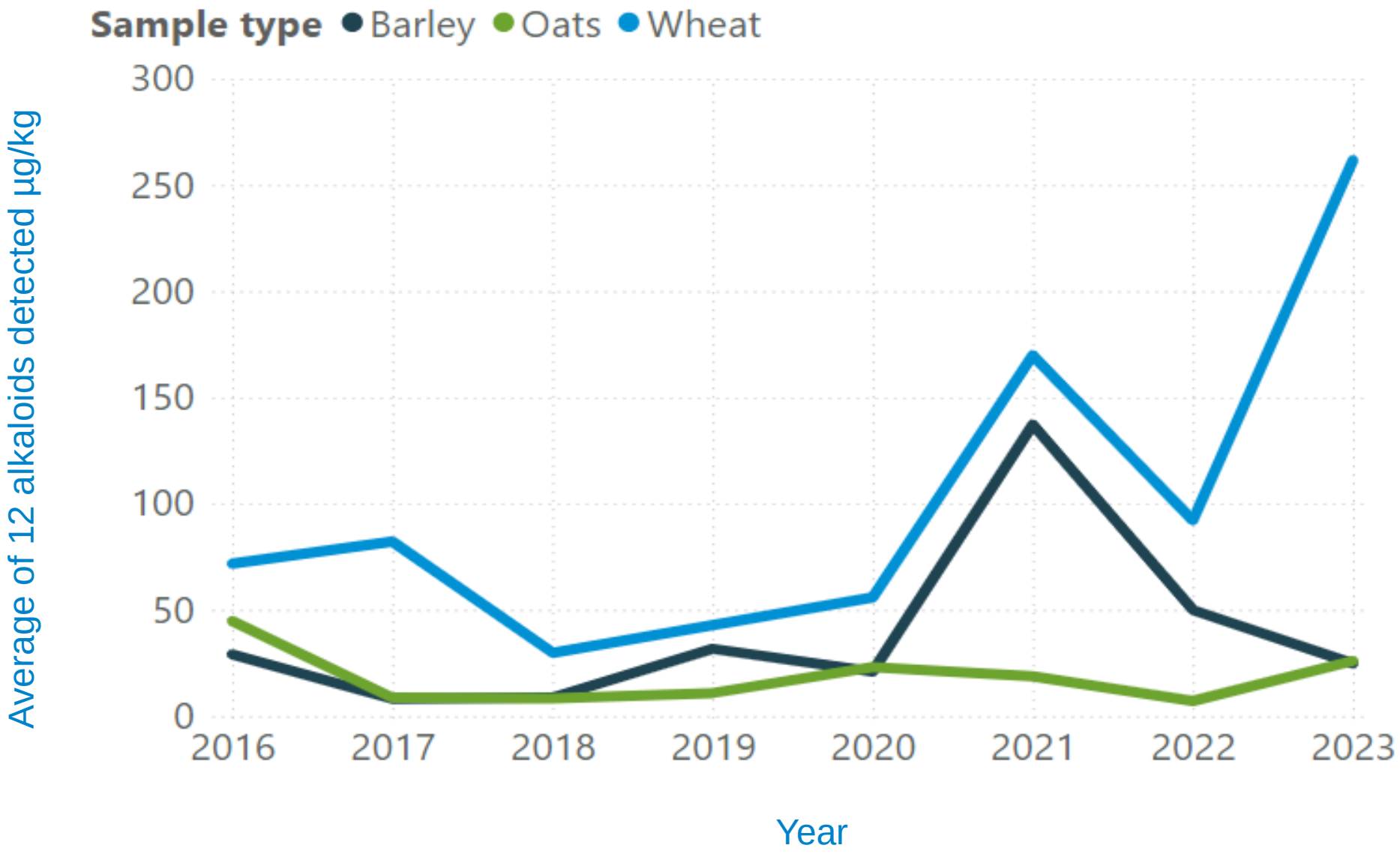
fera

aic agricultural industries confederation

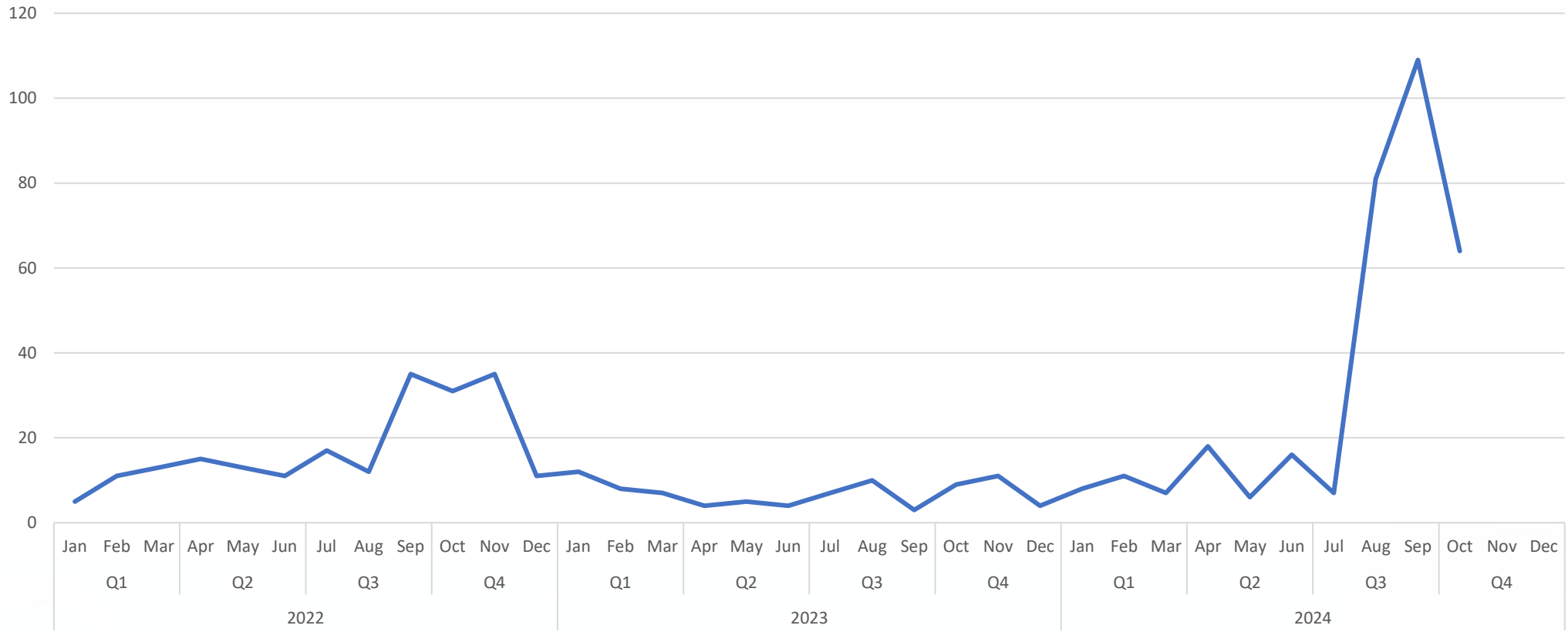
magb

BOBMA

The British Oat and Barley Millers' Association


Sample type
Barley
Oats
Wheat
300
250
200
150
100
50
0
2016
2017
2018
2019
2020
2021
2022
2023
Average of 12 alkaloids detected µg/kg
Year

Ergot Delivery Point Rejections submitted Over time



Ergot management on farm

- **Monitoring**
- Consider ploughing to bury ergots to at least 5 cm depth
- Harvest higher-risk field headlands and tramlines separately from the bulk of the crop (plants with more susceptible late and secondary tillers are most likely to occur in these areas)
- Consider planting a non-cereal crop
- Some seed treatments may have a small effect by preventing ergot germination (there are no fungicide sprays approved for use on cereals to control ergot infection)
- Sow later-flowering grass species in grass margins

Ergot at intake

- Grain cleaning an option but can be expensive
- Gravity and colour sorters
- Not guaranteed to remove alkaloids
- Issues with grassweed ergot
- Recently launched alkaloid testing kits but efficacy to yet to be established

UK ergot management guidelines update

- Industry collaboration
- Review of global ergot management guidance and research
- Update AHDB management guidance for UK arable farms – **April 2025**
- Produce an ergot ID chart and management – **September 2025**

What is most useful for you?

T2 + HT2

Fusarium langsethiae mycotoxins

CEREALS & OILSEEDS

T2 + HT2

- T-2 and HT-2 toxins damage body cells leading to reduced body weight, increased susceptibility to infection, and reproductive disorders.
- Produced by *Fusarium langsethiae*
- Unable to inoculate in the field
- Unable to detect by visual symptoms
- Main cereal affected is oats, then barley

Limits and Legislation

- EU legislation implemented 1st July 2024 applying to all oats and oat products exported into EU or sold in N. Ireland
- FSA and FSS currently conducting a risk assessment on HT2+T2 to consider action required

ANNEX TO DRAFT REGULATION

In the Annex to Regulation (EC) No 1881/2006, section 2, entry 2.7 is replaced by the following:

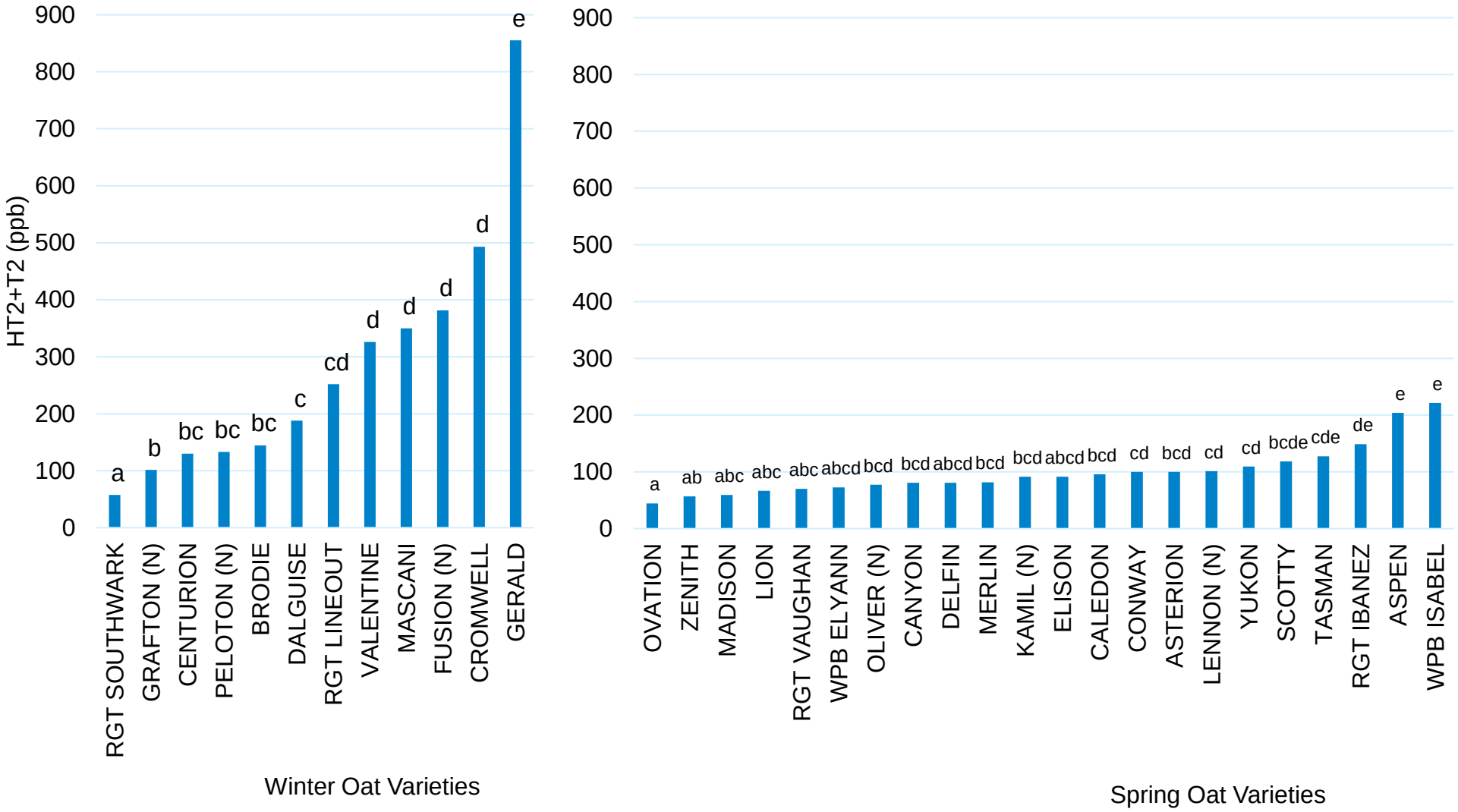
'Foodstuffs		Maximum level (µg/kg)
2.7	**T-2 and HT-2 Toxin**	Sum of T-2 and HT-2 Toxin
2.7.1	Unprocessed cereals	
	- Barley, maize and durum wheat with the exception of unprocessed maize intended to be processed by wet milling	100
	- Oats	1250
	- Other cereals	50
2.7.2	Cereals placed on the market for the final consumer	
	- oats, barley, maize and durum wheat	50
	- other cereals	20
2.7.3	Cereal milling products	
	- cereal bran, oat milling products (including oat flakes) and maize milling products	50
	- other cereal milling products	20
2.7.4	Breakfast cereals composed of at least 75 % of cereal bran, oat milling products, maize milling products and/or whole grains of oats, barley, maize and durum wheat	50
2.7.5	Bakery wares, pasta (dry), cereal snacks and breakfast cereals other than those referred to in 2.7.4	20
2.7.6	Processed cereal-based foods for infants and young children and baby foods	10
2.7.7	Dietary foods for special medical purposes intended for infants and young children	10'

Fusarium mycotoxins in UK RL Oat Varieties

Simon Edwards, Harper Adams University

- Assess the mycotoxin content of oat samples from AHDB RL trials (2021-2023 harvests)
- Provide oat varietal mycotoxin risk information for the oat industry
- Help to ensure that products for sale in the EU and NI conform to the legal limits to be introduced in July 2024
- Out of 404 oat samples analysed between 2021-2023, 15 samples (4%) exceeded new EU limit for HT2+T2

Winter and Spring oats 2021-2023

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Natural enemies and the role they play

Dr Lorna Cole

Agronomy Roadshows: 14th – 23rd January2025

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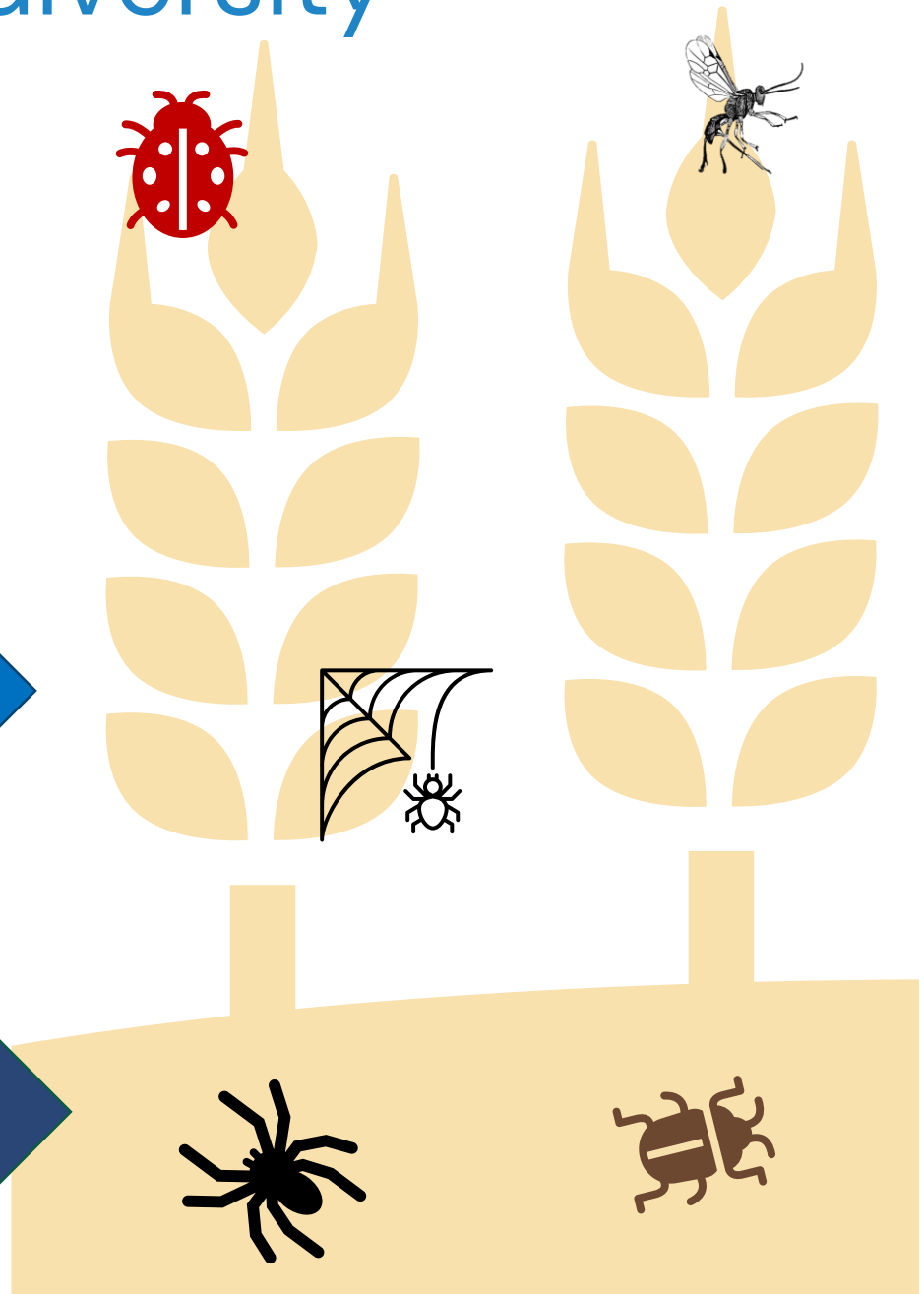
The value of diversity

Ladybirds, hoverfly larvae parasitic wasps

Web building spiders
Falling prey

Ground beetles wolf spiders.
Slugs, pupae, fallen



Nature enemies play different roles

More species

- Greater control of pests
- More resilient to change

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Friend or foe?

Friend: Ground beetle

The snail hunter

Narrow head and thorax designed to delve inside snail shells

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Friend or foe?

Foe: Cereal leaf beetle

- Usually larvae that cause most damage
- Usually not a major pest

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Friend or foe?

Friend: Parasitic wasp

- Lay eggs inside aphids
- Larvae hatch and consume aphids
- Mummified aphid left

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Friend or foe?

Foe: Wheat bulb fly

- Deadheart in Winter Wheat
- Not to be confused with hoverfly larvae
- Ferocious predators of aphids

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Friend or foe?

Friend: 7 spotted ladybird larvae

- Adult & larvae control aphids

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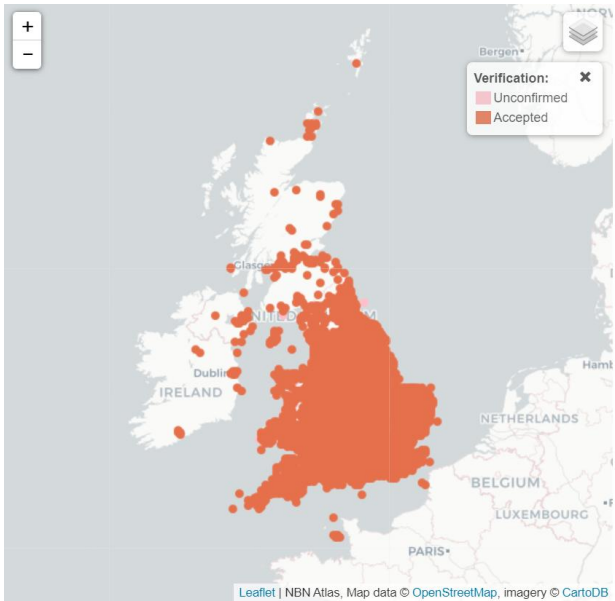
Friend or foe?

Foe: Harlequin ladybird

- Non-native – 2004
- Outcompetes native ladybirds



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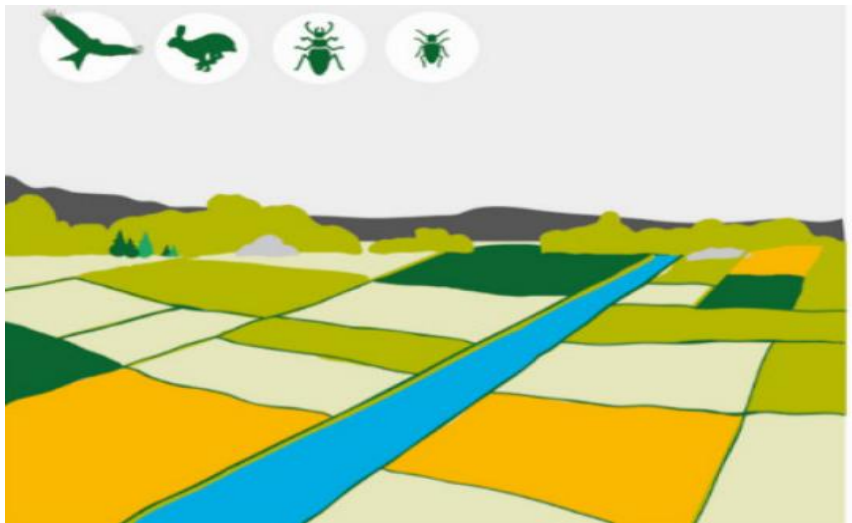
Plant health risk: Enhanced conditionality

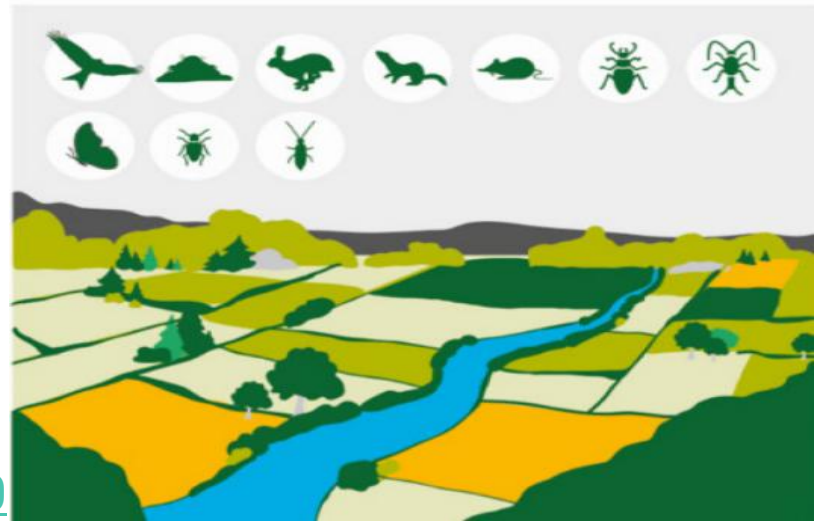
Policy shift

- Tier 2 Enhanced conditionality:
- % Single Farm Payment linked to uptake of key actions

Impact?

- Widespread increase in certain practices
- Landscape transformed
- Benefits but also risks: Cover crops allowing pests to persist





Adapted from ARC 2020

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Approach

Key questions:

- What are the risks to plant health?
- What actions can we take to mitigate these risks?

Winter Workshops
- Identify uptake
- Identify barriers

→

Literature review
- Identify risks
- Identify actions to reduce risks

→

Summer Workshops
- Fill gaps
- Share knowledge

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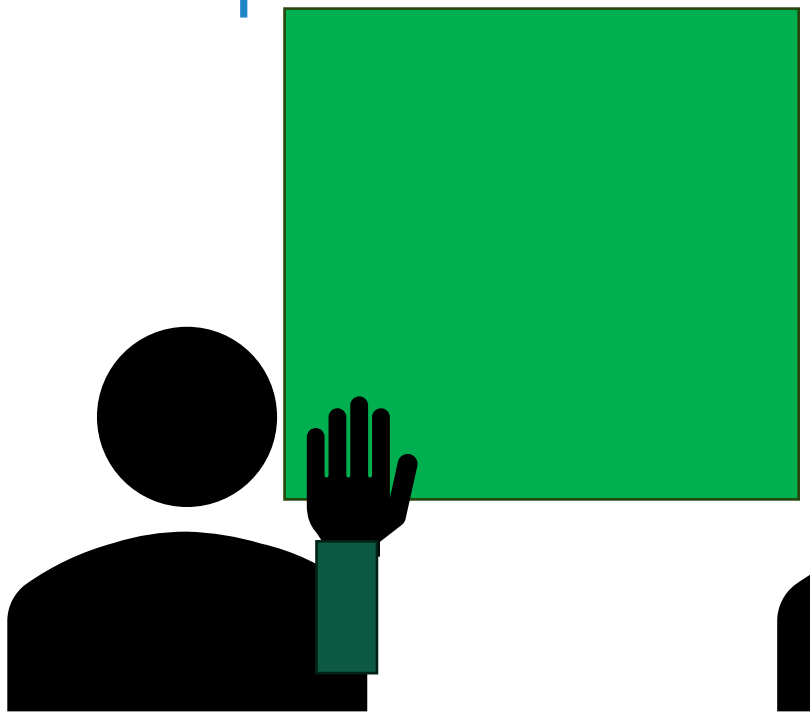
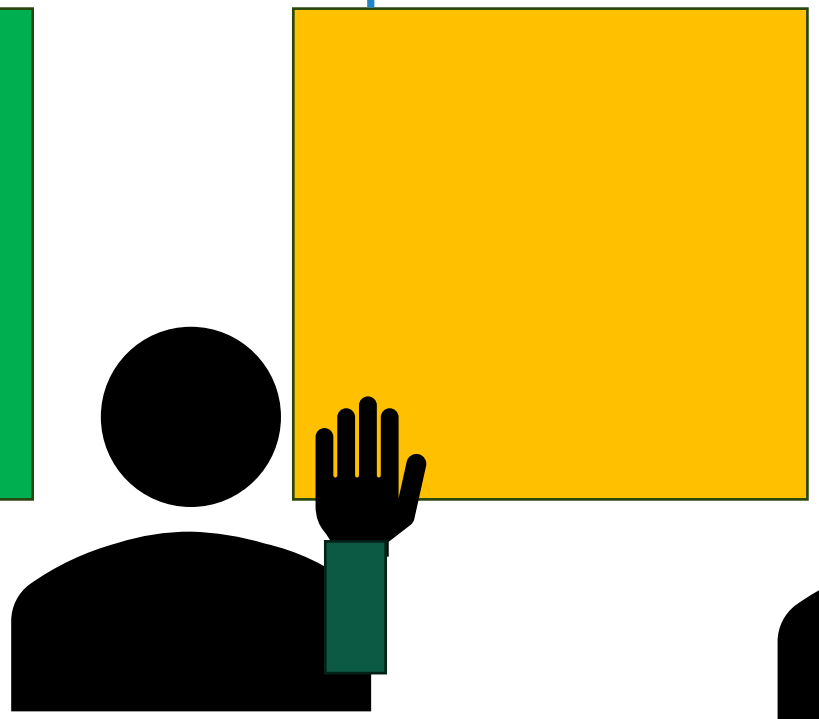
AHDB Roadshow 2024: Workshops

Diversify crop rotation and break crop rotation period

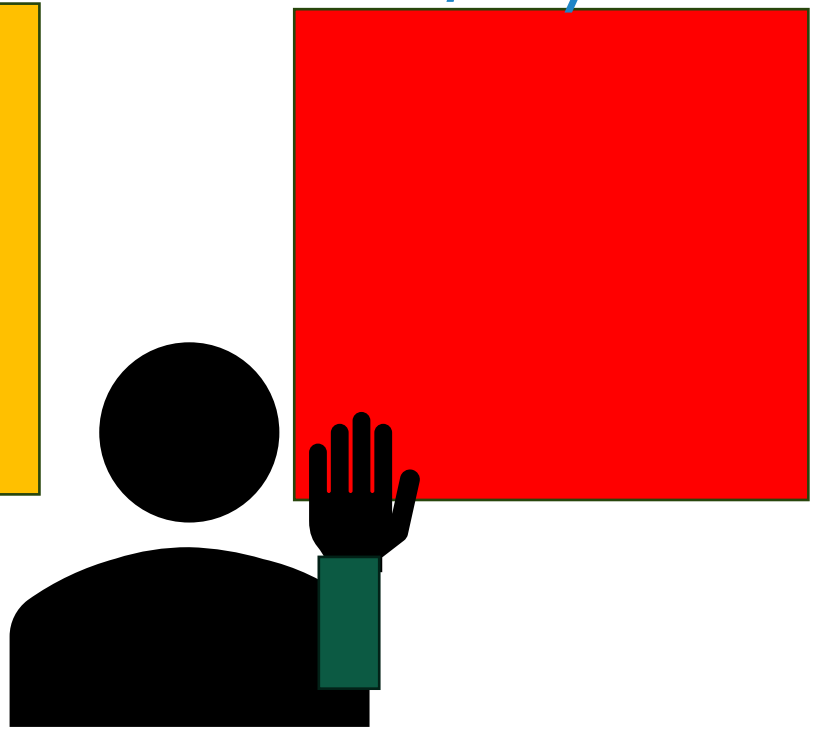
I am already doing this practice



I am willing to consider this option



This option is not for me/my farm



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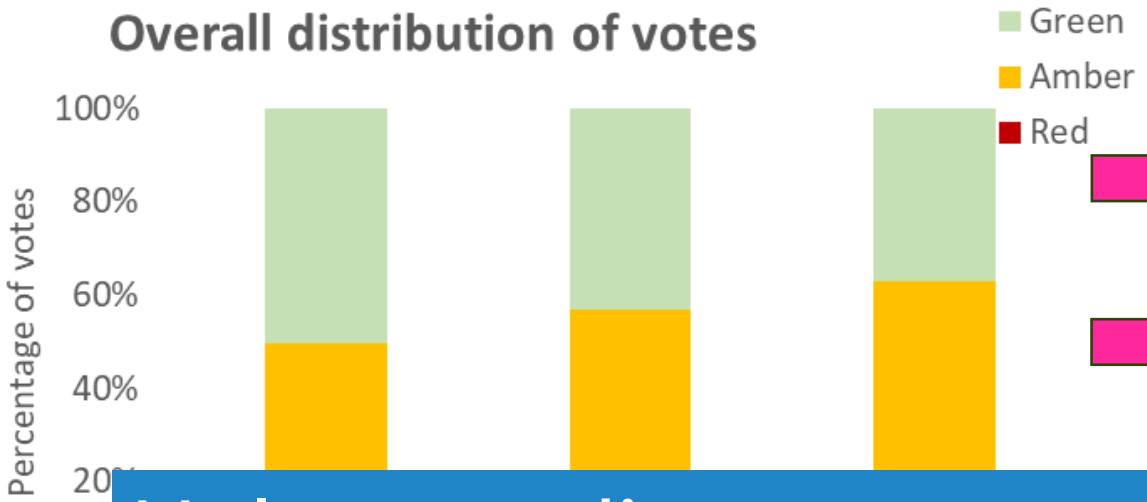
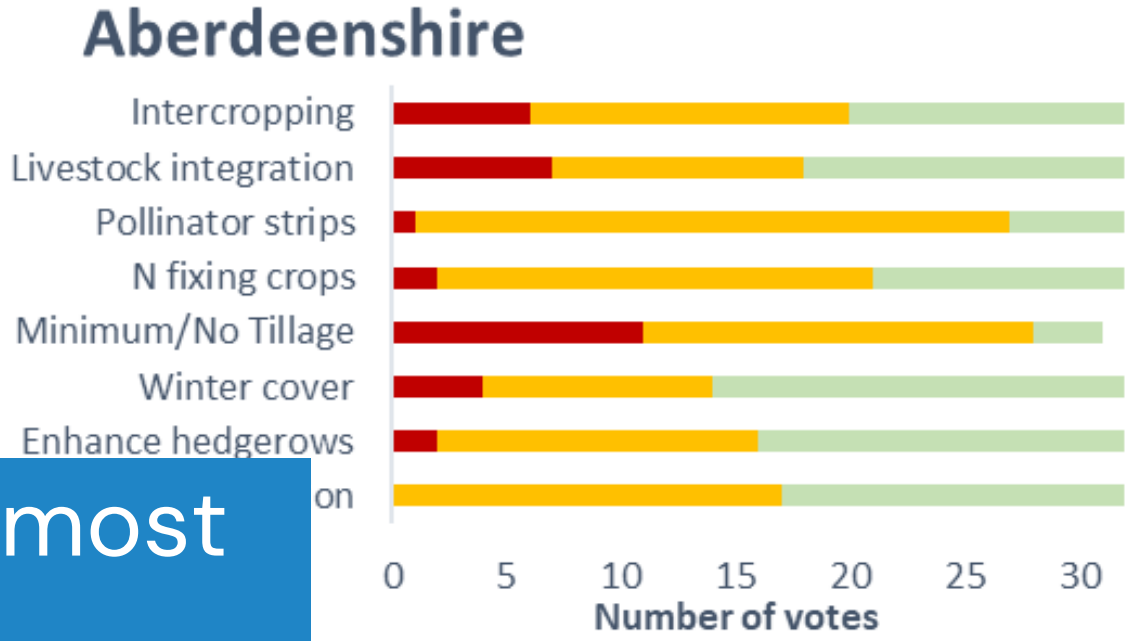
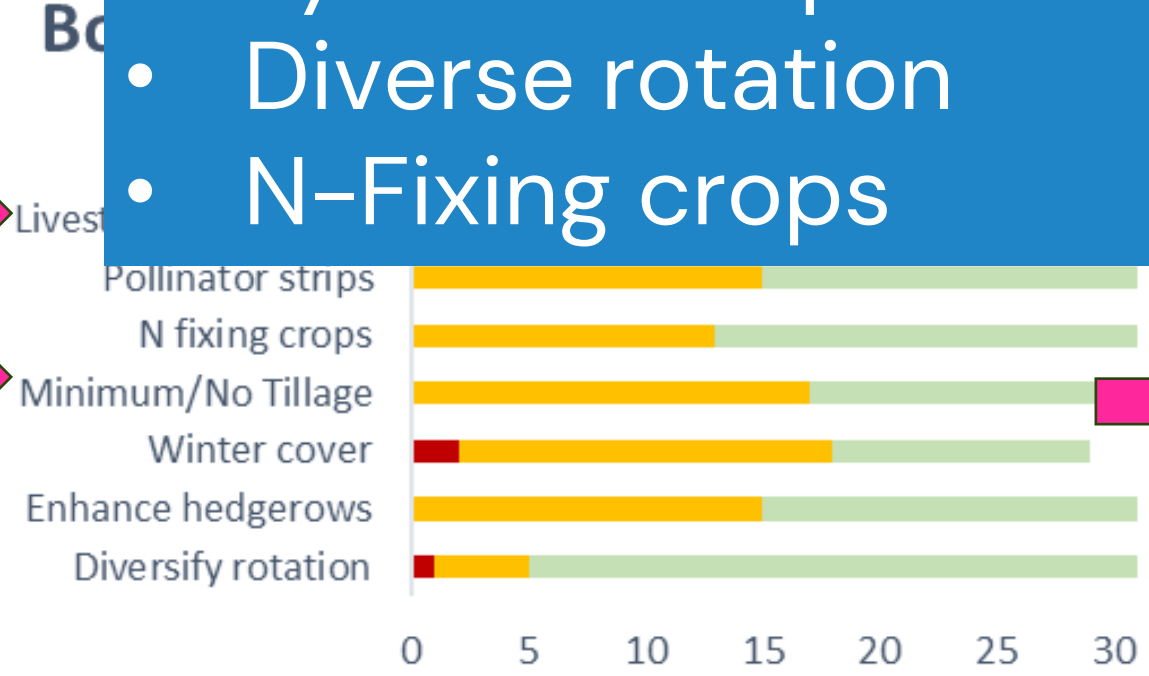
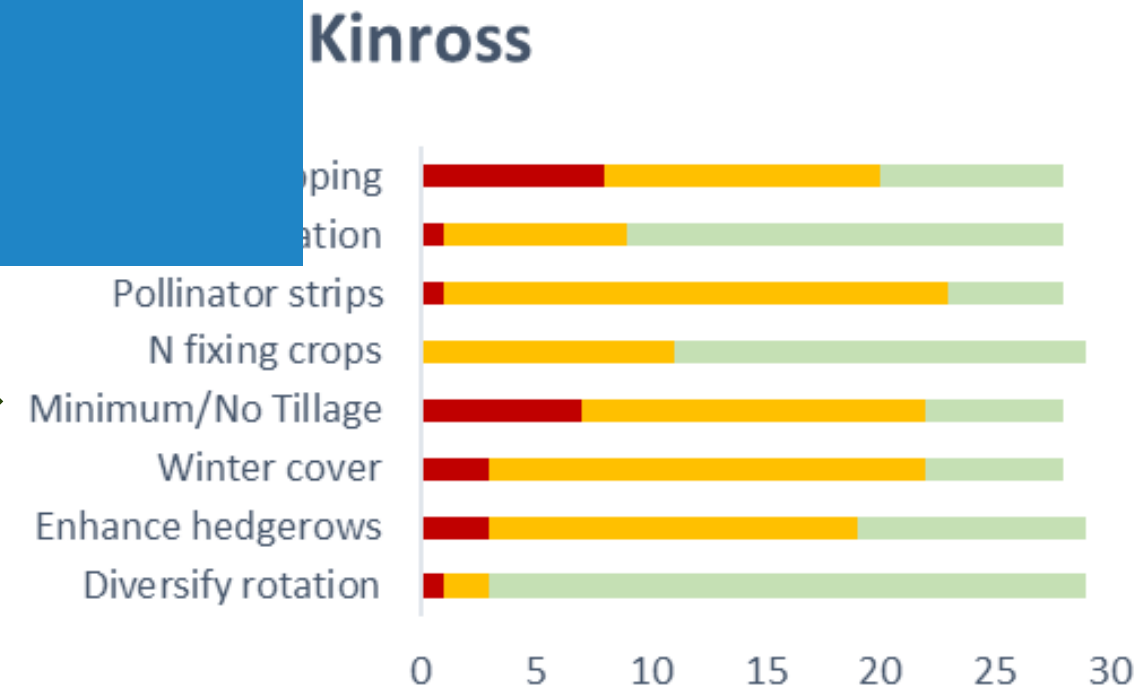




Helps predict measures most likely to be adopted

- Diverse rotation
- N-Fixing crops





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What does the research tell us?

	Diversify rotations	Winter cover	Minimum/no tillage	Nitrogen fixing crops	Arable/ ley rotations	Intercropping	Habitat for wildlife	Hedgerows
Pests	=	+/−	−		+/=	=/−	+/−	=/−
Natural enemies	+/=	+/=	+/=	+		+/−	+/=	+/−

	Data lacking
−	Negative impact
=/−	No impact to negative impacts
=	No impact
+/−	Positive to negative impacts
+/=	No impact to positive impacts
+	Positive

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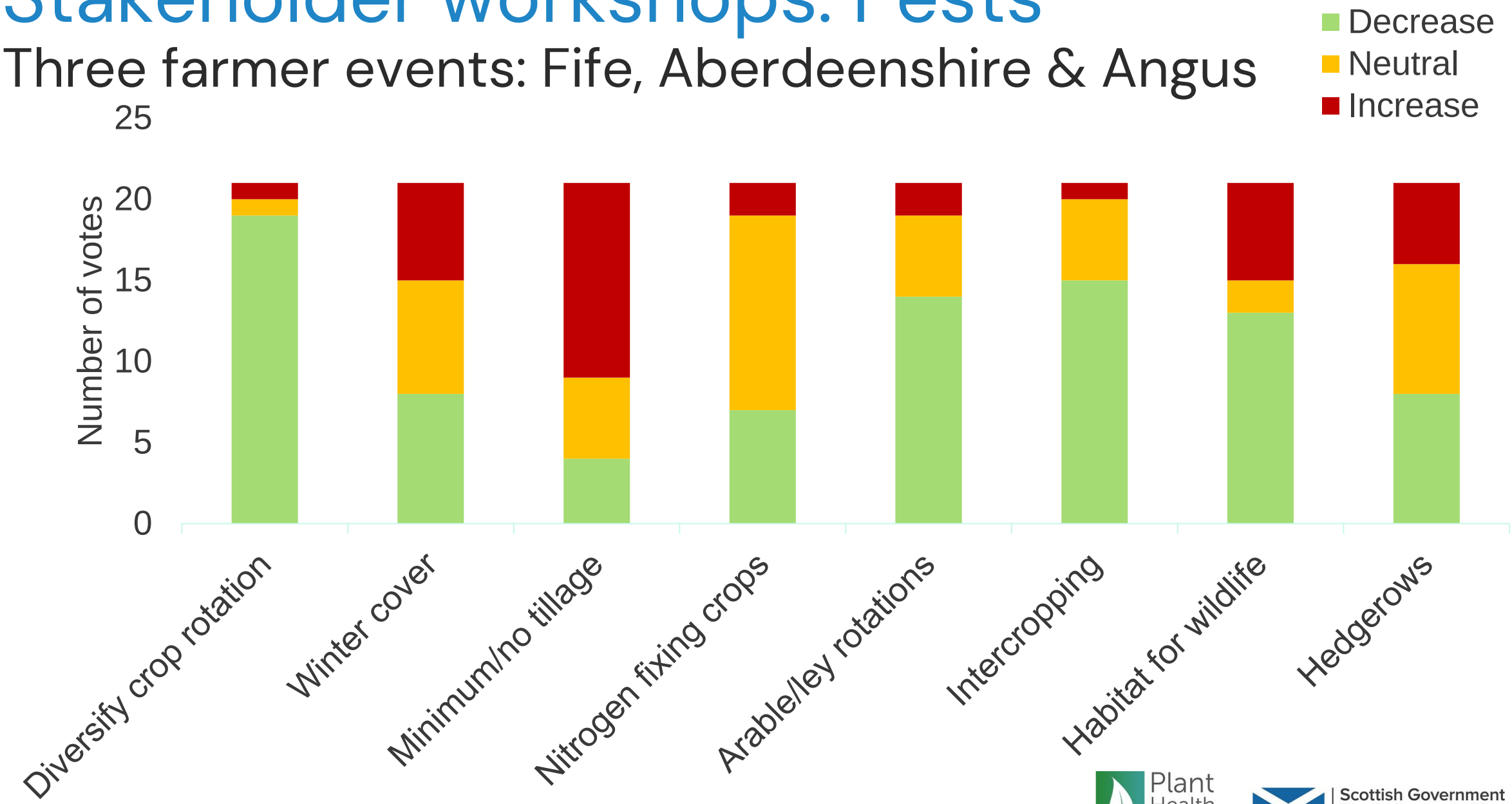
Stakeholder workshops: Pests

Three farmer events: Fife, Aberdeenshire & Angus



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Findings

Research evidence inconclusive. Impacts varied between studies, organisms, and crops.

Trade-offs: Some measures may positively affect one aspect while negatively impacting another

Overall no major risks perceived. Complex – vigilance needed.

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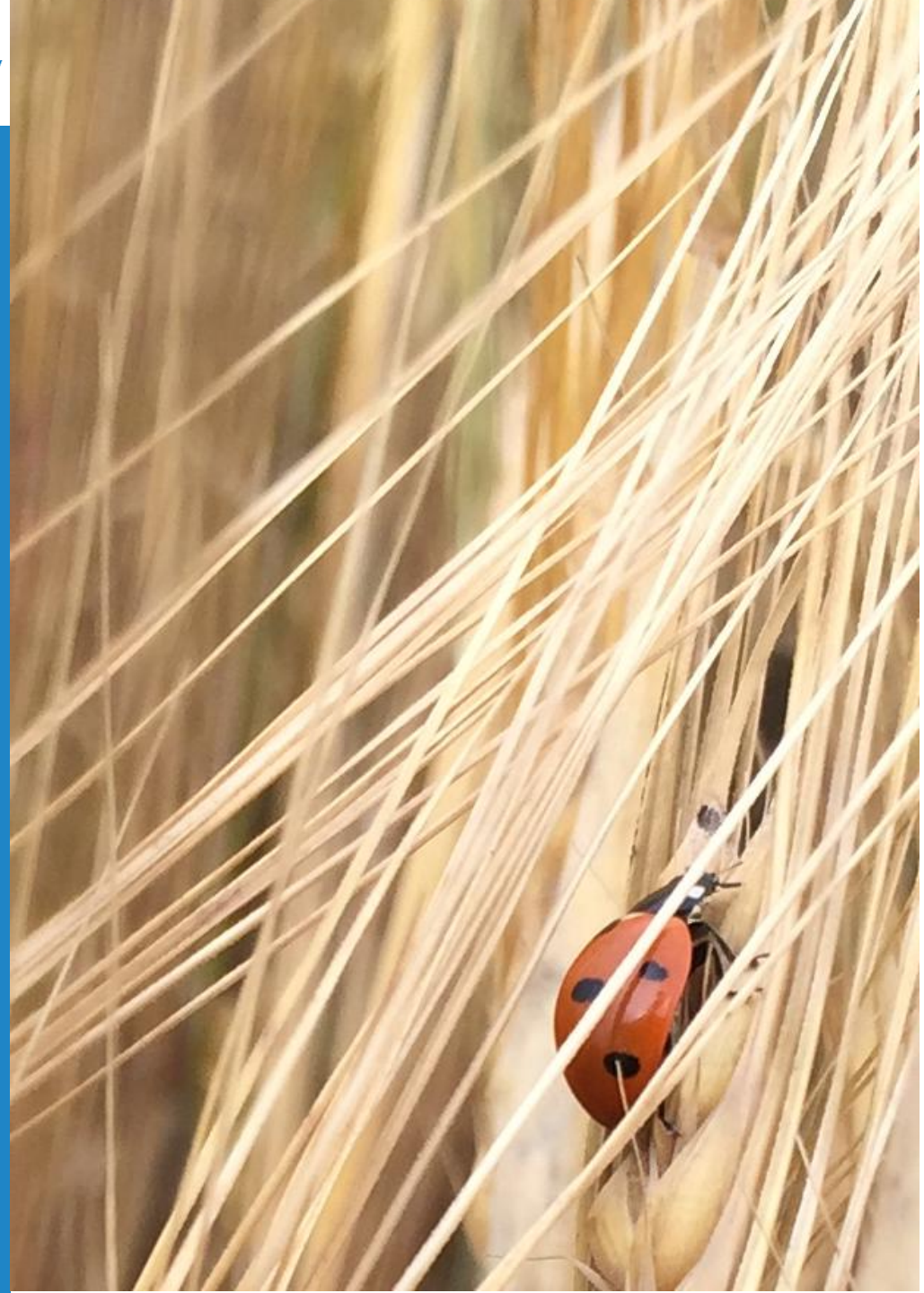

Balancing risks & benefits

Increase in some pests

Land taken out of production (e.g. field margins)

Improved soil health

Increased crop health

Increase natural enemies & pollination

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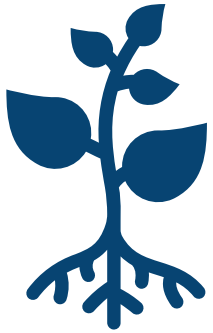
Five key actions

Upskill new crops

Pests & diseases

Actions to mitigate risk



Cover crops & pests

Stem & bulb nematodes risk

Certified seed

Monitor

Flexibility in decisions

Cultivate to control pests and weeds

Keep vigilant

Early warning

Surveillance

Farm & country

Research & Knowledge

Field trials

Farmer led workshops

Local issues – local solutions

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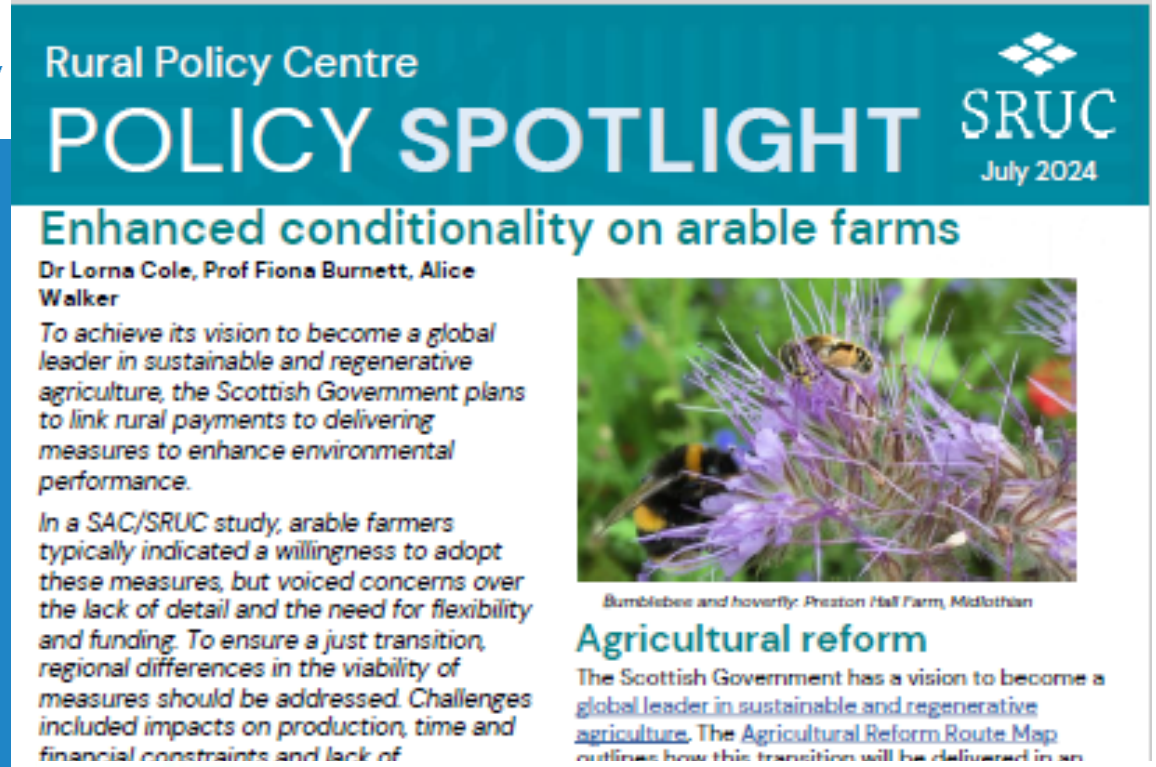

Rural Policy Centre

POLICY SPOTLIGHT

SRUC

July 2024

Enhanced conditionality on arable farms

Dr Lorna Cole, Prof Fiona Burnett, Alice Walker

To achieve its vision to become a global leader in sustainable and regenerative agriculture, the Scottish Government plans to link rural payments to delivering measures to enhance environmental performance.

In a SAC/SRUC study, arable farmers typically indicated a willingness to adopt these measures, but voiced concerns over the lack of detail and the need for flexibility and funding. To ensure a just transition, regional differences in the viability of measures should be addressed. Challenges included impacts on production, time and financial constraints and lack of

Bumblebee and hoverfly: Preston Hall Farm, Midlothian

Agricultural reform

The Scottish Government has a vision to become a global leader in sustainable and regenerative agriculture. The Agricultural Reform Route Map outlines how this transition will be delivered in an

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The impact of agricultural policy reforms on plant health risks in Scotland: guidance on maximizing plant health benefits.

Getting information out

- Andrew Moir: Agriculture Reform Implementation Oversight Board
- Policy briefings x 2
- Disseminate best practice
- Presentations and workshops
- Practical guides

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Thank you – Questions!

Enhanced conditionality: A route to sustainable farming

Lorna.Cole@sac.co.uk

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Break for Lunch, Tea & Coffee

- We'll pick back up again at 13:30 looking at future practices.

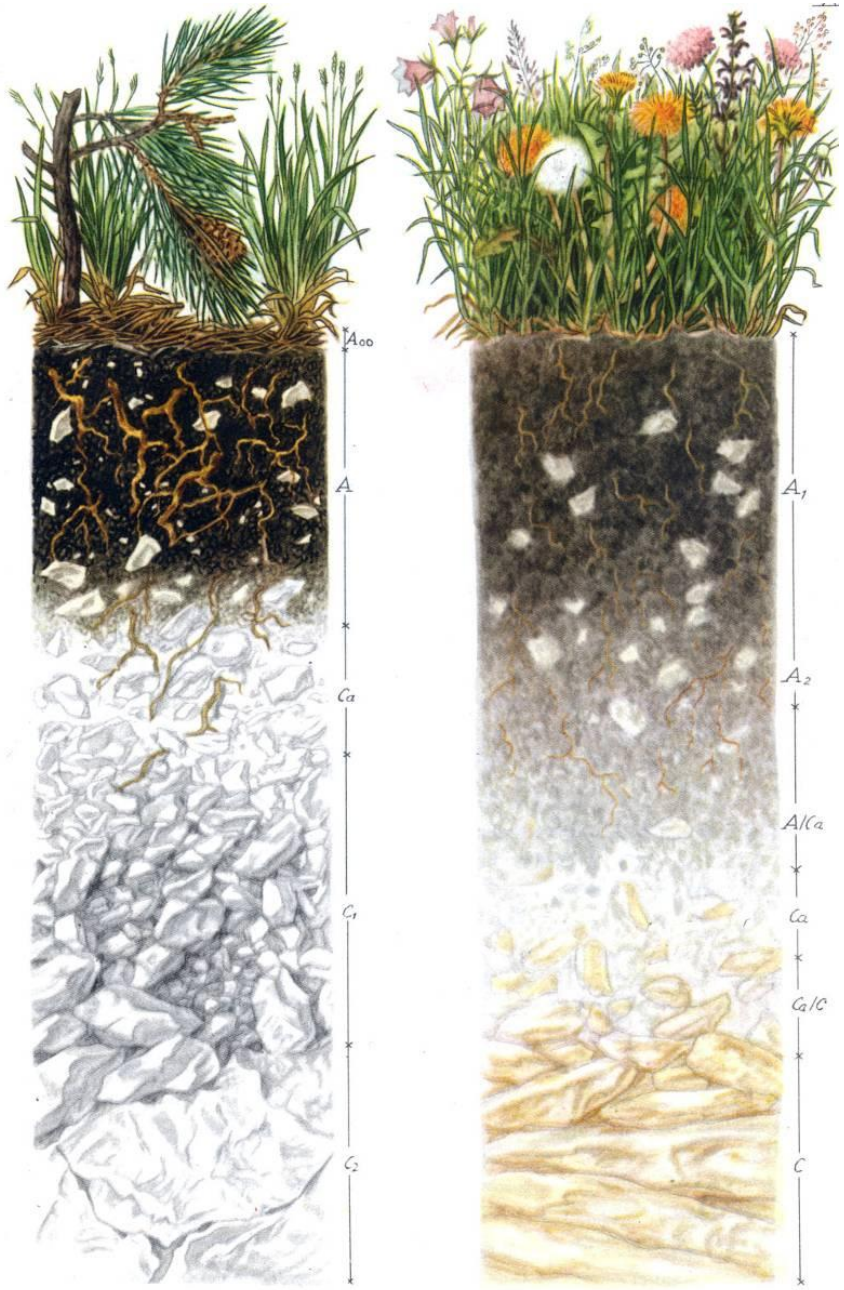
Disentangling understanding of soil C and soil health for management

Elizabeth Stockdale, David Clarke - NIAB

All land is unique

May have similar constraints

But not the same field by field or even within a field



[1]Picture from Kubiena (1953); Soils of Europe, Murby and Co, London

Soil type sets inherent limits to what can be done

KNOW, MEASURE

SOIL CHARACTER

Management modifies properties

SOIL HEALTH

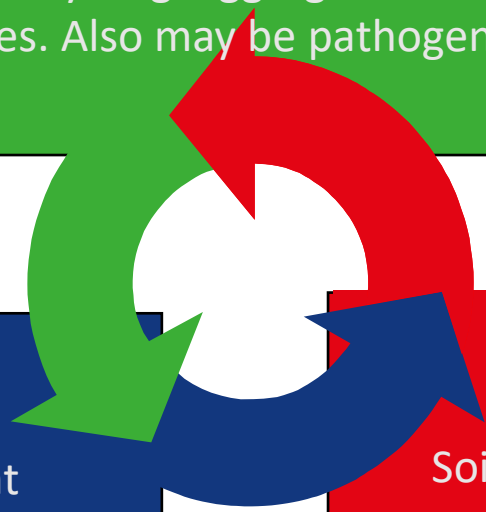
TAKE INFORMED ACTION

Why does soil function matter for farmers?

Good soil function = soil health

Biological

Soil organisms live on soil organic matter or other soil organisms and are the driver of a number of vital processes including decomposition, nutrient cycling aggregation of soil particles. Also may be pathogenic .



Chemical

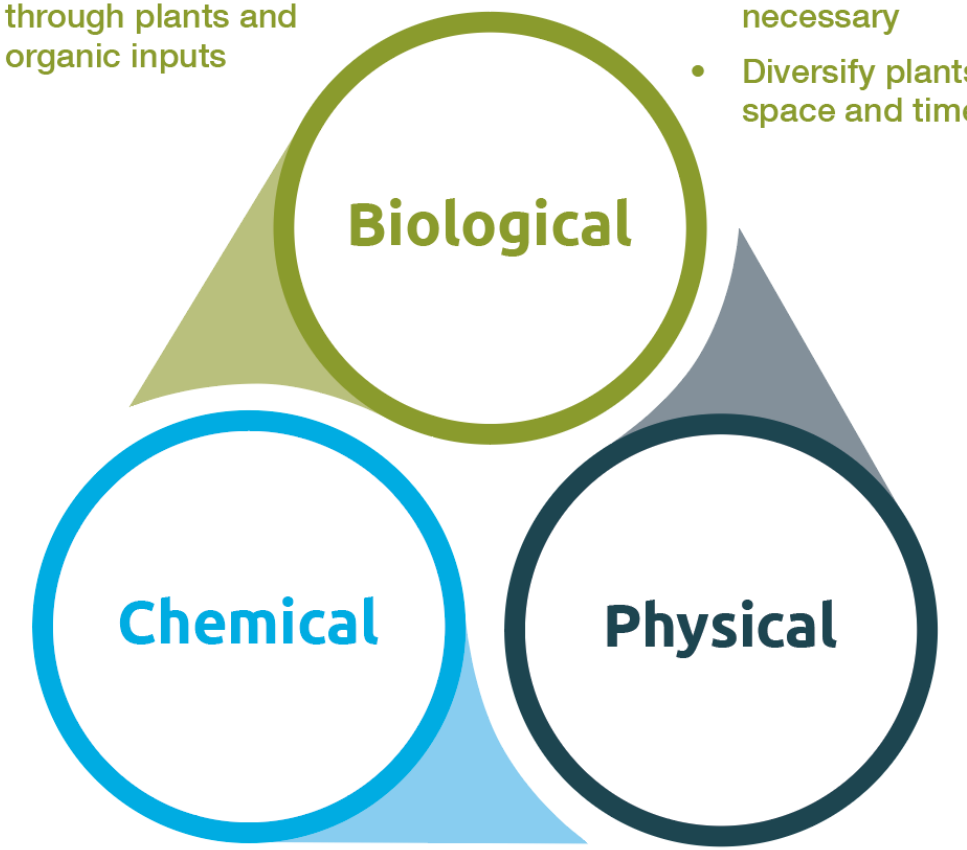
Availability of elements for plant uptake – nutrients and contaminants. Availability is affected by soil pH and reactions of the elements with soil particles and organic matter. Soil sampling and testing give an inventory

Physical

Soil structure. Structure is the amount and arrangement of aggregates and pores in soil influencing water movement through soil, root penetration and waterlogging.

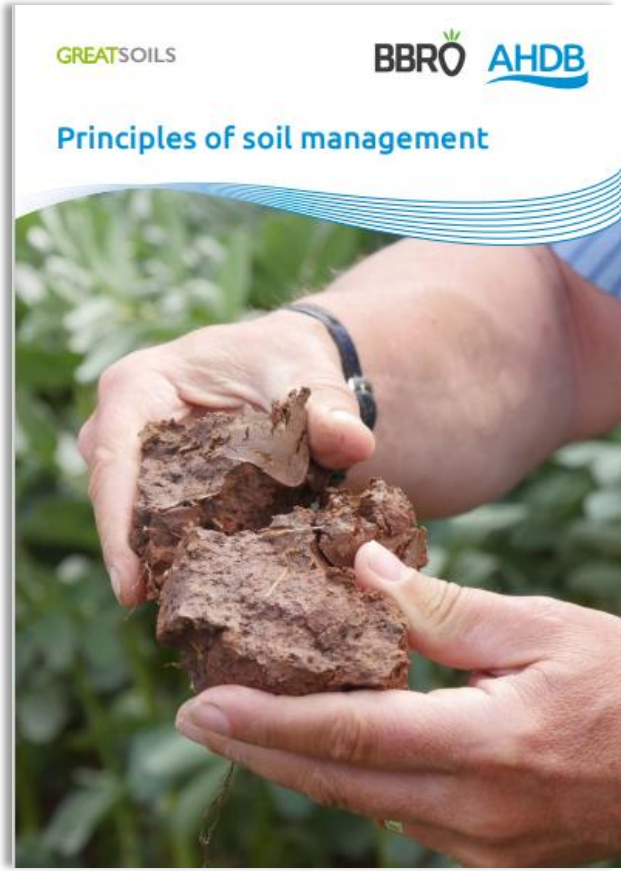
Principles of soil management for soil health

- Feed the soil regularly, through plants and organic inputs
- Move soil only when necessary
- Diversify plants in space and time



- Maintain optimum pH
- Apply nutrients (right amounts, in the right place, at the right time)
- Know soil textures and minerals (buffer capacity)

- Know soil textures and understand limits to workability and trafficability
- Optimise water balance, through drainage (if necessary)
- Minimise compaction and improve soil structure



GREATSOILS

GREATSOILS

February 2018

Final Report No. 91140002-02

Soil Biology and Soil Health Partnership Project 2:
Selecting methods to measure soil health and soil biology and the development of a soil health scorecard

Bryan Griffiths[1], Paul Hargreaves[2], Anne Bhogal[3] and Elizabeth Stockdale[4]

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Vale, Mansfield, Notts, NG20 9PF, UK
oad, Cambridge, CB3 OLE, UK

of a 12 month project (Project 2) within the Soil
91140002) which started in January 2017. The work
n AHDB and BBRO.

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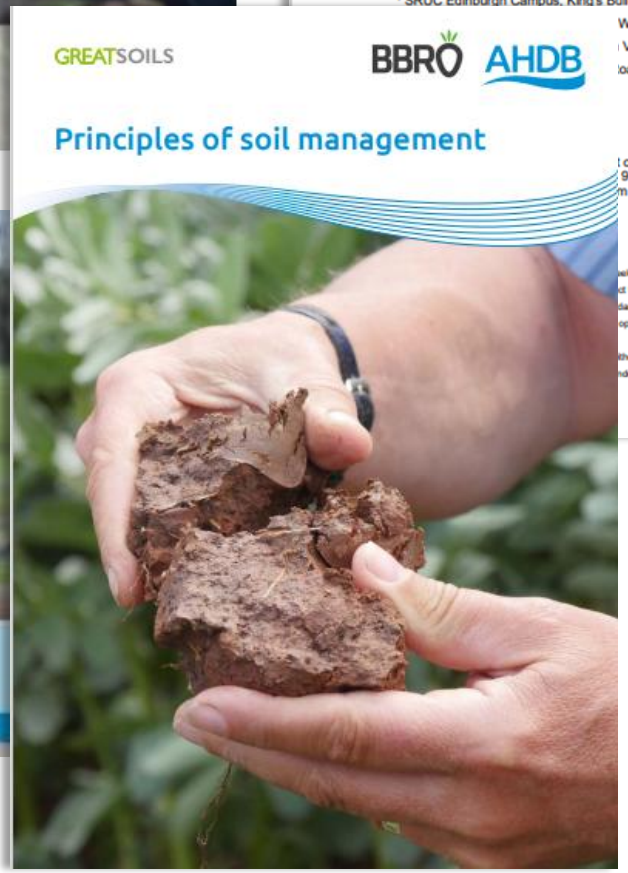
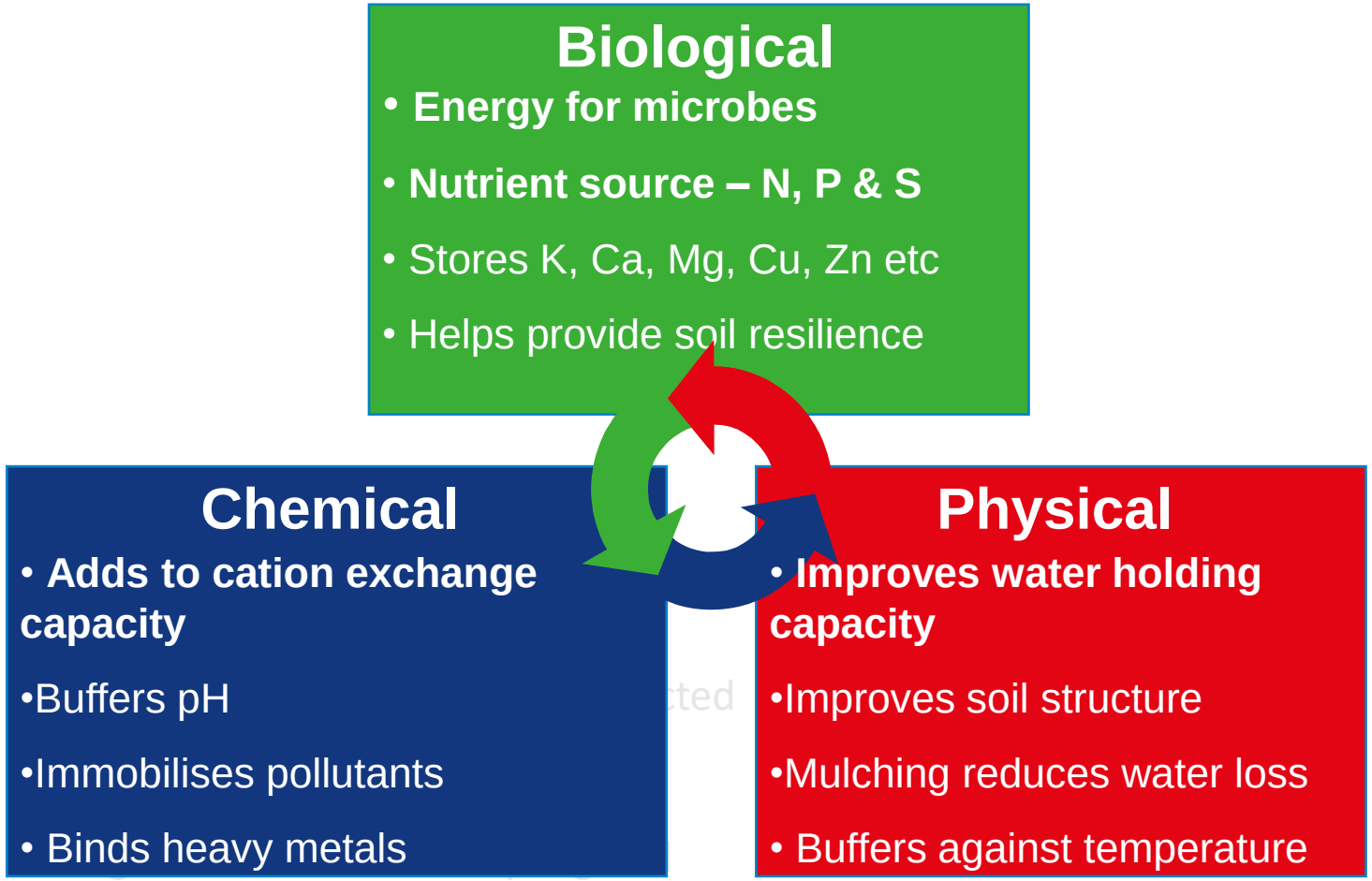


Why does soil carbon matter for farmers?

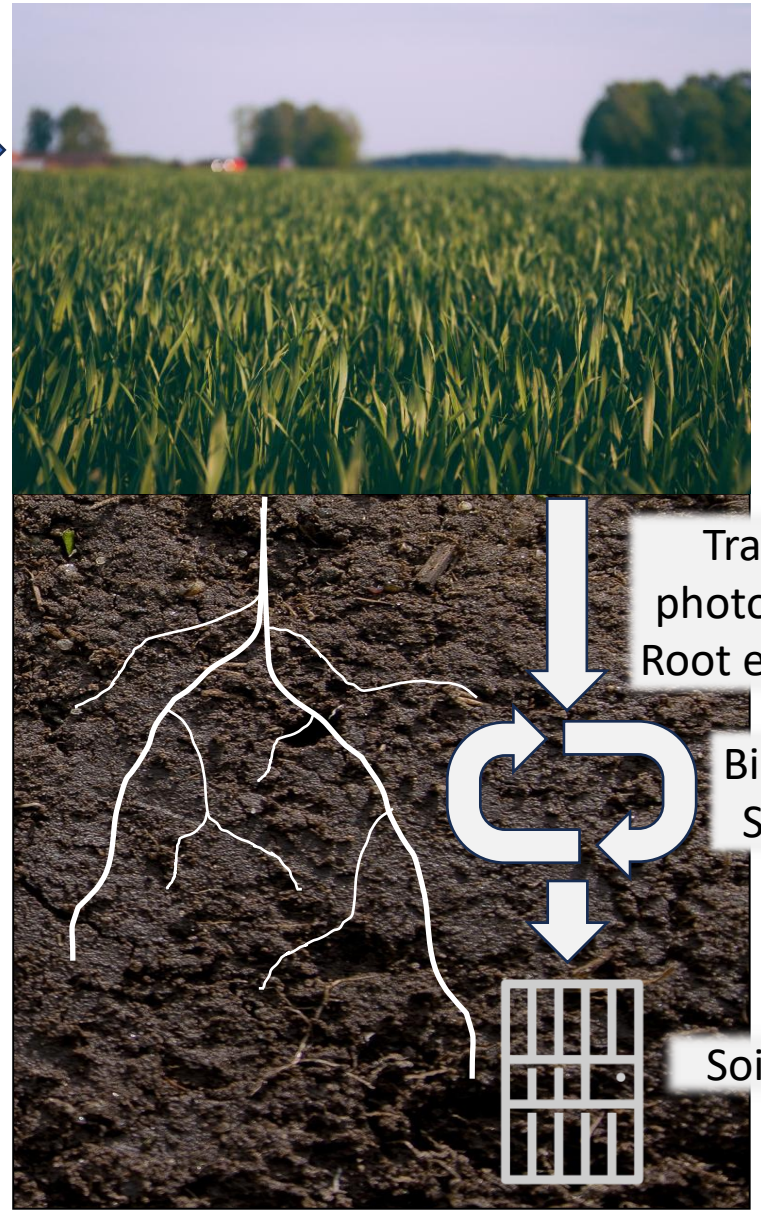


testing give an inventory

Scientists talk about SOC not SOM

- SOM measured by combustion – loss on ignition
- On average SOM is 58% C
- SOC measured by dry combustion, C captured and measured as CO_2.
- Combustion measures total C including inorganic carbonate, which must be separately analysed and subtracted from the total.
- Both methods in common use – LoI quicker and hence cheaper.
- Changing labs and/or methods can have a big effect on the result.

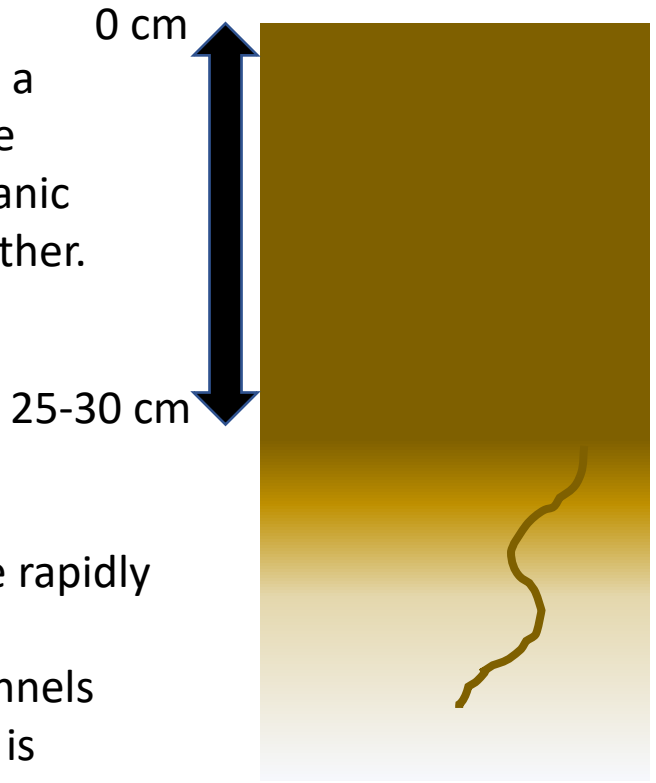
Scientists talk about C balance and mean net GHG emissions



Soil C storage

C stock = Concentration (%) x Weight of soil per hectare
(t ha^{-1}) (usually 0-30 cm)

Topsoil
In the UK, there is usually a distinct layer of soil where cultivation has mixed organic matter and minerals together.



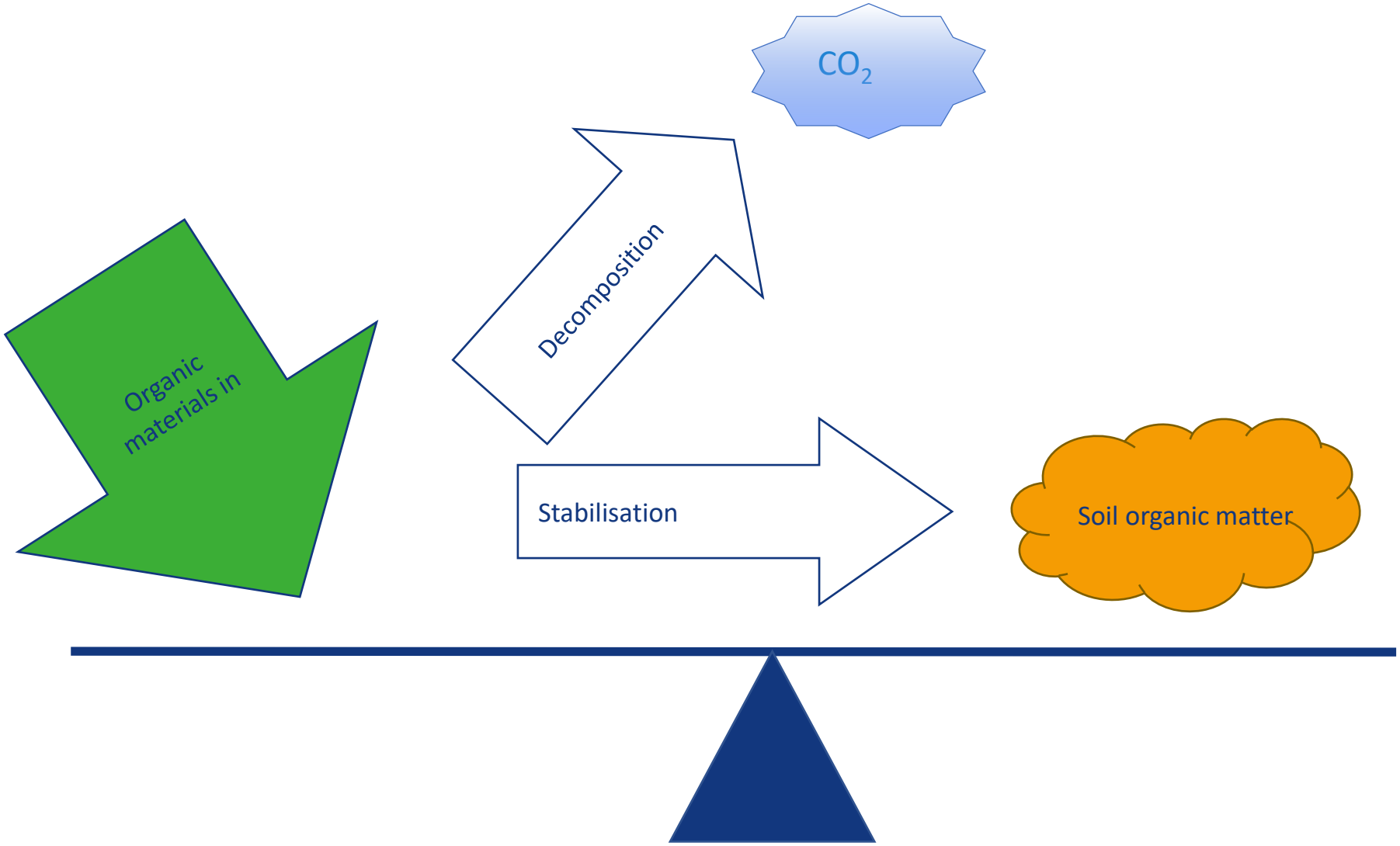
Subsoil
In the UK, organic matter contents usually decrease rapidly deeper into the soil.
Root and earthworm channels can be seen if the subsoil is paler.

Soils vary in both the amount of organic matter they contain, their stoniness and their bulk density.

More stones means less soil; the C stock must be corrected for stone content.

Soil bulk density commonly varies between 1 and 1.8 g cm^{-3}. This depends on soil texture and compaction.

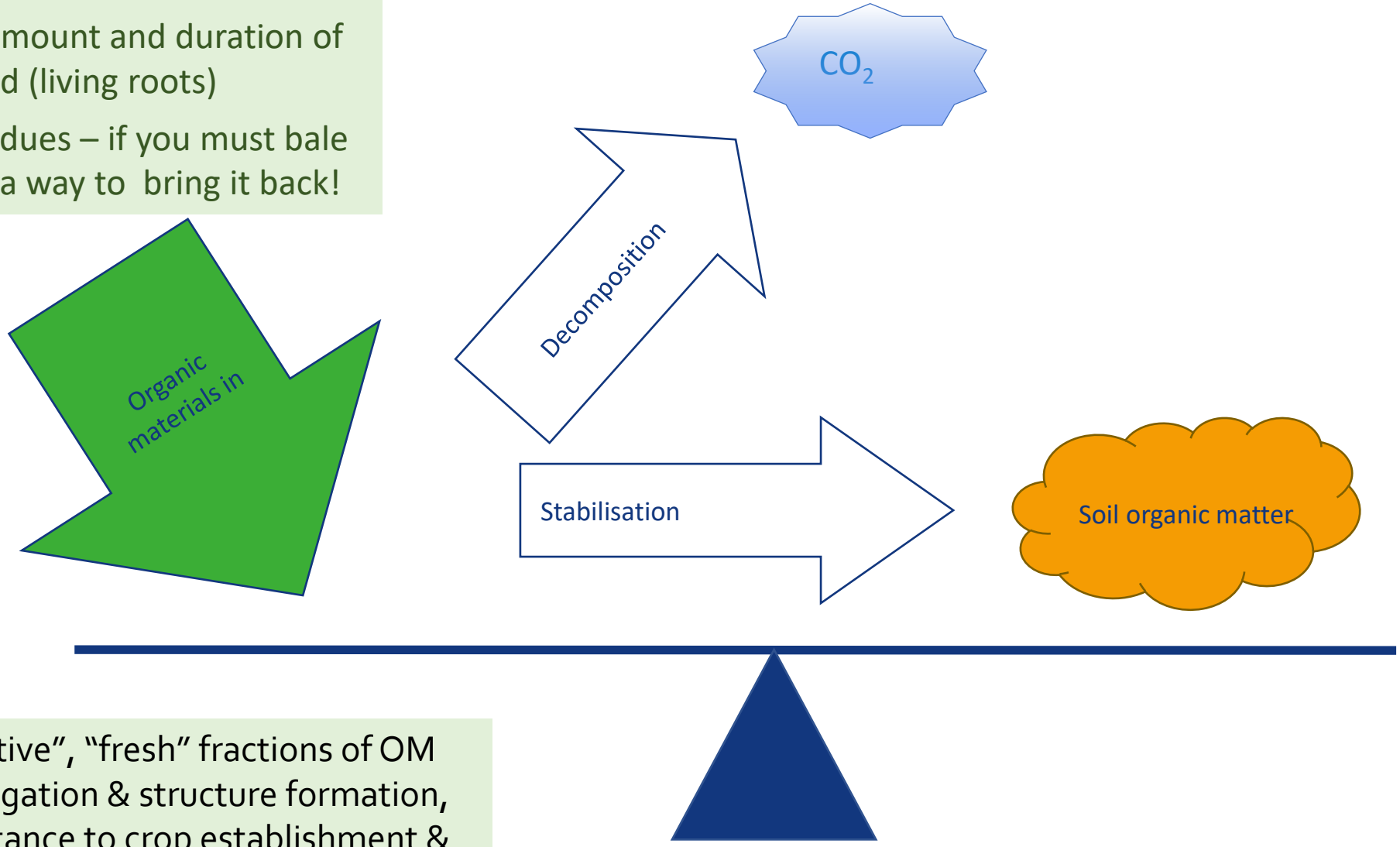
For C trading … it's not about soil C storage, but the amount C storage has / can increase


CO_2
Decomposition
Organic materials in
Stabilisation
Soil organic matter

Maximise photosynthesis

Minimise amount and duration of bare ground (living roots)

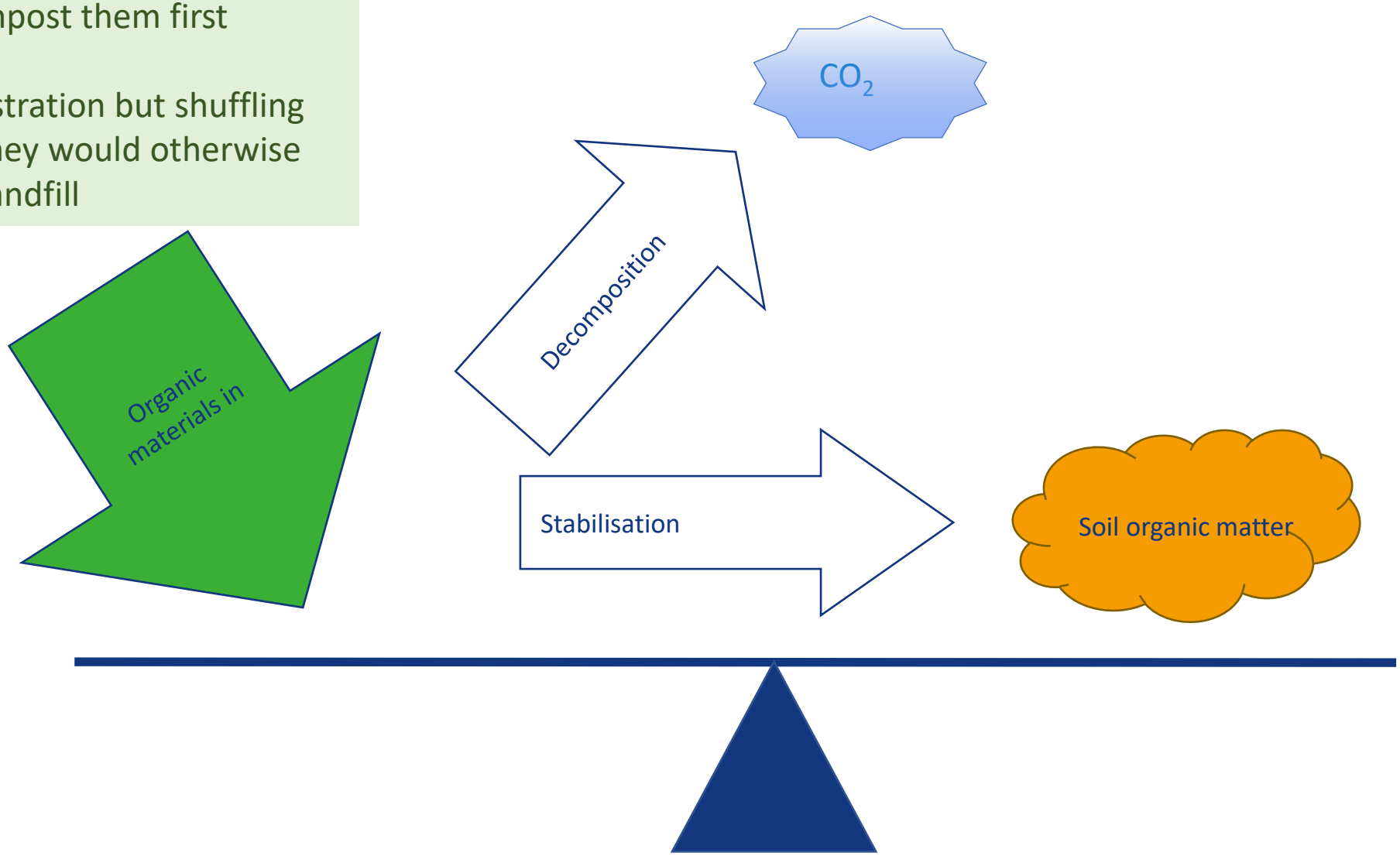
Return residues – if you must bale straw, find a way to bring it back!

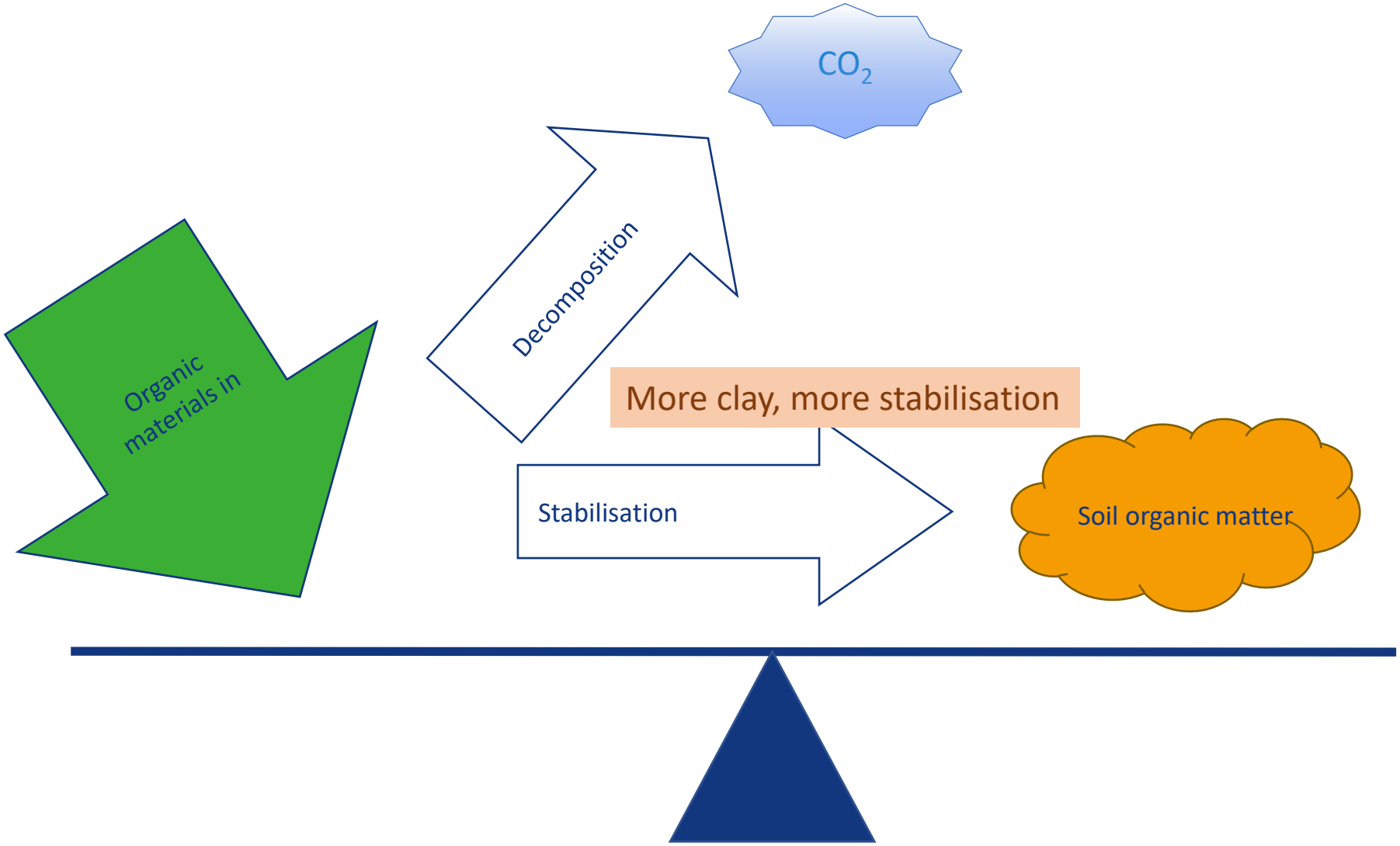


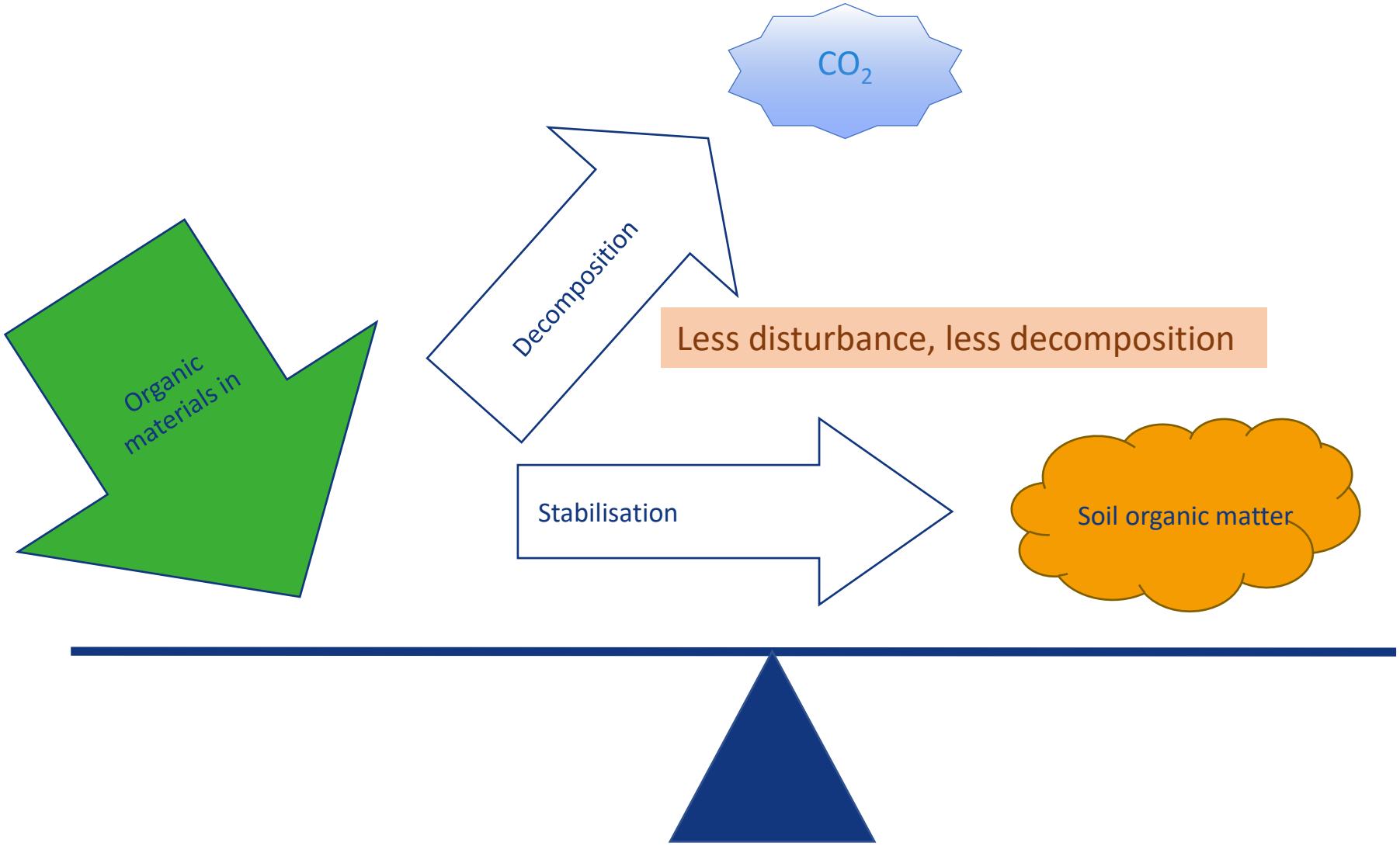
These "active", "fresh" fractions of OM drive aggregation & structure formation, vital importance to crop establishment & growth. Benefit > OM increase

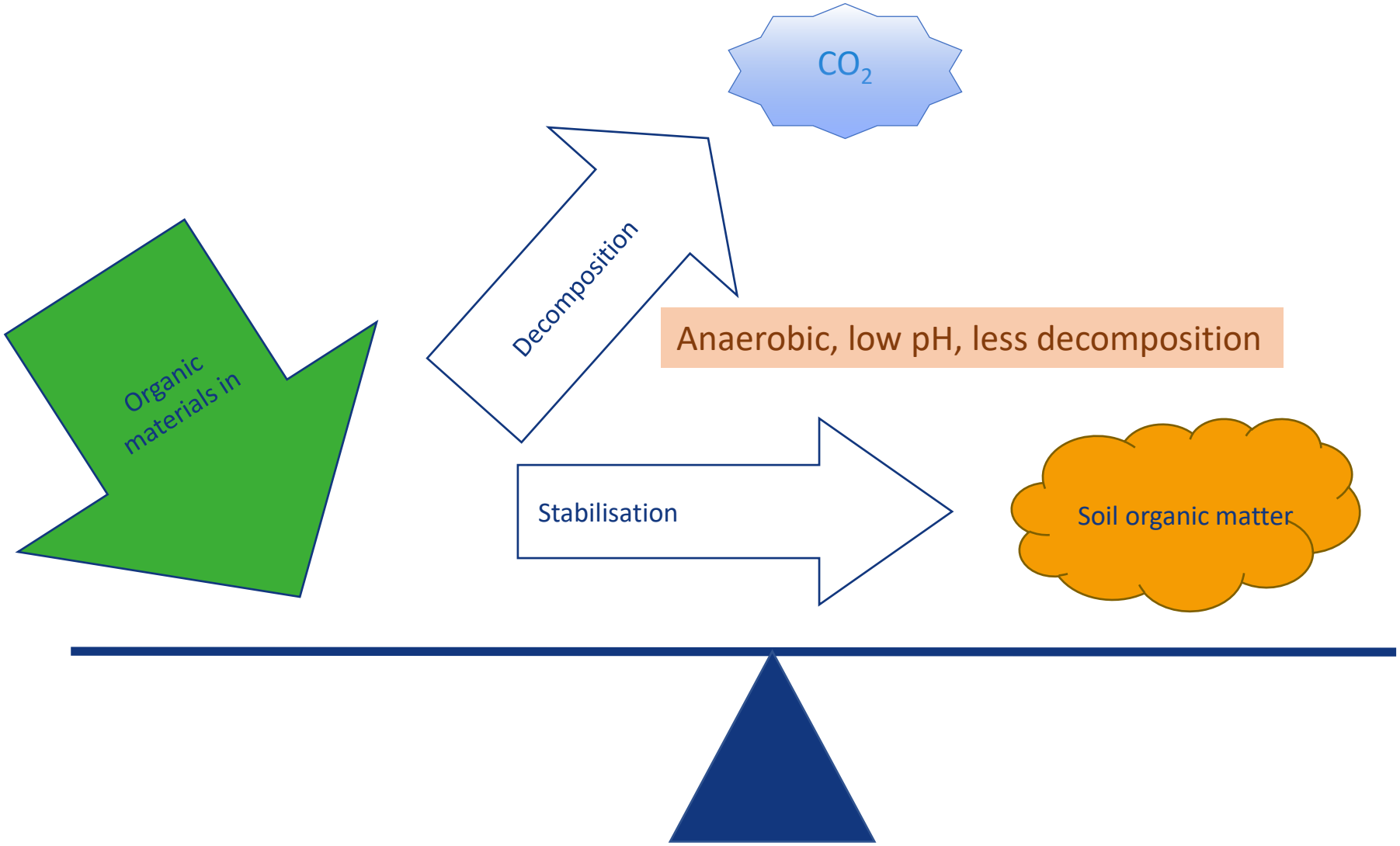
Find local waste OM sources
Ideally compost them first

Not sequestration but shuffling … unless they would otherwise be put in landfill



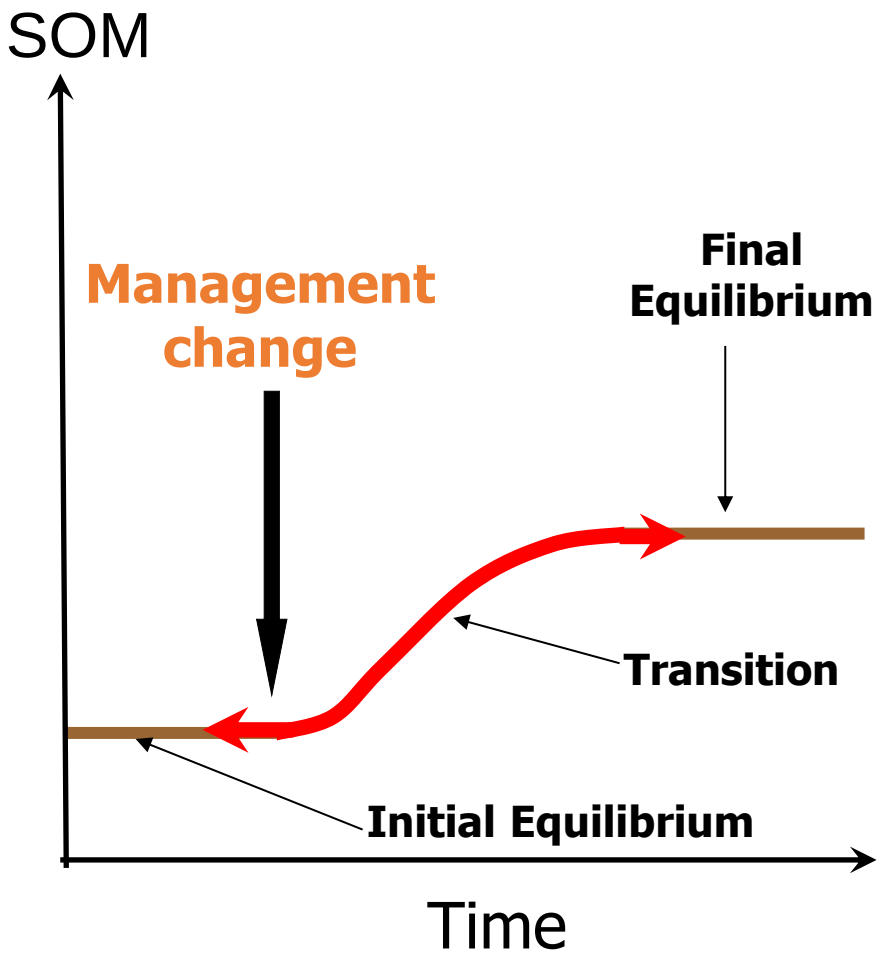

CO_2
Decomposition
Organic materials in
More clay, more stabilisation
Stabilisation
Soil organic matter


CO_2
Decomposition
Organic materials in
Less disturbance, less decomposition
Stabilisation
Soil organic matter


CO_2
Decomposition
Organic materials in
Anaerobic, low pH, less decomposition
Stabilisation
Soil organic matter

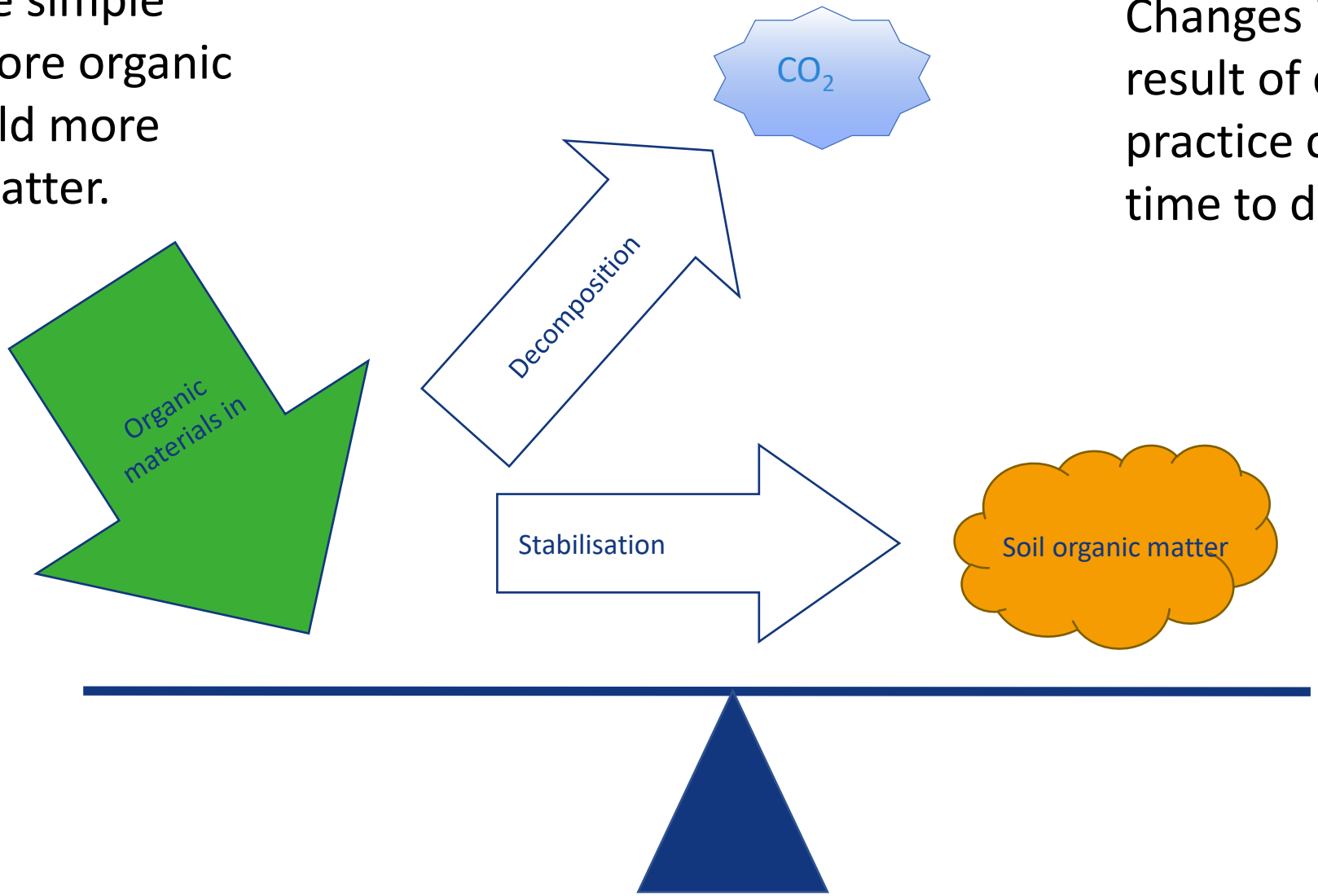
But beware Soil C / SOM is fickle

- **Slow**
- **Finite** – SOM moves towards new equilibrium value.
- **Reversible** – depends on continuing the new land management practice



In general, the simple rule is: add more organic materials, build more soil organic matter.

Changes in SOM as a result of changes in practice can take a long time to detect.



Important to consider SOC in context of wider soil health

Example of the framework for SOM – see SBSH Partnership reports for further tables and more detail
England – Cropping - mid rainfall = NE England, Midlands, S England

	Light	Medium	Heavy	
	≤1.0	≤1.9	≤2.7	INVESTIGATE Very low for the climate / soil type; may be associated with intensive cropping rotations with few organic matter inputs
	1.1-3.0	2.0-4.0	2.8-5.2	REVIEW Lower than average for the climate/soil type; may be associated with intensive cropping rotations with few organic matter inputs.
Typical	3.1-4.5	4.1-6.0	5.3-7.6	CONTINUE ROTATIONAL MONITORING Typical for the climate/ soil type; likely to be associated with crop residue returns and other regular organic matter inputs e.g. through cover cropping or compost.
High	≥4.6	≥6.1	≥7.7	CONTINUE ROTATIONAL MONITORING Above average for the climate/soil type; likely to be associated with crop residue returns and other regular organic matter inputs, including ley-arable rotations. Many well-established conservation agriculture or organic farming systems would appear in this group.

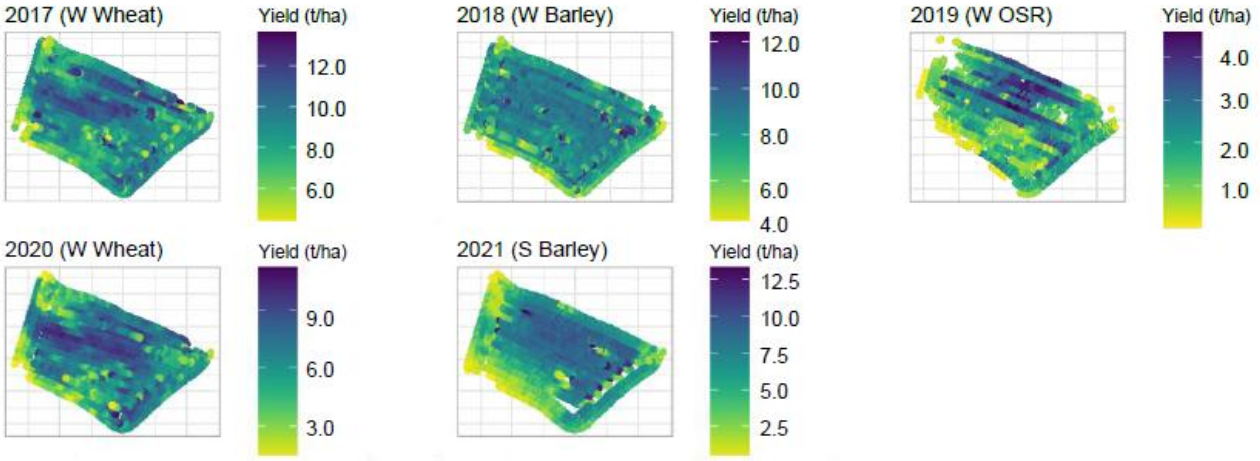
Setting thresholds for SOM – take 2020

(Prout *et al.* 2020, EJSS; doi.org/10.1111/ejss.13012)

- Largely the same data as SBSH used – as reported by as Verheijen et al. (2005)
- Can texture grouping be simplified by use of carbon to clay ratio?
- Shows clear differences by land use, climate (precipitation) and pH (21% of variation explained).
- Thresholds of SOC/clay ratio of 1/8, 1/10 and 1/13 indicated the boundaries between "very good", "good", "moderate", "degraded"

Where clay content is measured, then SOC/Clay is easily calculated and provides a benchmark

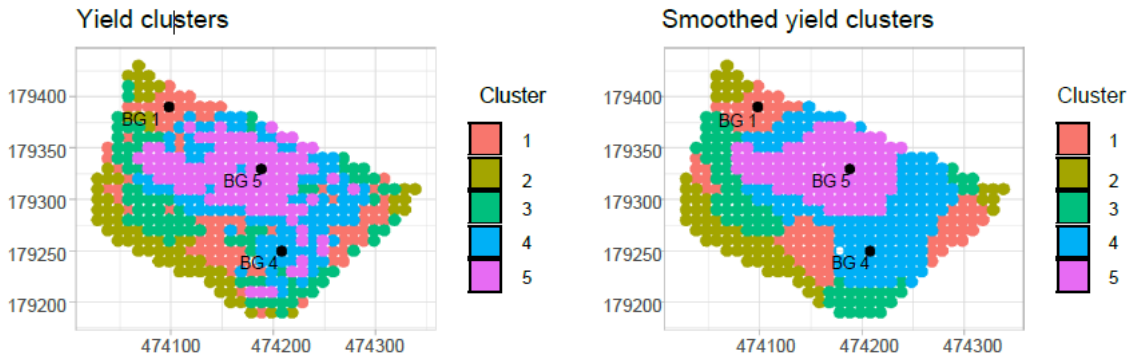
Where to sample? UK doesn't have uniform soils across fields

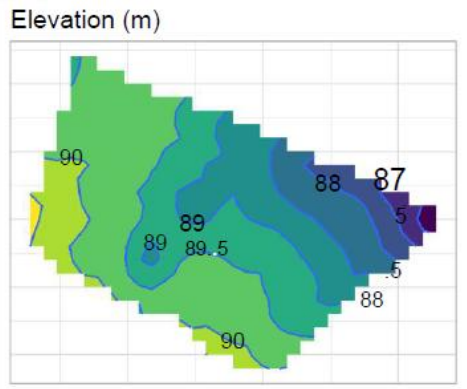


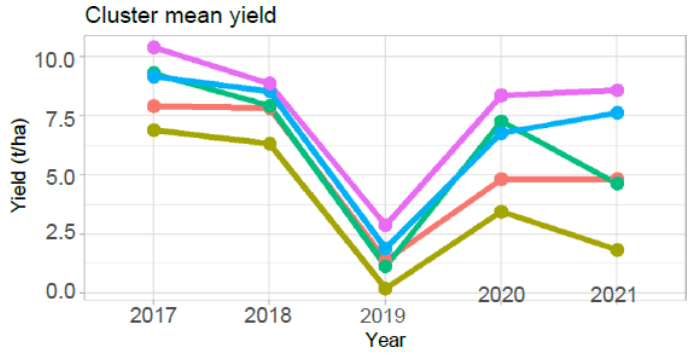
Without yield maps, zones can be identified sites using satellite and soil scan images.

- For management zones to be useful there should be a strong and consistent relationship between soil properties and yield.
- MZ identification through clustering identifies homogenous yield zones that are significantly different from others
- In context of soil C, yield/crop growth could be influencing the soil properties we intend to measure – higher yields = higher C return?

Zoning – Example



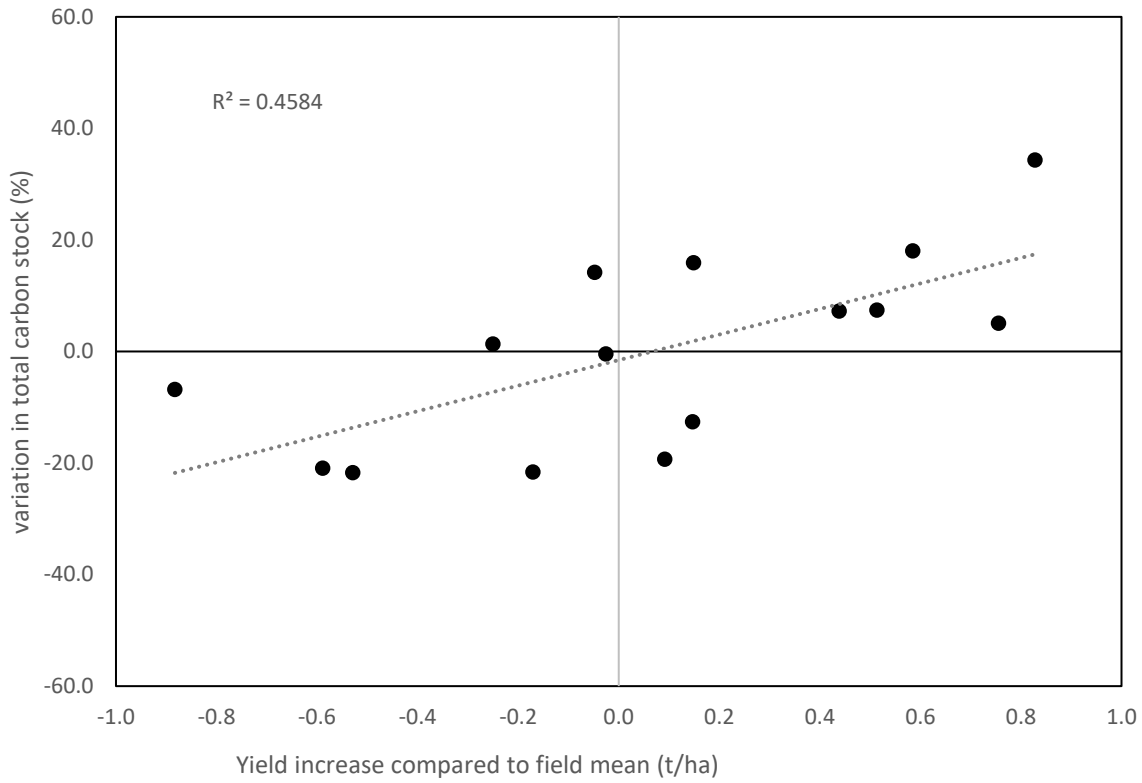




Cluster	Grid squares	Area (Ha)
1	80	0.80
2	62	0.62
3	71	0.71
4	132	1.32
5	99	0.99

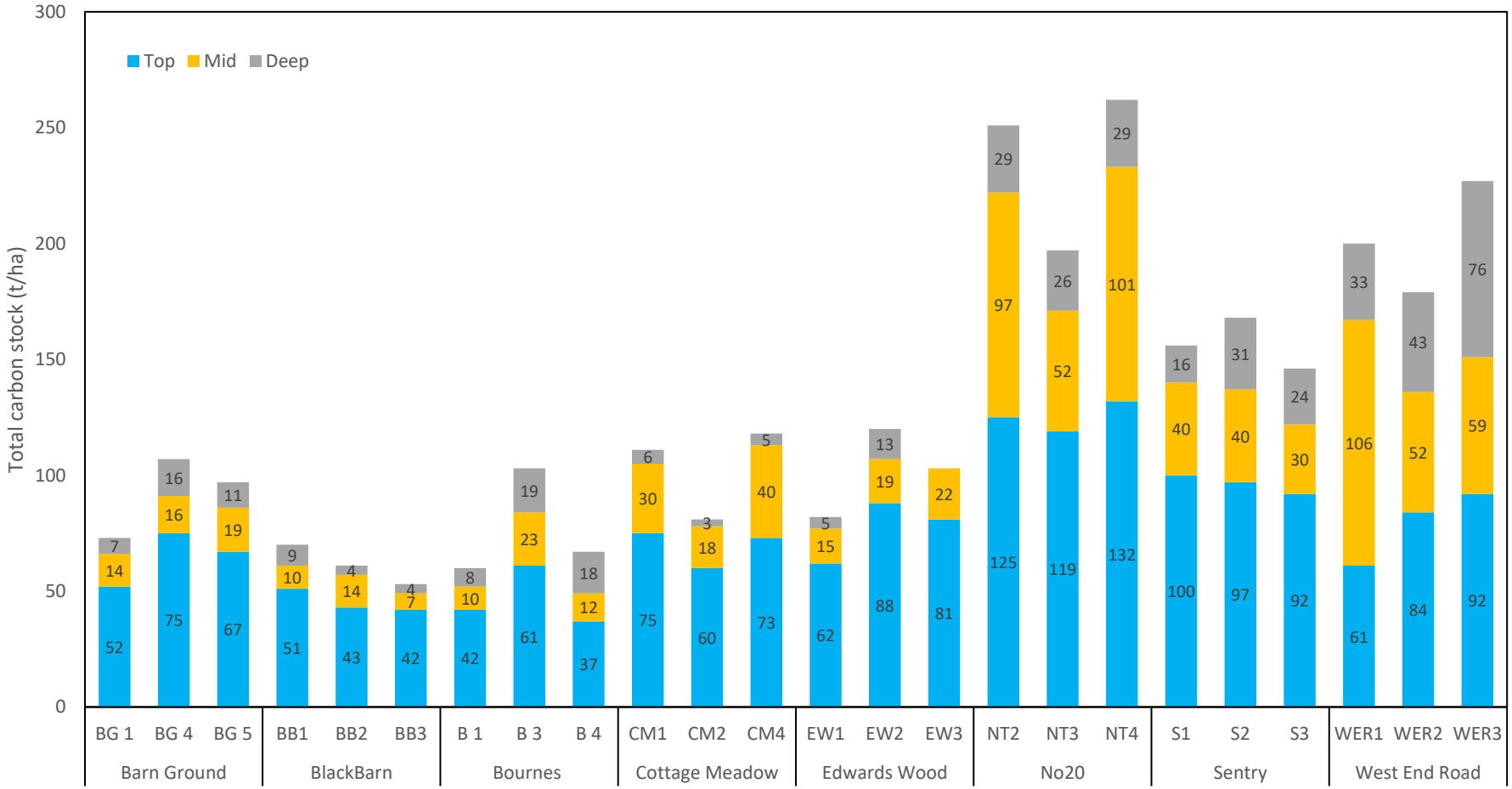
- The 3 largest zones sampled
- Headland zones not sampled on any field as yield variation more likely a result of management not variation in soil properties

Yield/Carbon relationship



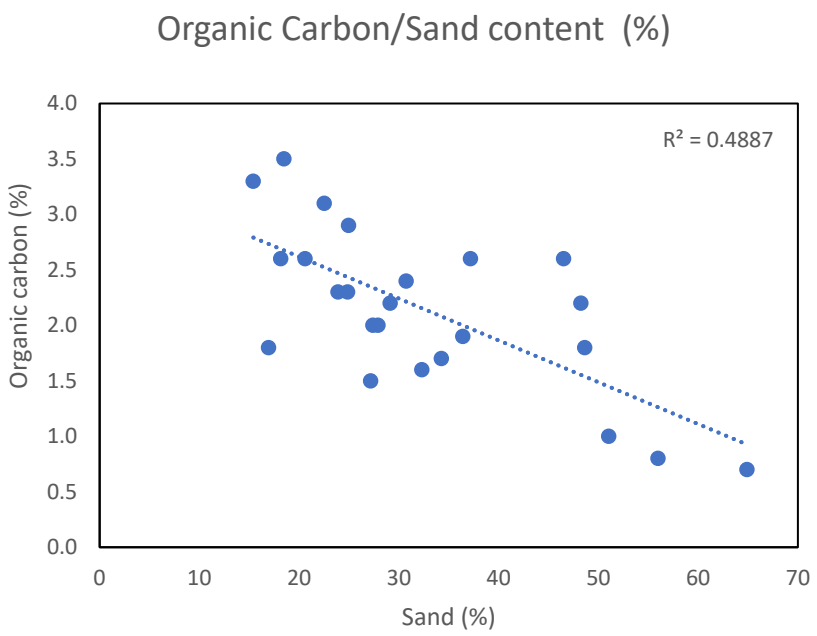
- Significant relationship between cluster yield and total carbon stock
- Likely a positive feedback loop
- Soil properties that increase carbon storage potential (i.e. depth, few stones, biological activity, texture?) also promote higher yield and crop growth
- This in turn increases carbon returns from higher root mass and crop residues from centuries of photosynthesis

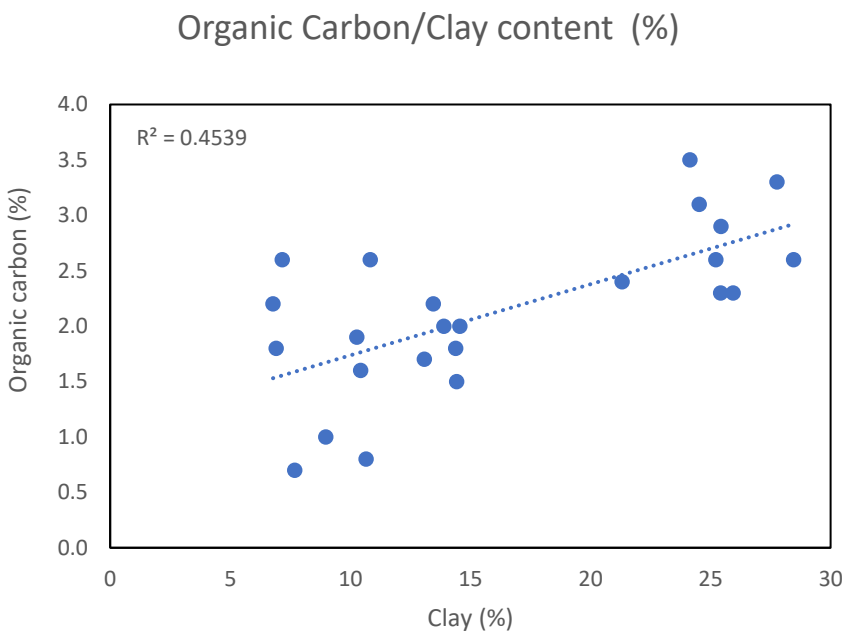
Soil Carbon Stocks (t/ha)



- On average 63% of total soil organic carbon is in top ~30cm of soil
- 24% mid (~30-60cm)
- 13% deep (below ~60cm)

Carbon/Clay ratio





- Common to a link between clay content and carbon content
- Therefore topsoil organic carbon/clay ratio has also been reported

Carbon/Clay ratio

- Important to consider carbon stock levels compared to soils potential
- At a cross field level can provide information on where best to focus resources
- Useful to explain within field variation

Soil health scorecard

Soil health scorecard results, VESS = Visual Evaluation of soil structure, Soil respiration (CO_2 burst) is a measures in the increased respiration when dried soil is rewetted. This doesn't measure microbial biomass as such, and is more considered a general indicator of soil biological activity

	Physics			Chemistry				Biology		
Site (Cluster)	Soil	VESS	Bulk Density (g/cm^3)	pH	P (mg/l)	K (mg/l)	Mg (mg/l)	Earthworm count	OM (%)	Soil respiration
EW1	Medium	2	1.3	5.4	52	121	74	13	2.9	215
EW2	Medium	2.5	1.3	5.8	63	108	83	14	3.5	166
EW3	Medium	2	1.3	6	72	187	91	15	3.8	166

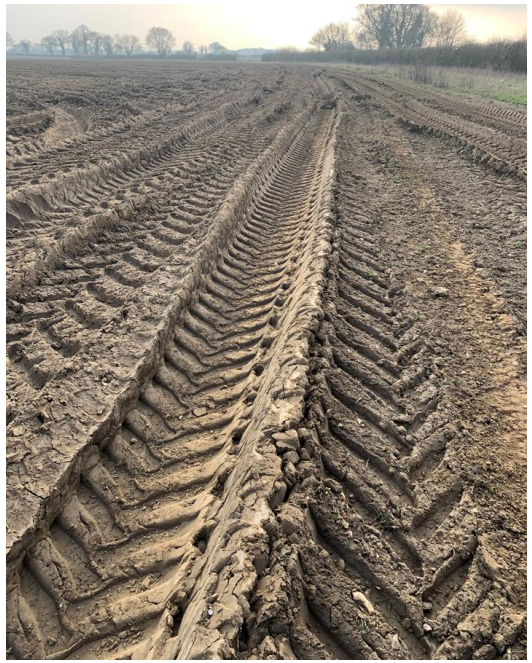
- AHDB Soil Health Scorecard guidelines for soil properties – table is data with extractions and benchmarks for England
- Maintaining good soil function in all categories is important for maximising carbon returns from crop growth, cover crops and biological activity

VESS – Visual Evaluation of Soil Structure (TMAF example)

Structure quality	Appearance after break-up: various soils
Sq1 Friable Aggregates readily crumble with fingers	
Sq2 Intact Aggregates easy to break with one hand	
Sq3 Firm Most aggregates break with one hand	
Sq4 Compact Requires considerable effort to break aggregates with one hand	
Sq5 Very compact Difficult to break up	

Sugar beet crop spring 2020

VESS = 2



Sugar beet harvest Jan 2021

Spring Barley April 2021

VESS = 4

VESS – Visual Evaluation of Soil Structure (TMAF example)

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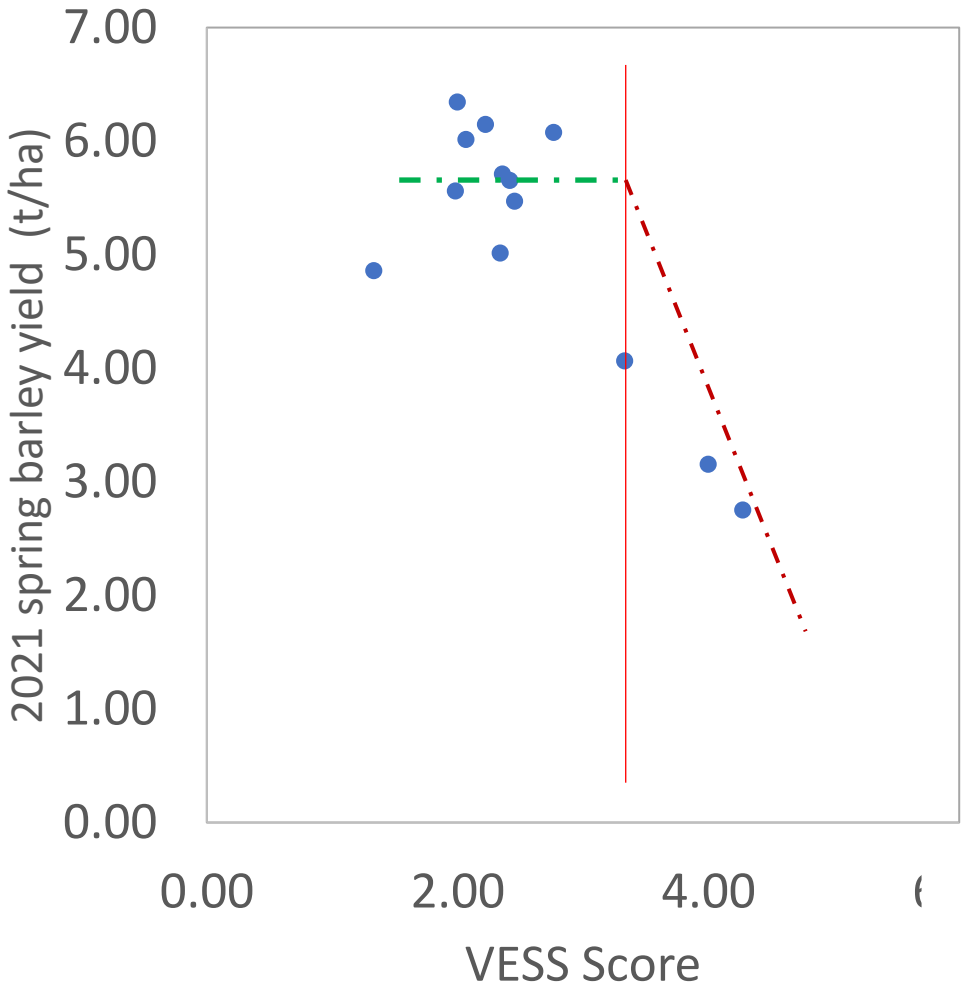
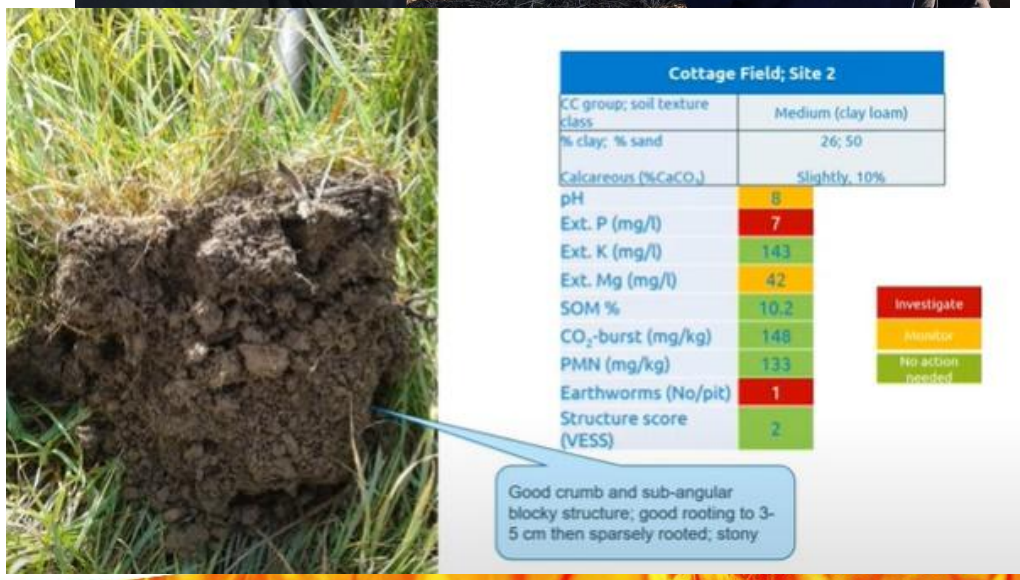


RECORD, COMPARE, DISCUSS

- Choose where to measure carefully; know where it is…
- Start simple – you can always add more complex measures later
- Photograph
- Compare high / low yielding areas ; new/old practices; across the hedge
- Build up your own data (but remember things can change slowly); look at trends
- Discuss with others (on-farm, farmer groups, agronomist)



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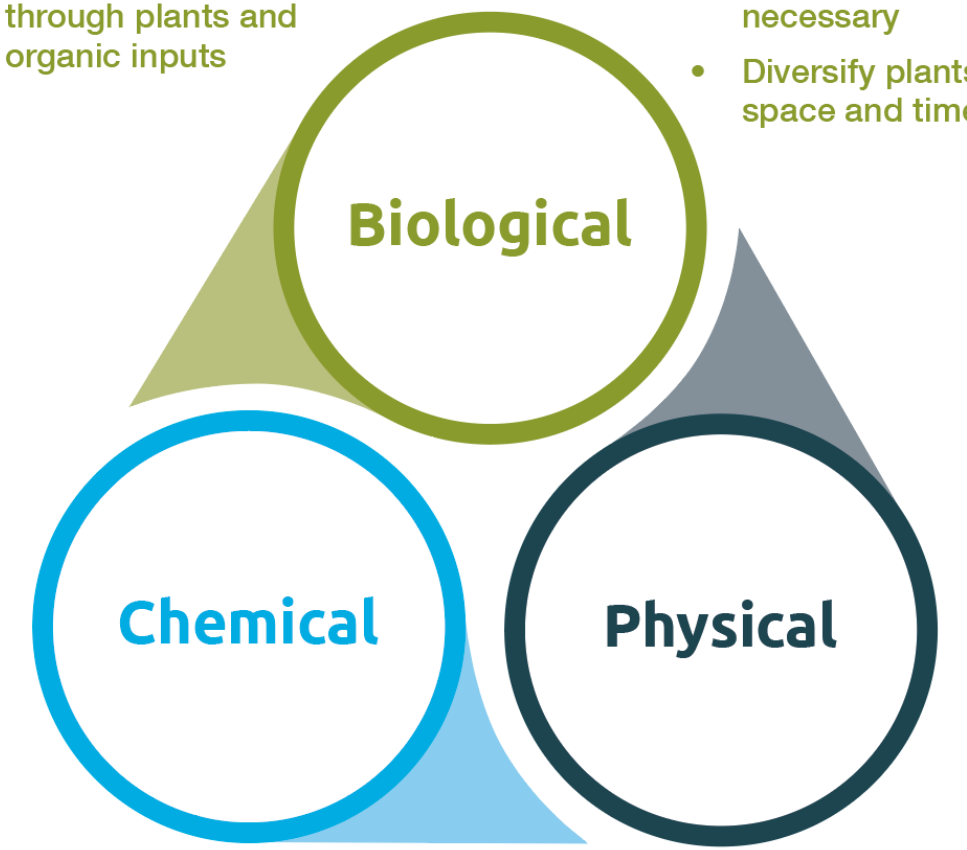
- Feed the soil regularly, through plants and organic inputs
- Move soil only when necessary
- Diversify plants in space and time



- Maintain optimum pH
- Apply nutrients (right amounts, in the right place, at the right time)
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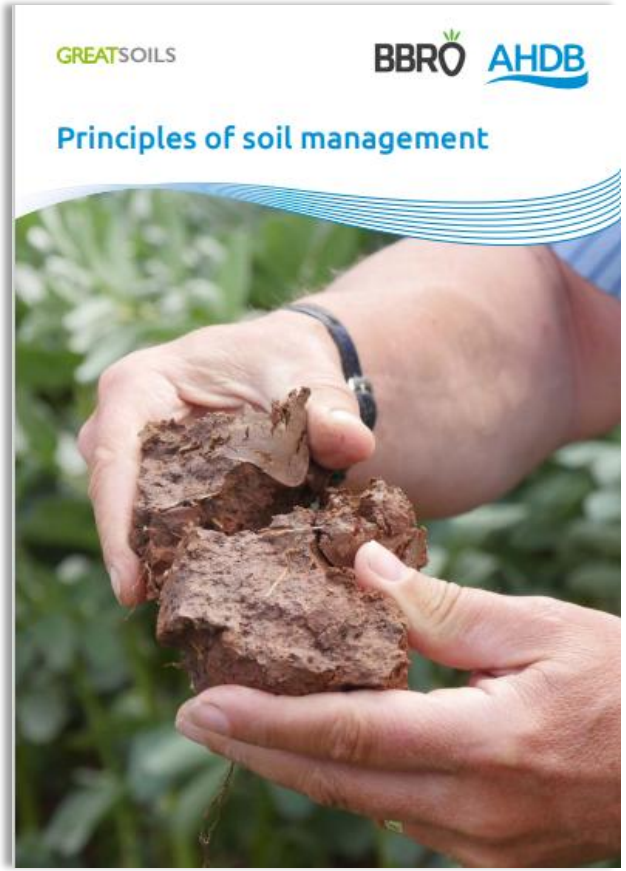
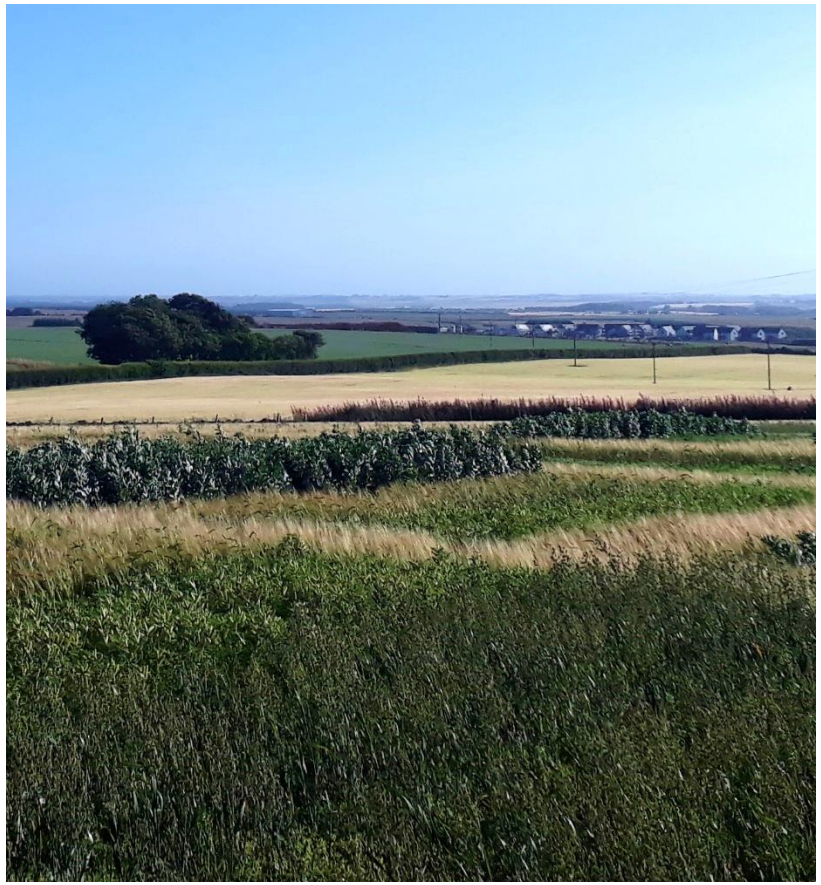




Opportunities with pulses

Agronomy Roadshows: 14th – 23rd January2025

Dr Robin Walker, SRUC

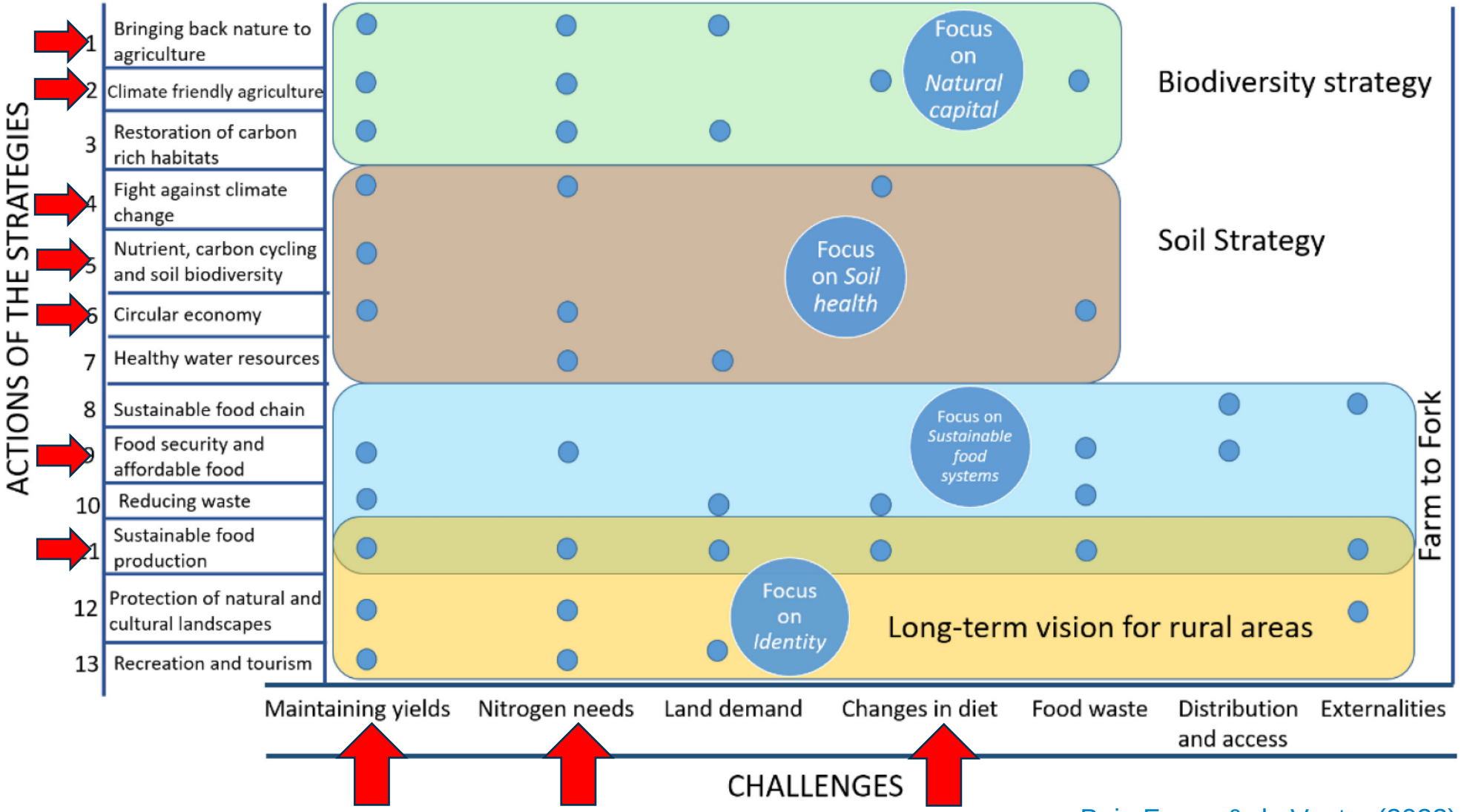
SRDP Farm Advisory Service

www.FAS.scot

advice@fas.scot

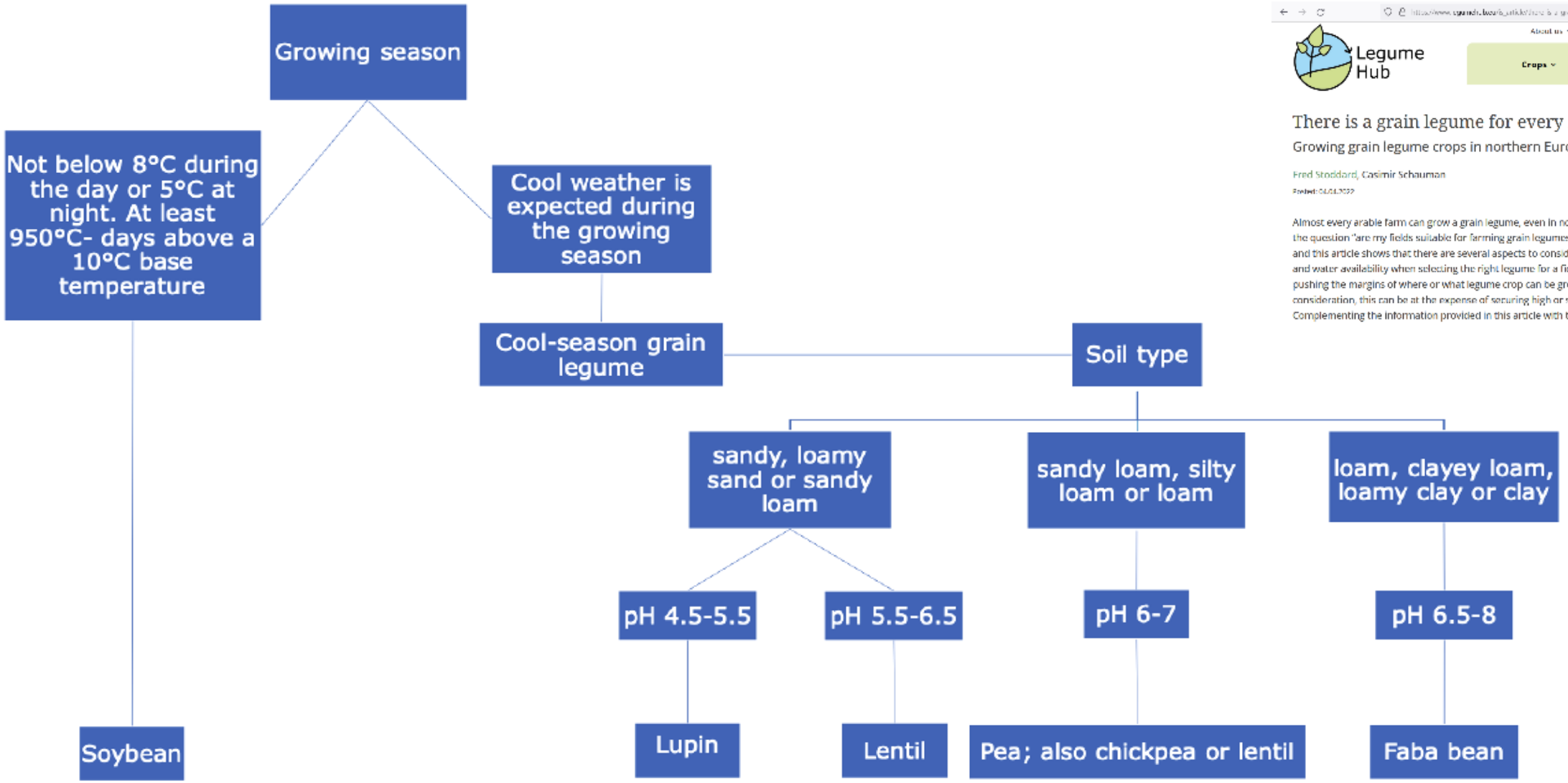
0300 323 0161

Joined Up Policy – where can legumes have impact



Boix-Fayos & de Vente (2023)
https://doi.org/10.1016/j.agsy.2023.103634

There is a grain legume (pulse) for every field …. (more or less) - Legumes Translated Practice Note 66




Legume Hub

There is a grain legume for every field

Growing grain legume crops in northern Europe

Fred Stoddard, Casimir Schauman

Almost every arable farm can grow a grain legume, even in northern Europe. This article deals with the question "are my fields suitable for farming grain legumes". The answer in most cases is "yes", and this article shows that there are several aspects to consider related to soil texture, pH levels and water availability when selecting the right legume for a field. Growers across the world are pushing the margins of where or what legume crop can be grown. However, without careful consideration, this can be at the expense of securing high or stable yields and hence profitability. Complementing the information provided in this article with the right choice of cultivar for

pHoenix Long-term (pH gradient) experiment (SRUC Aberdeen)

pH 4.5 pH 5.0 pH 5.5 pH 6.0 pH 6.5 pH 7.0 pH 7.5

Scottish Government
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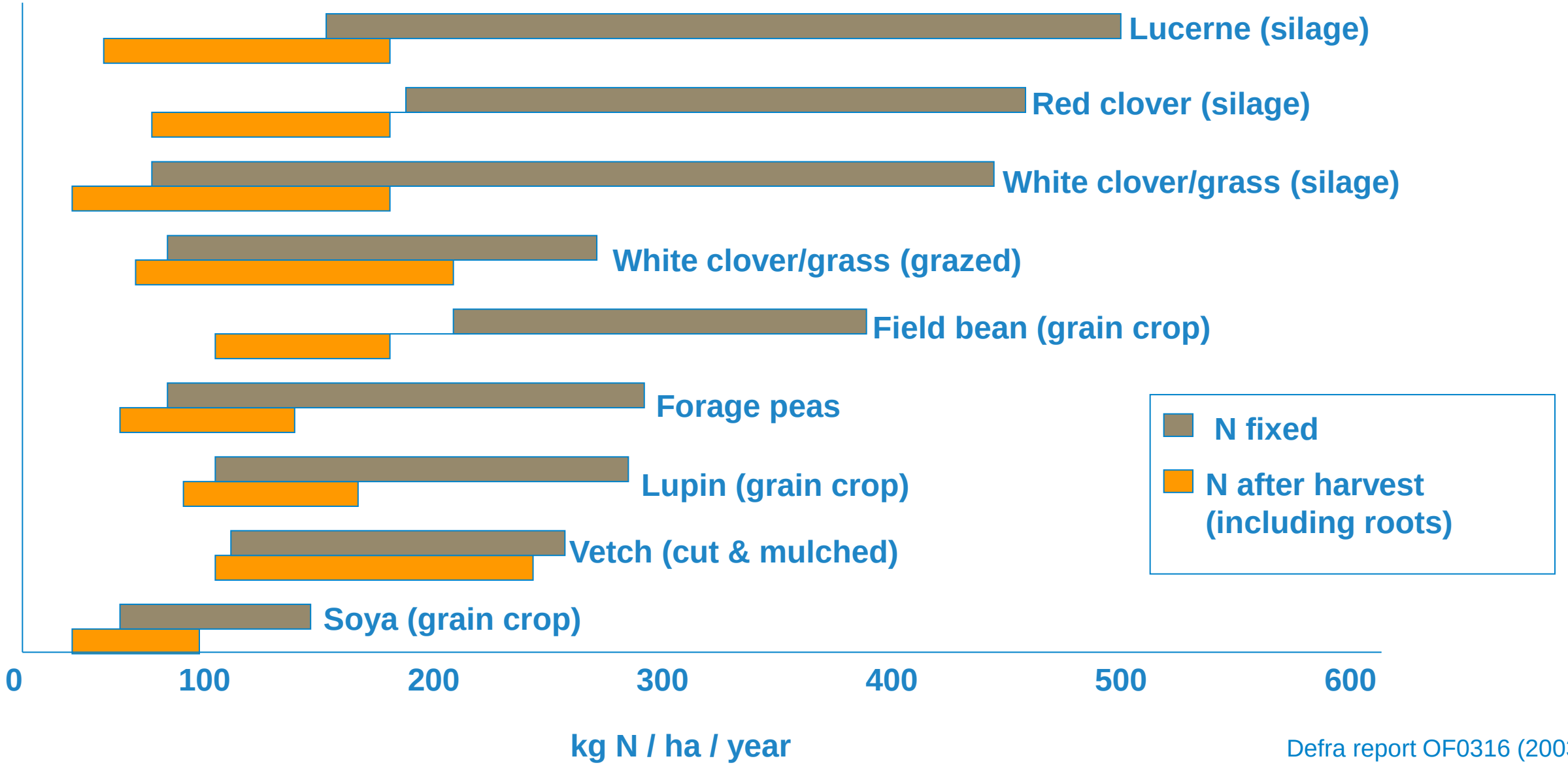
Legumes - How much potential N fixation?



Defra report OF0316 (2003)

Rhizobium inoculation (?)

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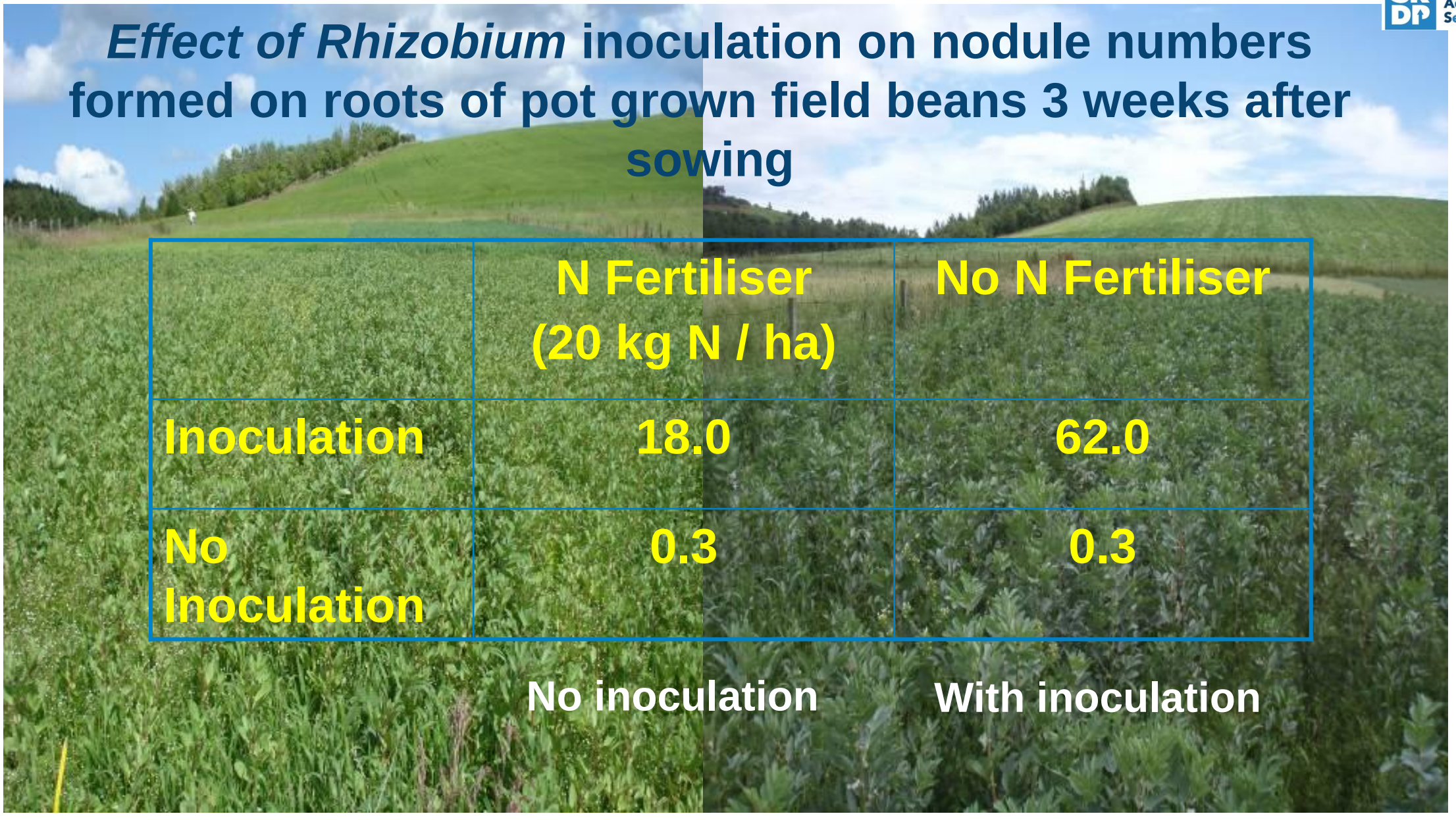
AHDB

SRDP Farm Advisory Service

Effect of Rhizobium inoculation on nodule numbers formed on roots of pot grown field beans 3 weeks after sowing

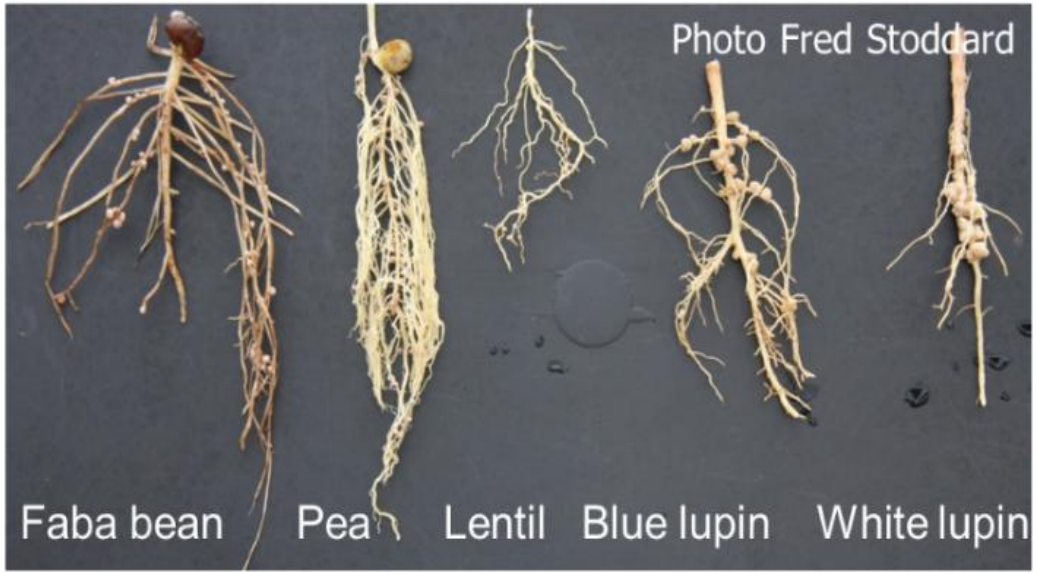
	N Fertiliser (20 kg N / ha)	No N Fertiliser
Inoculation	18.0	62.0
No Inoculation	0.3	0.3

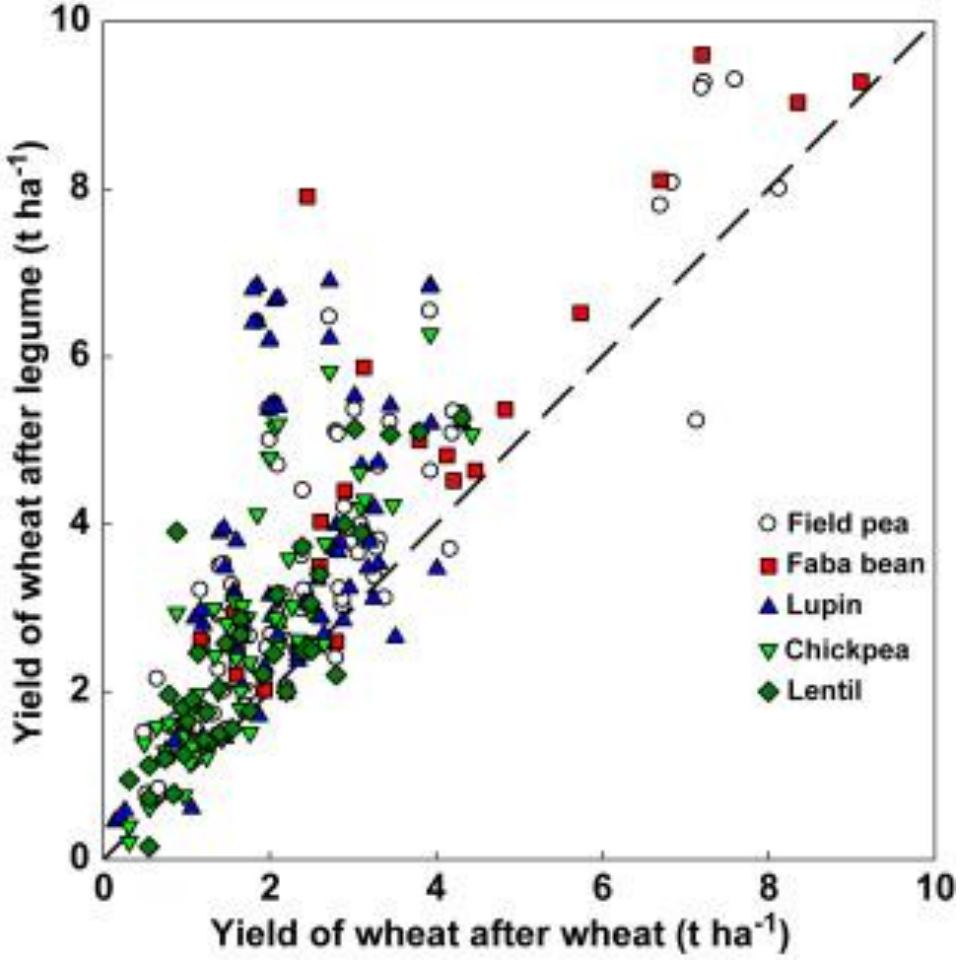


Diversifying crop rotations with grain legumes

- Grain legume grown one year in 5 could lead to an annualised nitrogen saving of 30.8 kg/ha.

- Equivalent to 1.4% (2.2% if fertilizer manufacture included) of Scotland's agriculture emissions (Wiltshire et al. 2020)

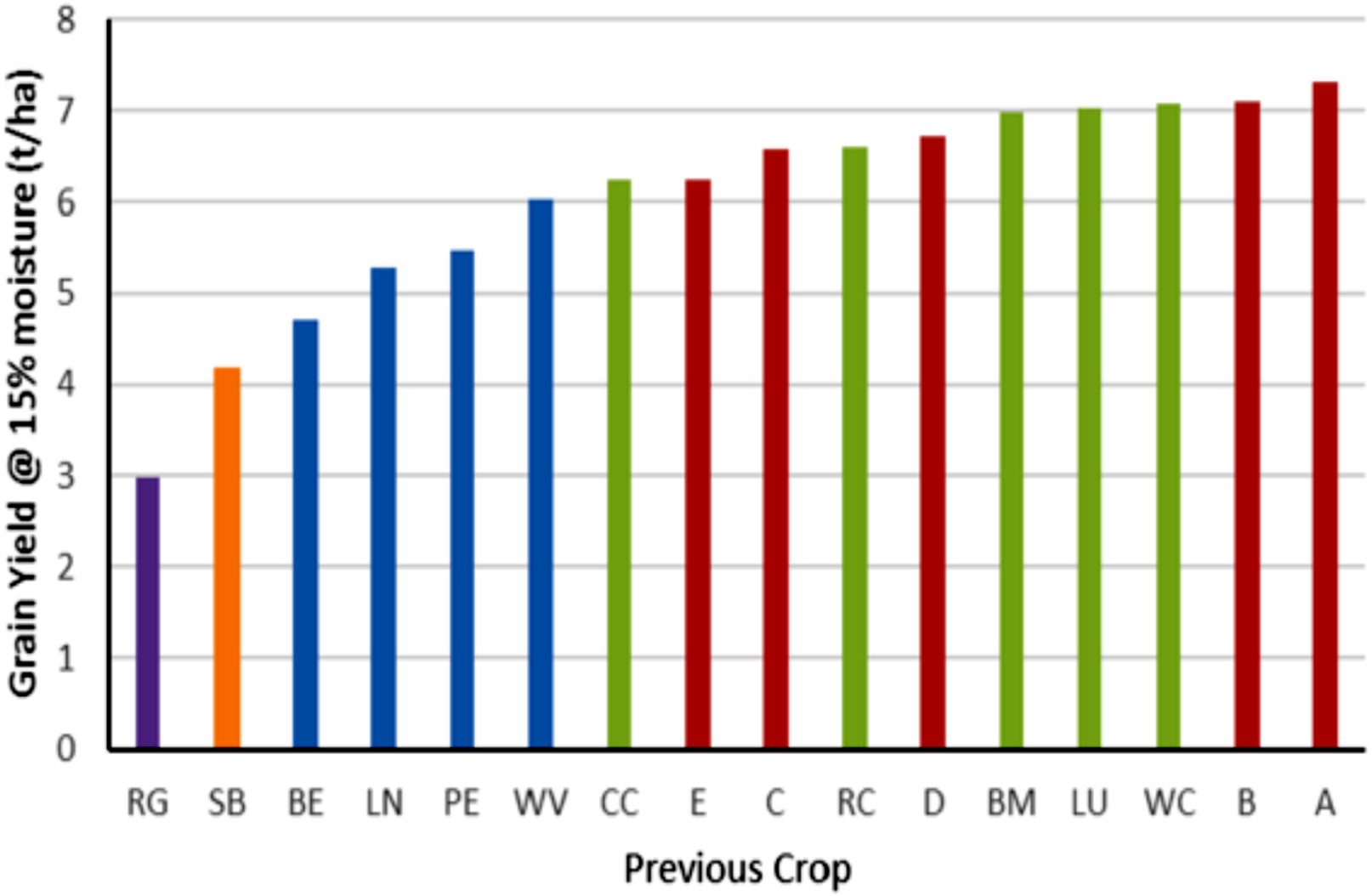




The dashed line represents equal yields. Any points above the dashed line indicate yield improvements when a legume is the preceding crop. Fitted regression: Grain yield (wheat after legumes) = 0.92 + 1.06 x (wheat after wheat) [r2 = 0.69].

Peoples, M.B. et al. 2019. The contributions of legumes to reducing the environmental risk of agricultural production. In Agroecosystem diversity (pp. 123-143). Academic Press.

Rotational effects after growing legumes - Spring barley grain yield (t/ha) in following crop (zero N applied)



Mixtures

A	RC / BM / LU
B	RC / WC / CC
C	WC / WV / PE
D	WC / WV / BE
E	WC / BM / WV

Purple – ryegrass

Orange – Spring Barley

Blue – grain legume species

Green – forage legume species

Red – 3 legumes mixtures

Baddeley, Walker & Watson (unpublished)

PGRO Descriptive Lists 2025
Peas & Beans

https://www.pgro.org/pulse-agronomy-guide/

Combinable Pea – control yield (3.56 t/ha)

			Agronomic characters			Resistance to			Seed characters			
	UK Agent see appendix	Yield as % of control	Earliness of maturity (1-9)	Straw length (cm)	Standing ability at harvest (1-9)	Pea wilt (Race1)	Downy mildew (1-9)	Powdery mildew *	Thousand seed weight (g) (@15%mc)	Protein content (% dry)	No. Years in matrix	Year first listed
Yellow												
KWS Bram[V1]	KWS	118	7	78	6	R	6	-	288	21.8	3	**25**
Concerto	NPZ	118	6	75	7	R	7	[S]	365	21.5	3	24
Marler	Cope	116	6	84	6	R	6	[HR]	305	21.7	3	**25**
NOS Blondie	El	116	7	79	7	-	5	-	304	21.5	3	**25**
Batist	Sen	116	6	83	7	R	6	[S]	317	21.7	4	24
Captur	Agro	115	6	76	7	R	6	[S]	312	22.6	3	**25**
Bellair[V2]	IARA	115	5	73	7	R	5	[HR]	242	21.0	3	**25**
KWS Flam	KWS	114	6	86	7	R	5	[S]	266	21.7	4	24
Kameleon	Sen	112	6	73	7	R	5	[S]	319	21.8	5	20
LG Corvet	LUK	111	7	74	7	-	8	[S]	298	22.2	3	**25**
Orchestra	NPZ	109	6	74	7	R	4	[S]	329	22.5	4	20
Bonham	Sen	107	6	82	6	R	6	[S]	314	22.6	3	**25**
Manager	KWS	106	6	79	7	R	6	[MR]	297	22.6	4	18
LG Ajax	LUK	100	6	69	7	R	7	[HR]	282	22.7	5	23

(1-9) A high rating indicates that the variety shows the character to a high degree

Combinable Pea (contd.) – control yield (3.56 t/ha)

			Agronomic characters			Resistance to			Seed characters			
	UK Agent see appendix	Yield as % of control	Earliness of maturity (1-9)	Straw length (cm)	Standing ability at harvest (1-9)	Pea wilt (Race1)	Downy mildew (1-9)	Powdery mildew *	Thousand seed weight (g) (@15%mc)	Protein content (% dry)	No. Years in matrix	Year first listed
Green												
Pangea	NPZ	114	5	79	6	R	6	[HR]	366	22.8	3	**25**
Mikka	IARA	108	4	84	7	R	7	[S]	316	22.5	5	21
KWS Gotham	KWS	107	3	82	6	R	5	[S]	306	22.4	5	23
Carrington	NPZ	107	6	81	7	R	8	[S]	260	21.5	5	22
Butterfly	NPZ	105	7	78	7	R	6	[S]	314	21.5	5	23
Bluetime	NPZ	103	4	84	7	R	8	[S]	300	21.9	4	18
Shazam	Sen	103	4	85	7	R	6	[S]	267	22.0	4	24
Greenway	IARA	102	5	82	7	R	7	[S]	314	22.3	5	21
Karioka	Sen	100	6	80	7	R	6	[S]	276	21.9	4	18
Kactus	Sen	100	5	74	7	R	7	[S]	305	22.3	5	20
Reacher^{V3}	IARA	99	6	72	5	R	7	[HR]	284	21.2	4	24
LG Aviator	LUK	99	5	73	7	R	7	[HR]	299	22.1	4	20
Daytona	Agrii	95	7	74	7	R	6	[S]	285	21.9	3	10
Prophet	LUK	83	4	70	7	R	6	[S]	315	21.7	3	07
Maple												
Mantara	LUK	94	6	60	7	R	8	[S]	256	23.6	3	10
Rose	Dalt	88	8	74	7	S	9	[S]	272	24.0	3	03
Marrowfat												
Midori	NPZ	103	4	88	7	R	4	[S]	393	22.7	3	**25**
Vision	El	99	5	73	8	R	7	[S]	386	22.7	4	24
Akooma	NPZ	95	5	77	6	R	5	[S]	421	22.8	4	21
Takayama	NPZ	95	5	82	6	R	6	[S]	370	22.9	5	23
Octavia	IARA	86	3	73	8	R	4	[S]	417	23.6	5	20
Sakura	Dalt	80	5	74	7	R	4	[S]	394	23.3	5	08

Winter Beans – control yield (4.09 t/ha)

		Agronomic characters					Resistance to			Seed characters			
	UK Agent see appendix	Yield as % of control	Flower colour	Earliness of maturity (1-9)	Straw length (cm)	Standing ability at harvest (1-9)	Downy mildew (1-9)	Rust* (1-9)	Chocolate spot (1-9)	Thousand seed weight (g) (@15%mc)	Protein content (% dry)	No. Years in matrix	Year first listed
Pale Hilum													
Vincent	Sen	108	C	5	113	8	7	4	6	818	26.6	5	21
Vespa	Sen	108	C	5	112	8	5	5	7	711	25.3	5	18
Bumble	Sen	107	C	5	118	8	5	5	5	716	24.9	5	16
LG Arctic	LUK	103	C	5	113	8	5	5	5	728	26.4	4	24
Miro	Sen	101	C	7	104	8	3	5	[7]	775	26.2	3	**25**
Bonneville	Sen	100	C	6	111	8	5	4	5	748	26.2	5	23
Norton	Sen	98	C	6	105	8	6	5	5	709	25.6	5	21
Ninja	Sen	98	C	8	103	8	5	5	5	703	27.1	4	24
Tundra	LUK	92	C	6	102	8	5	5	5	634	25.9	5	14

Spring Beans – control yield (4.25 t/ha)

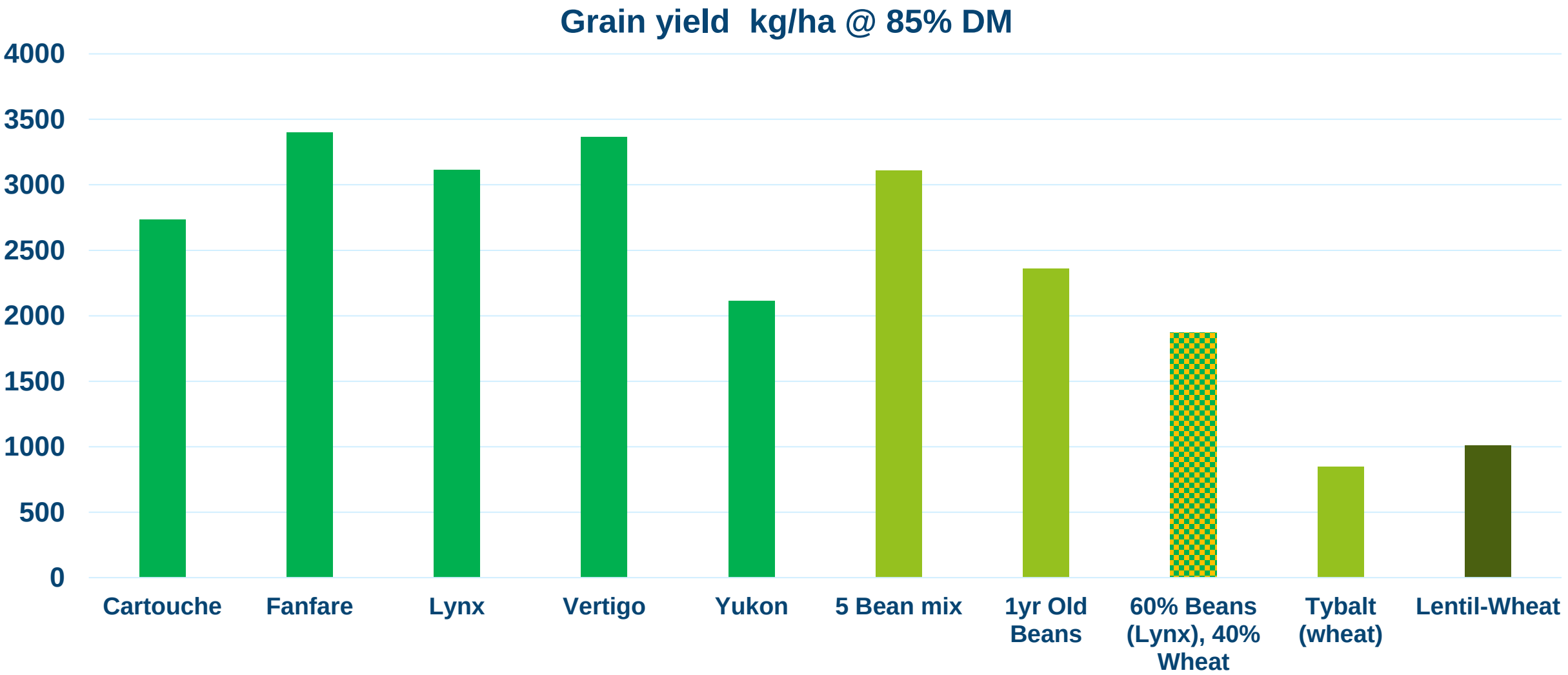
			Agronomic characters				Resistance to		Seed characters			
	UK Agent see appendix	Yield as % of control	Flower colour	Earliness of maturity (1-9)	Straw length (cm)	Standing ability at harvest (1-9)	Downy mildew (1-9)	Rust* (1-9)	Thousand seed weight (g) (@15%mc)	Protein content (% dry)	No. Years in matrix	Year first listed
Pale Hilum												
Notilus	Sen	110	C	5	102	8	3	5	600	27.3	3	**25**
LG Eagle	LUK	110	C	5	101	8	3	5	638	26.3	3	**25**
Synergy[LVC]	SU	107	C	7	103	8	3	4	576	28.3	4	24
Ketu[LVC]	NPZ	107	C	7	106	8	4	5	531	27.6	3	**25**
Navara	Sen	107	C	4	106	8	5	6	574	26.4	4	24
Genius	NPZ	106	C	6	101	8	5	4	563	26.9	5	23
Lynx	NPZ	106	C	6	100	8	6	4	515	27.5	5	16
LG Stego	LUK	105	C	6	102	8	4	5	580	28.2	5	23
Futura[LVC]	NPZ	103	C	7	102	8	4	4	541	27.6	5	23
Loki	NPZ	103	C	6	97	8	5	6	553	25.4	3	**25**
LG Hawk	LUK	102	C	7	100	8	3	5	572	27.3	4	24
LG Raptor	LUK	99	C	7	100	8	4	5	548	27.4	5	20
LG Viper	LUK	94	C	5	89	9	8	7	572	28.8	5	21
Black Hilum, Tic												
Maris Bead	WAC	84	C	5	107	7	7	[5]	408	29.7	3	64

Bean Variety Trials (SRUC 2020/2021)

Legumes Translated

Scottish Government
Riaghaltas na h-Alba
gov.scot

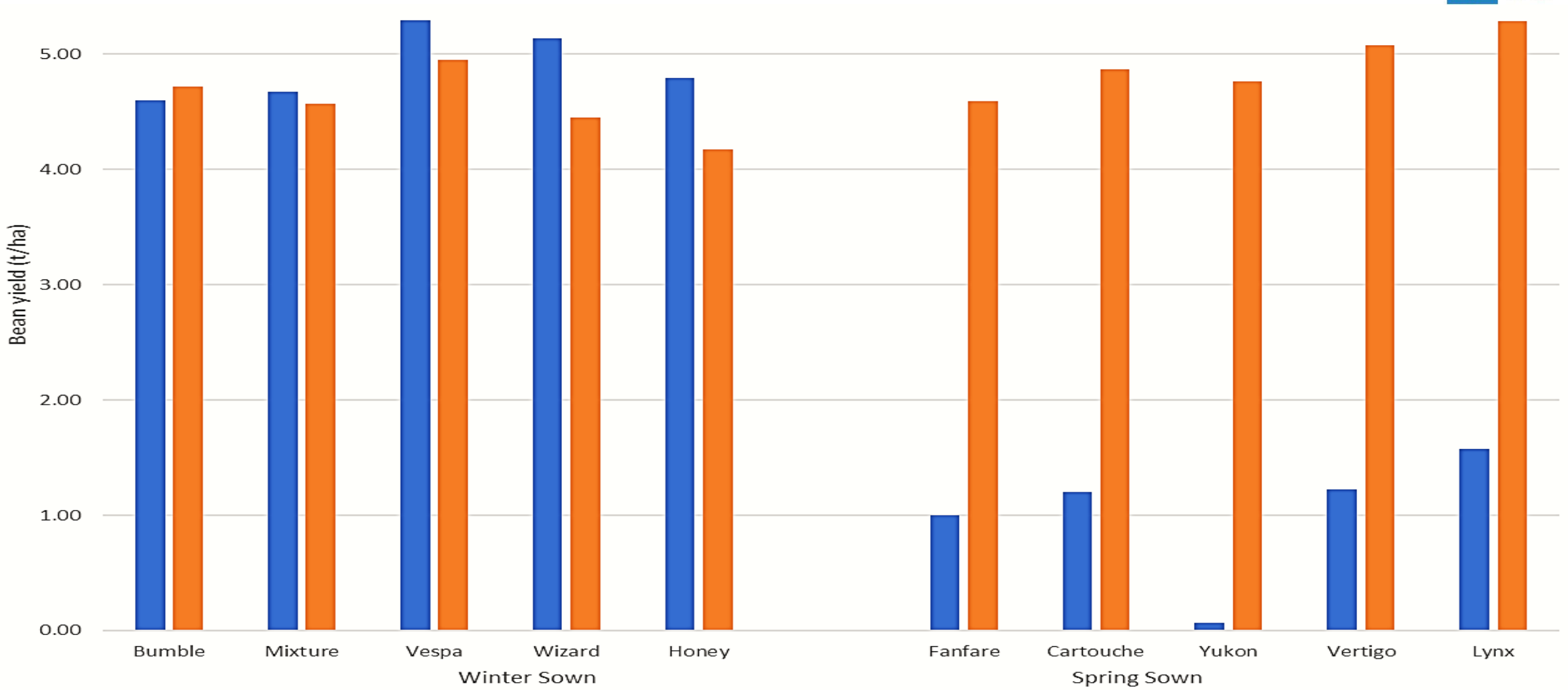
Spring Bean Varieties / Mixes (SRUC Aberdeen; 2021)



Legumes Translated

Scottish Government
Riaghaltas na h-Alba
gov.scot

Winter & Spring Beans (SRUC Dumfries 2020/21)



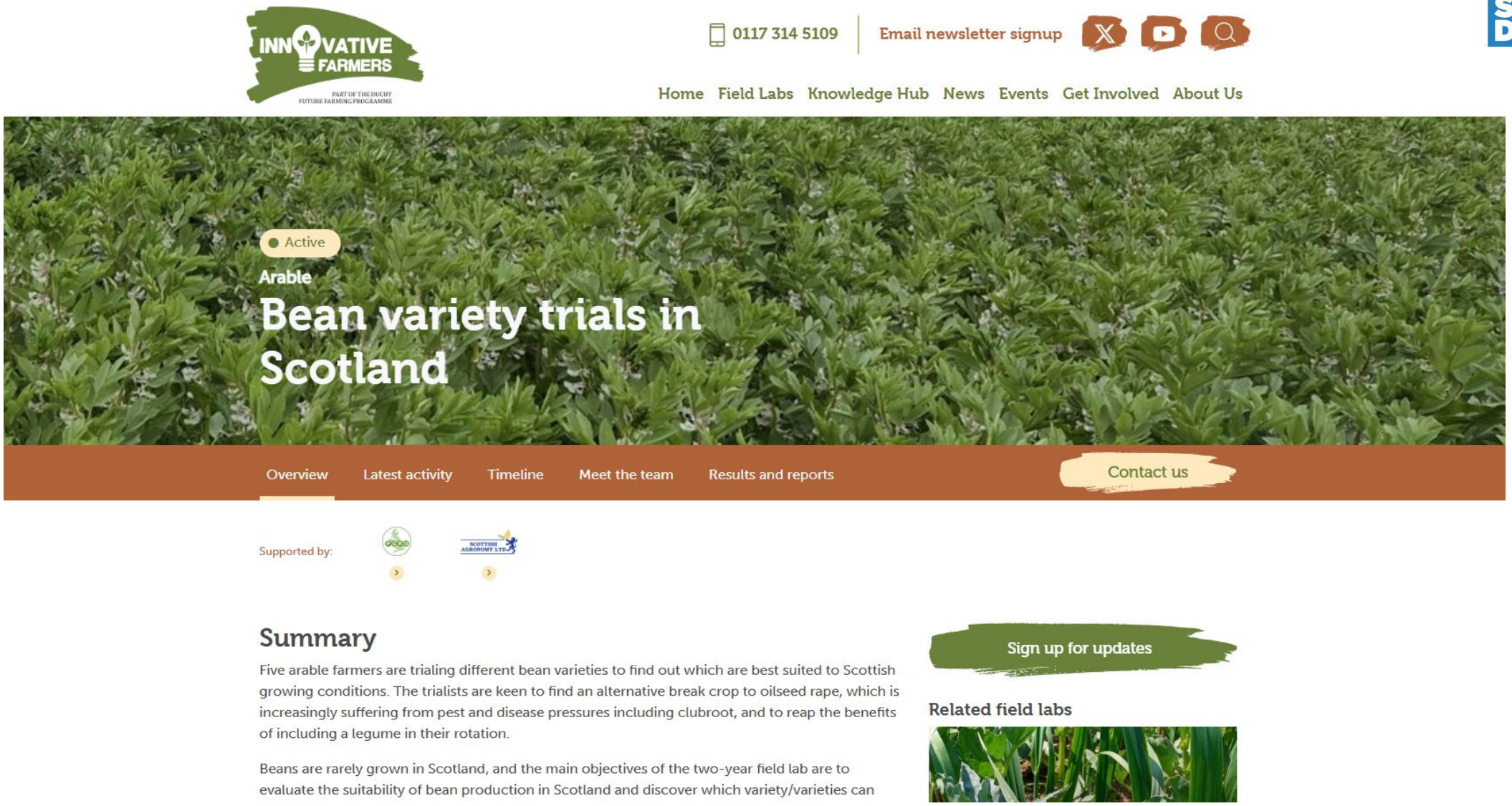
AHDB

SRDP Farm Advisory Service

Legumes Translated

Scottish Government
Riaghaltas na h-Alba
gov.scot

Current Scottish Bean (Winter) Variety Trials



https://www.innovativefarmers.org/field-labs/scottish-bean-variety-trials/

Intercropping – Cereal & Peas, Beans or Lupins

Sole

Inter-cropped

Peas

Beans

Lupins

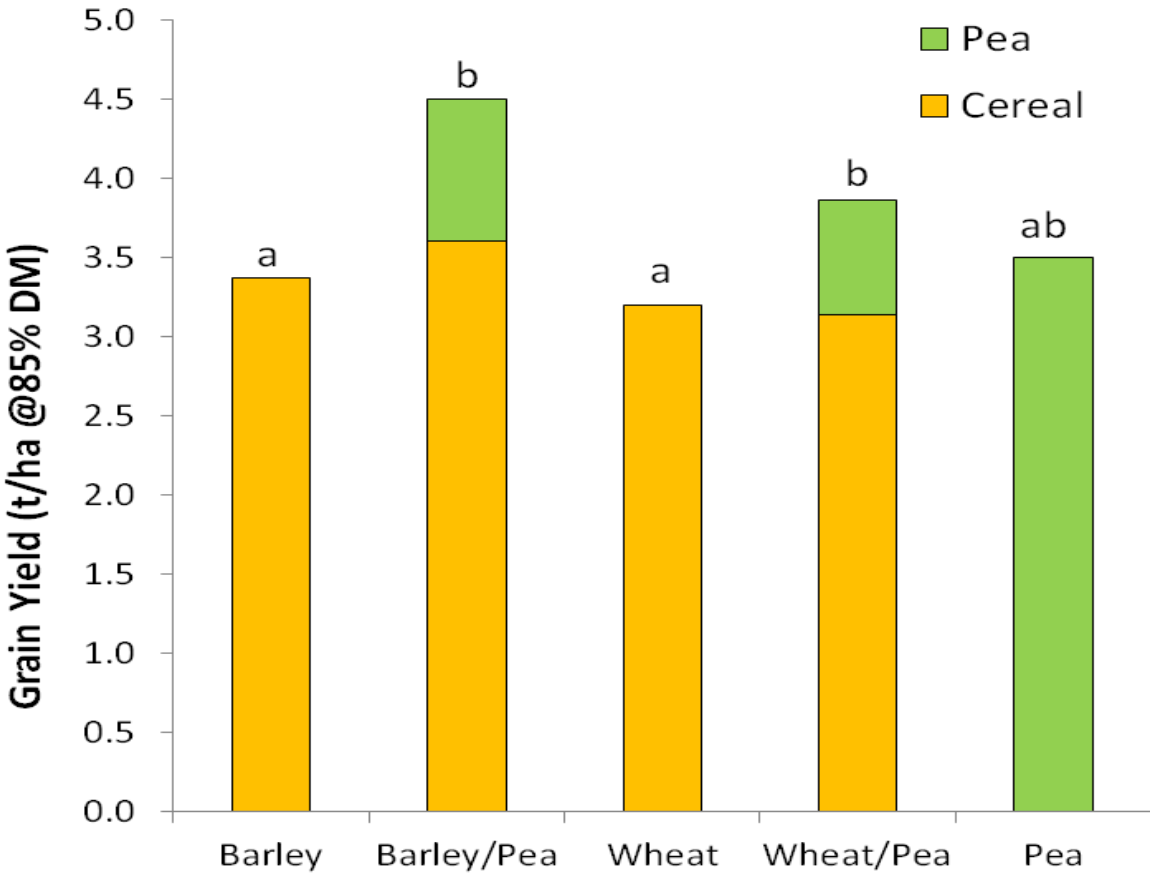
Lentils (oats as scaffold)

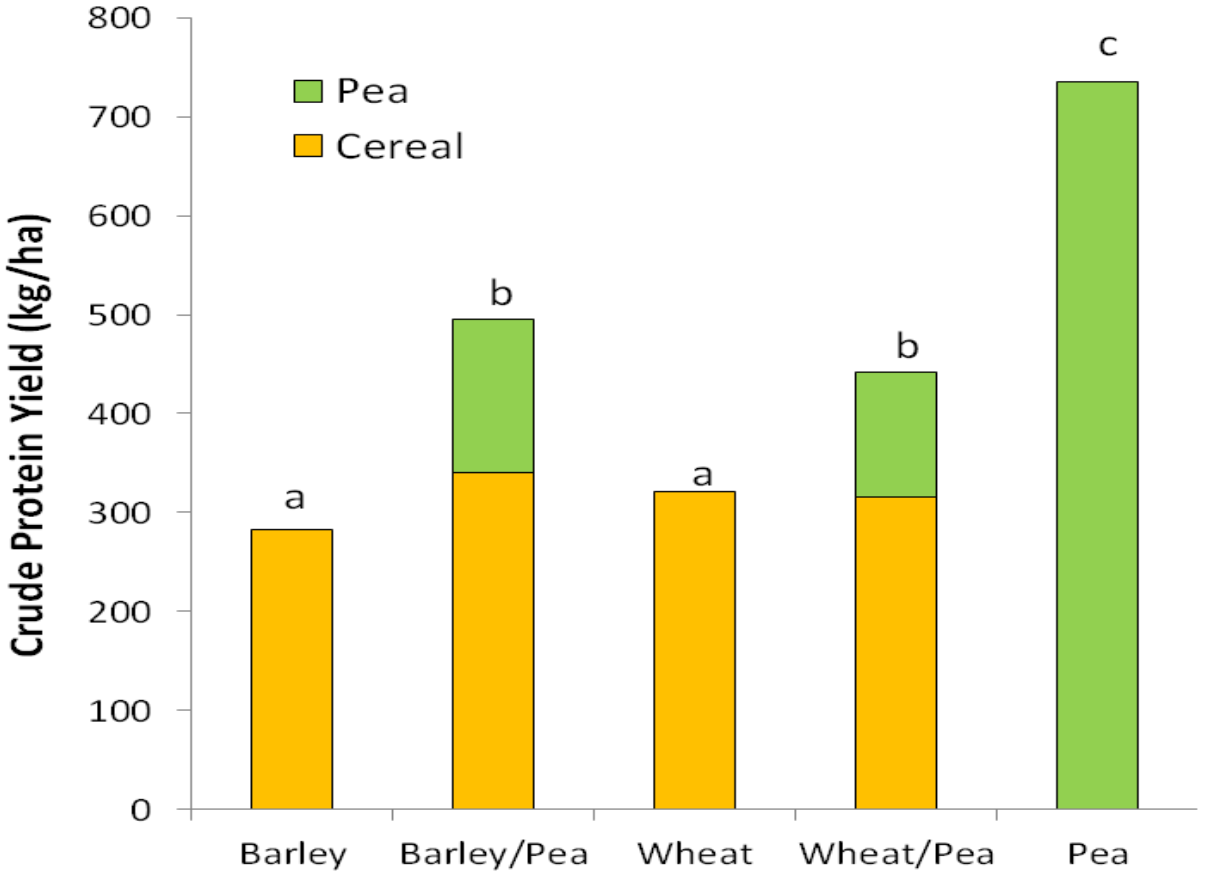
Anicia

Gotland

Intercrops: Grain & Protein Yield

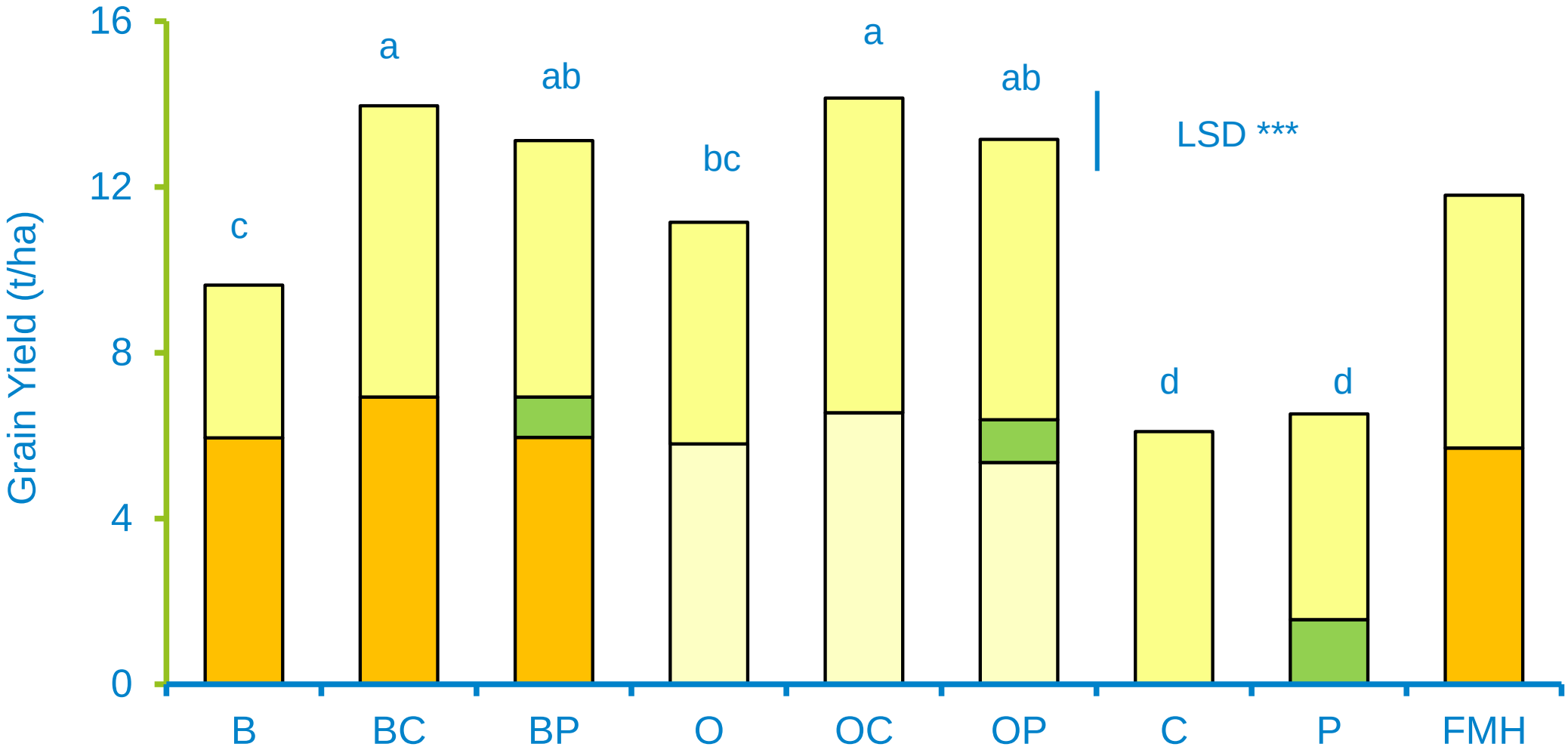
- LER (Land equivalence ratio) ~ 1.2
- Intercropping increased protein in barley grain but not wheat BUT did increase protein on an area basis





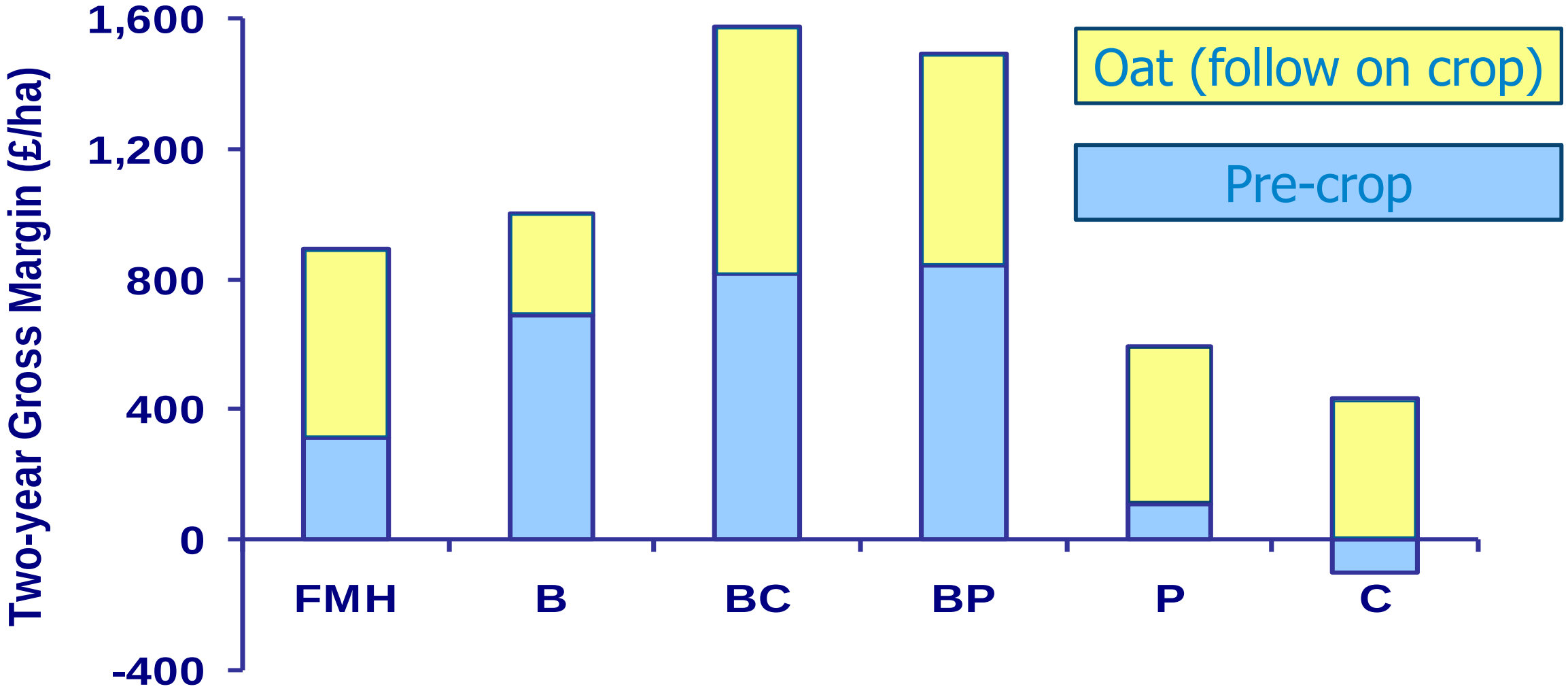
John Faulconbridge (SRUC MSc thesis)

Total Grain Yield across 2 years (intercrop year & follow on year)



P = Pea; C = Clover; B = Barley; O = Oat, FMH = conventional reference

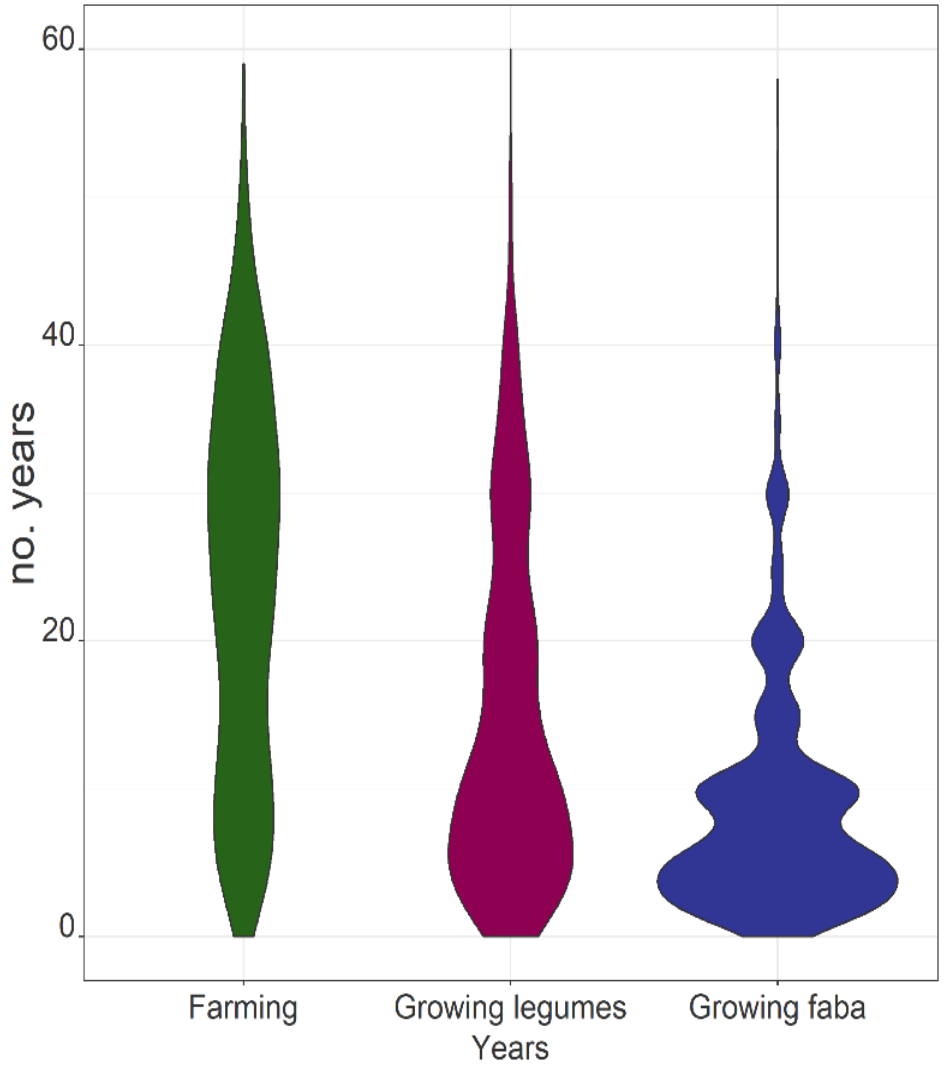
Gross Margins (over 2 years)



P = Pea; C = Clover; B = Barley; FMH = conventional reference

Field Bean Grower Survey (EU)

Who are the Faba bean growers?



2020/21 Survey of farmers in 9 EU Countries (including UK)

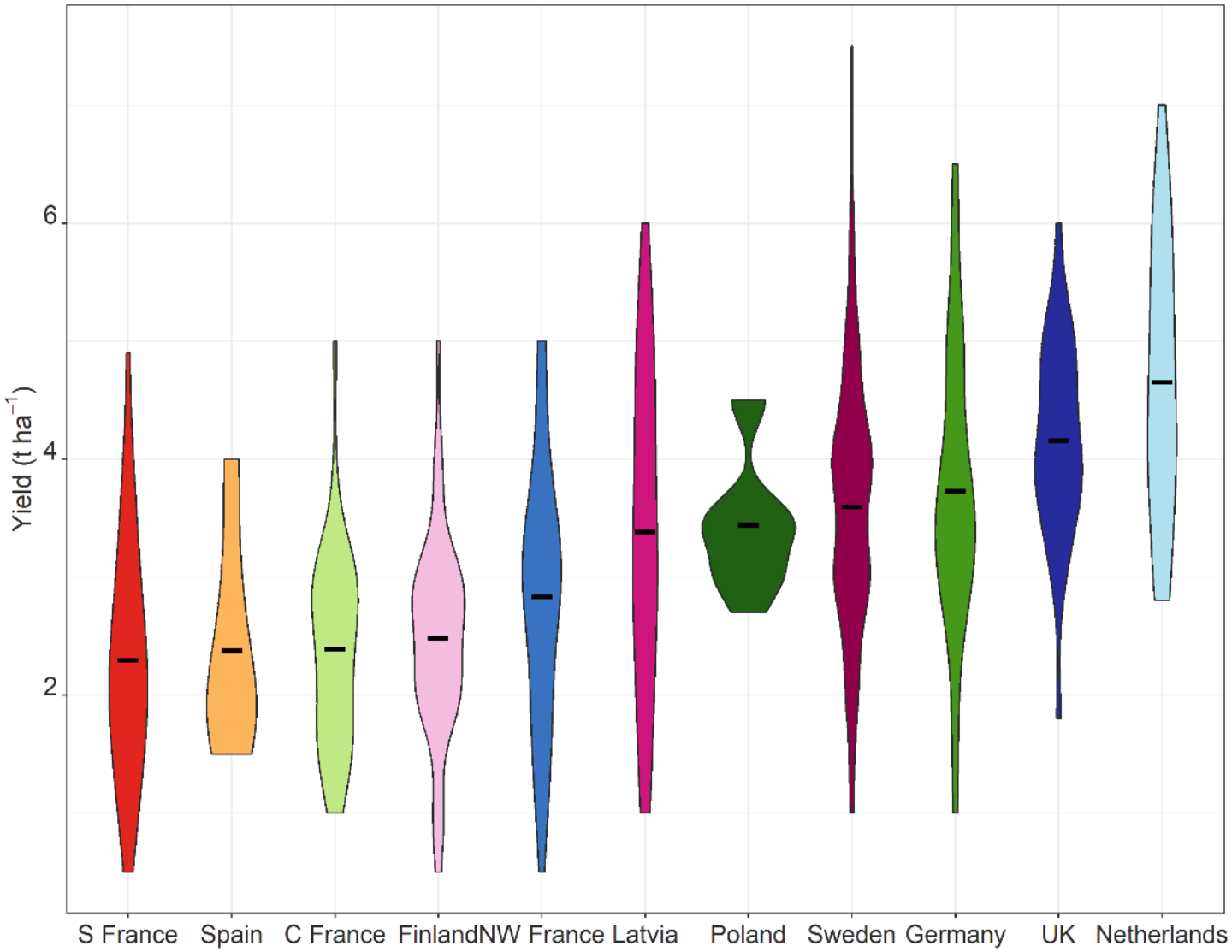
FABA (547) [Soya (216)] responses)

Interviewed farmers ranged in age from 46 to77

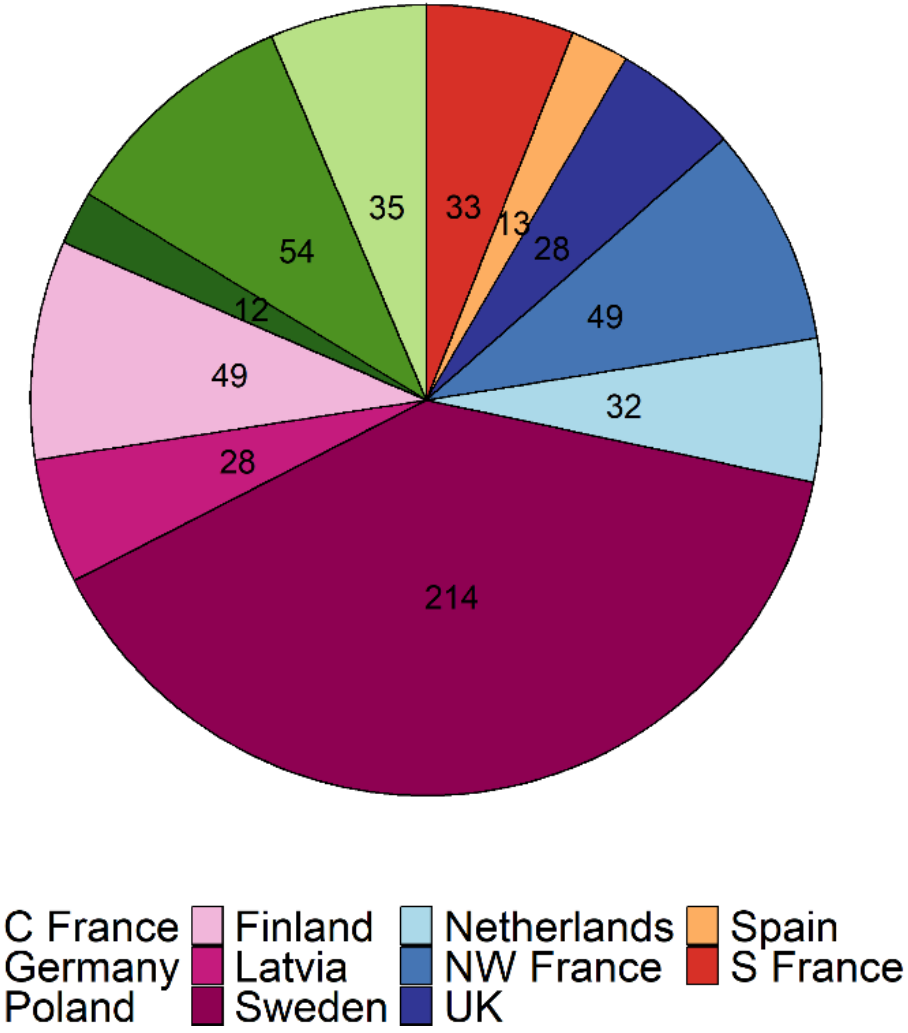
Farm size varied from <1 to 5000 ha

The proportion of arable land on farms growing either soya or faba was approx. 90%

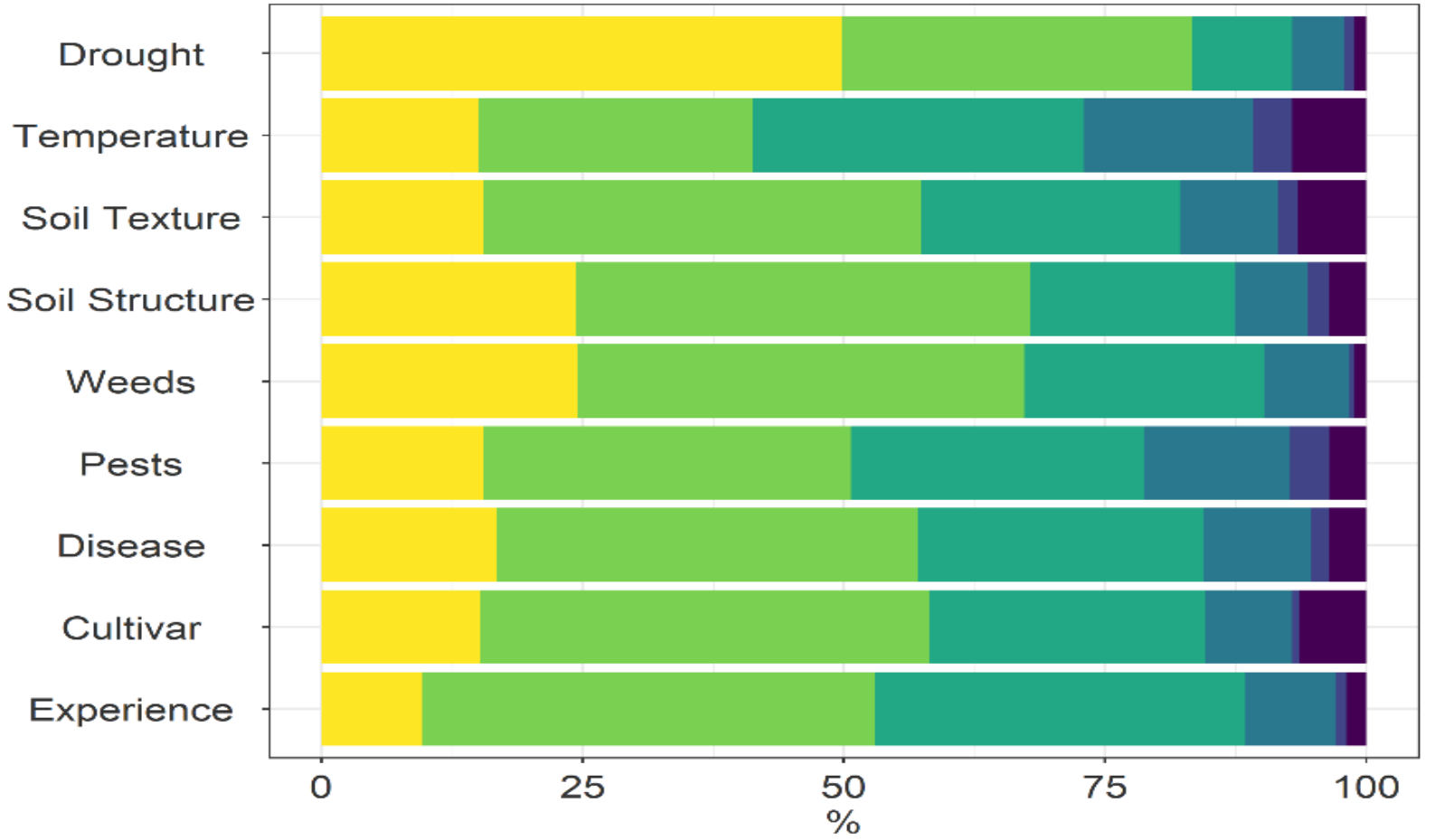
Faba yield t/ha



Survey participants by country

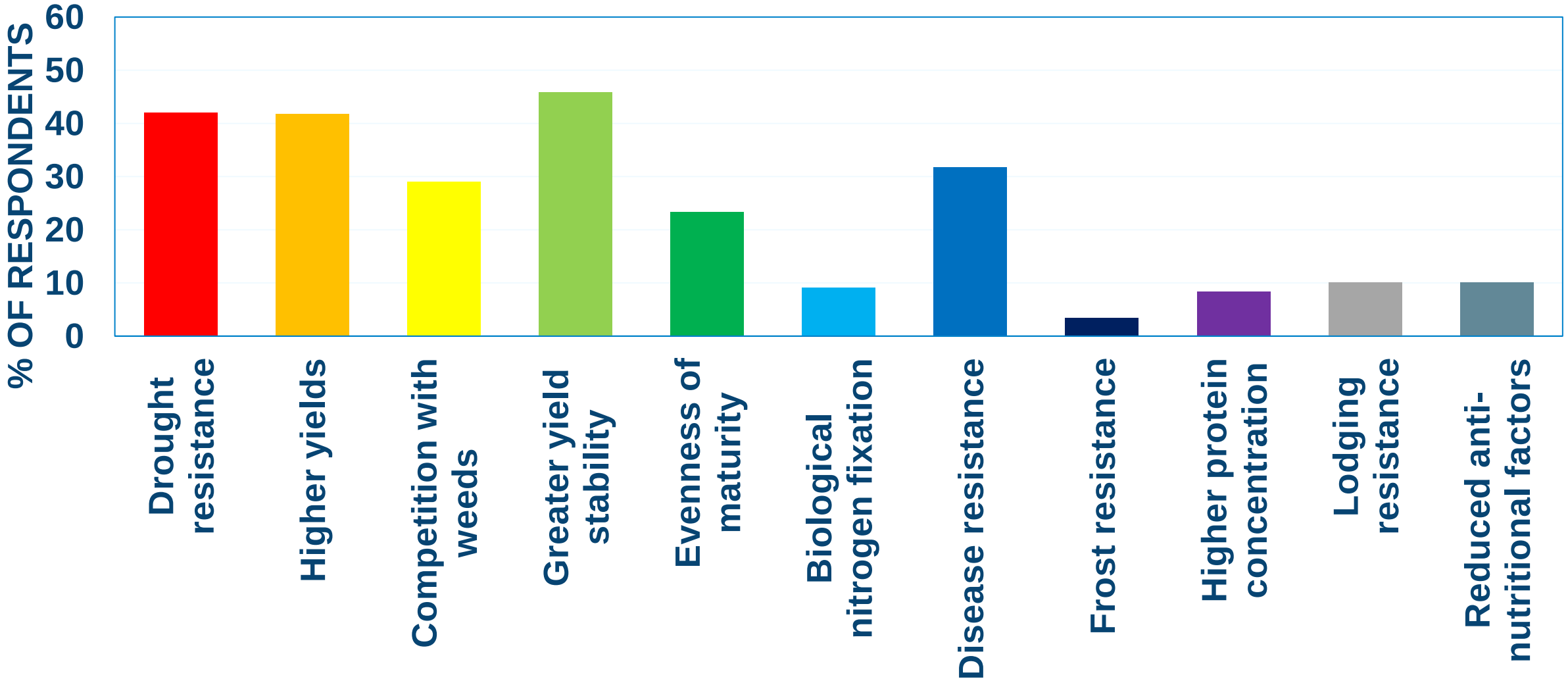


Importance of factors determining faba bean yields according to surveyed growers



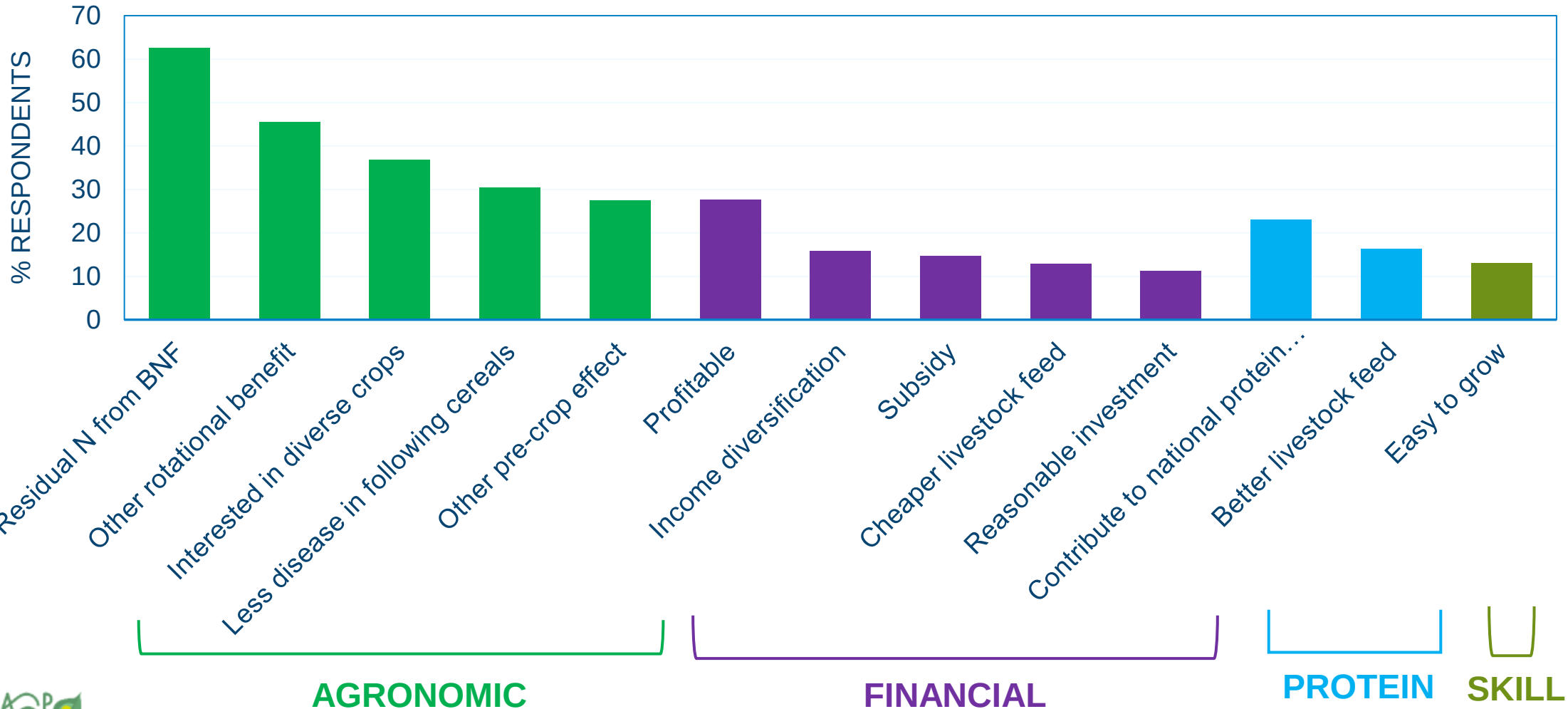
Mouratiadou et al. (In prep)

Main aspects where faba bean cultivar improvement is needed according to surveyed growers



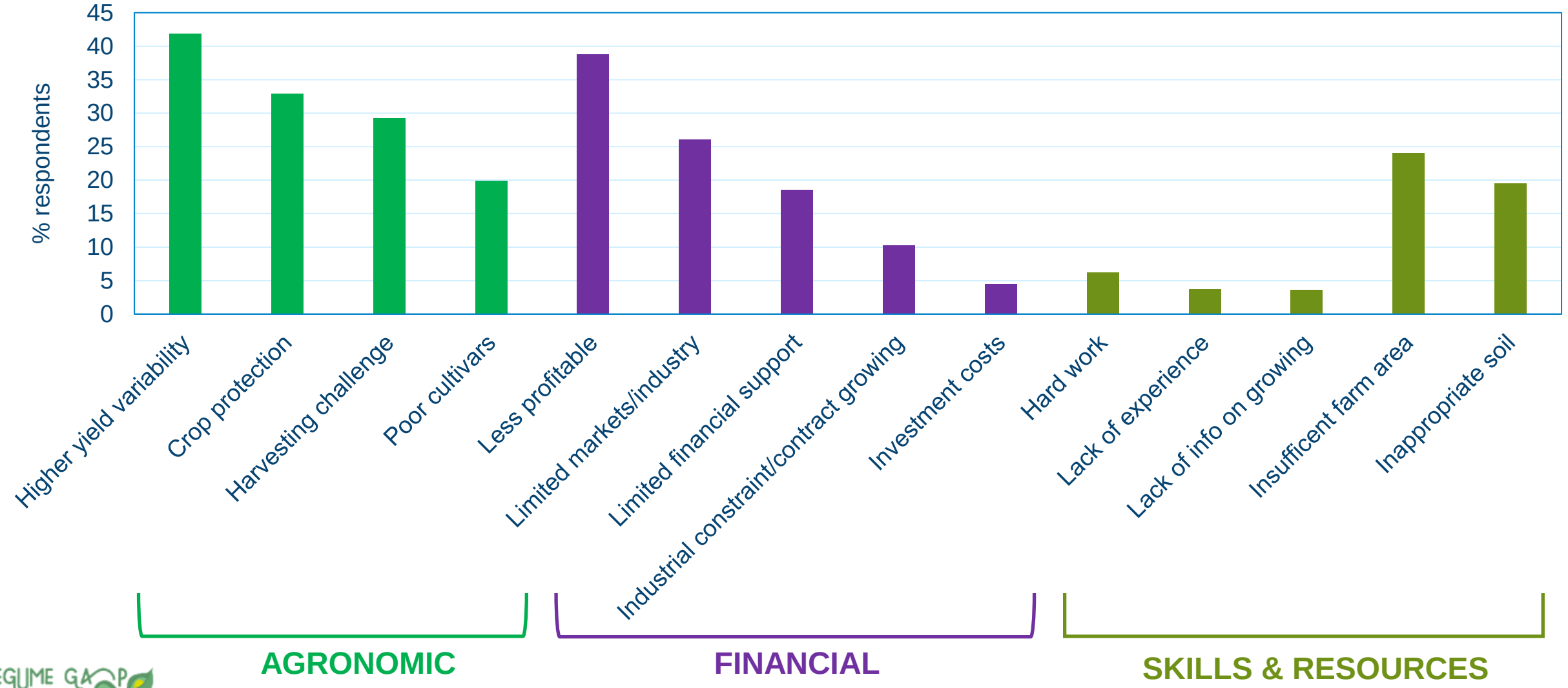
Mouratiadou et al. (In prep)

Four most important reasons for increasing (or maintaining) the current area dedicated to grain legumes in survey farms in the future



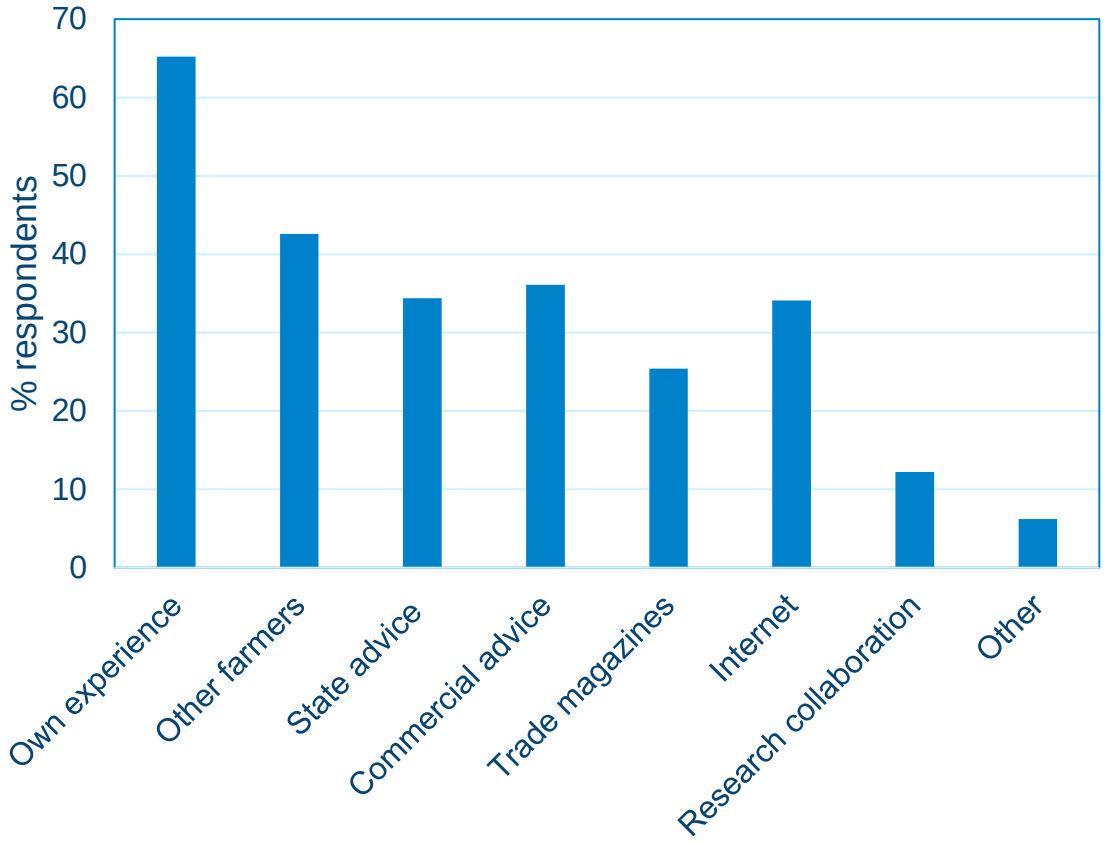
Mouratiadou et al. (In prep)

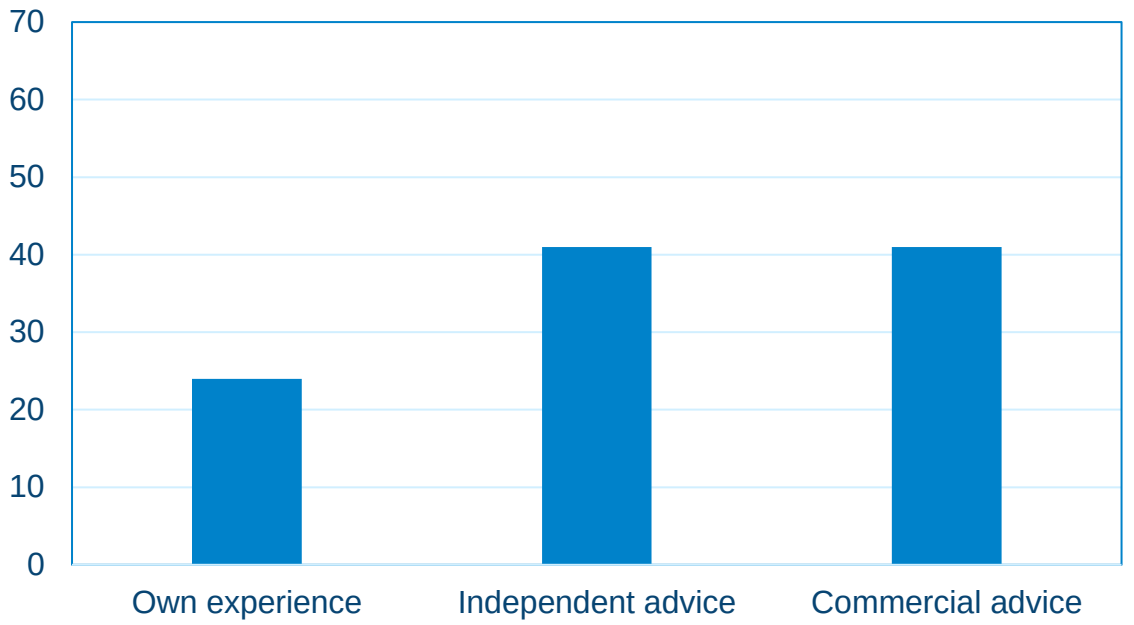
Four most important reasons for decreasing (or maintaining) the current area dedicated to grain legumes in survey farms in the future



Mouratiadou et al. (In prep)

Where do the surveyed growers get advice from?

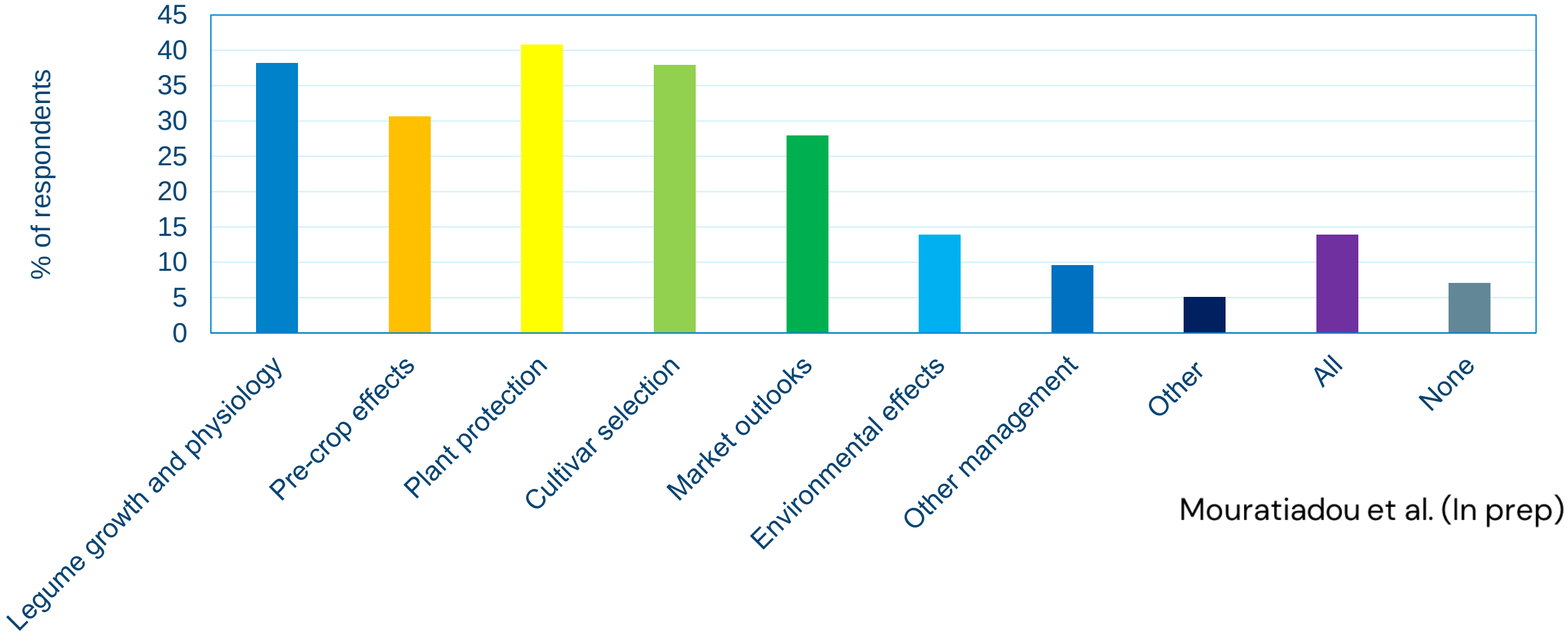




- Legume Gap
- Researcher based survey
- Transnational

- BASF Pulse State of the Nation survey 2020 – commercial base
- UK based
- No state advice
- Independent vs Commercial

What information would surveyed growers like to have more of?



Mouratiadou et al. (In prep)

Take home messages

- Increasing the production of grain legumes in Scotland / UK is complicated!
- Agronomic challenges remain
- Lack of available chemistry is likely going to get worse
    - more agroecological solutions
- Rapid improvements in yield, stress resistance and end-use quality are needed from plant breeding
- Prices of fertiliser and imported protein will influence changes to the system
- The drive for Net Zero and associated dietary change are massive
- We must look at the whole system and not just the crop

Farm Advisory Service
0300 323 0161
advice@fas.scot
www.FAS.scot

Thank you

Acknowledgements : SRUC - C Watson, K Topp, J Baddeley, P Hargreaves, Trials Service; PGRO; Scottish Government RESAS; EU LegumeGAP, ReMIX, IntercropValues, Legume Translated, Legume Futures

https://www.legumehub.eu/

AHDB

SRDP Farm Advisory Service

Scottish Government
Riaghaltas na h-Alba
gov.scot

Legume Futures

Legumes Translated

INTERCROP VALUES

ReMIX
Species mixtures for redesigning European cropping systems

LEGUME GAP

Status: *This version of this Act contains provisions that are prospective.*
Changes to legislation: *There are currently no known outstanding effects for the Agriculture and Rural Communities (Scotland) Act 2024. (See end of Document for details)*

Agriculture and Rural Communities (Scotland) Act 2024

2024 asp 11

The Bill for this Act of the Scottish Parliament was passed by the Parliament on 18th June 2024 and received Royal Assent on 30th July 2024

An Act of the Scottish Parliament to make provision enabling the support of agriculture, rural communities and the rural economy through the creation of a framework for that support; to make provision for continuing professional development for those involved in agriculture and related industries, to make provision in relation to the welfare and identification of animals, to repeal spent and superseded agricultural enactments; and for connected purposes.

PROSPECTIVE

PART 1

OBJECTIVES AND PLANNING

1 Overarching objectives of agricultural policy

(1) For the purposes of this Act, the objectives of Scottish agricultural policy are—

(a) the adoption and use of sustainable and regenerative agricultural practices,

(b) the production of high-quality food,

(c) the promotion and support of agricultural practices that protect and improve animal health and welfare,

(d) the facilitation of on-farm nature restoration, climate mitigation and adaptation, and

(e) enabling rural communities to thrive.

(2) The Scottish Ministers may, by regulations, amend the objectives of agricultural policy under subsection (1).

(3) Regulations under this section are subject to the affirmative procedure.

Agricultural policy from 2025 – what changes?

Steven Thomson, SRUC

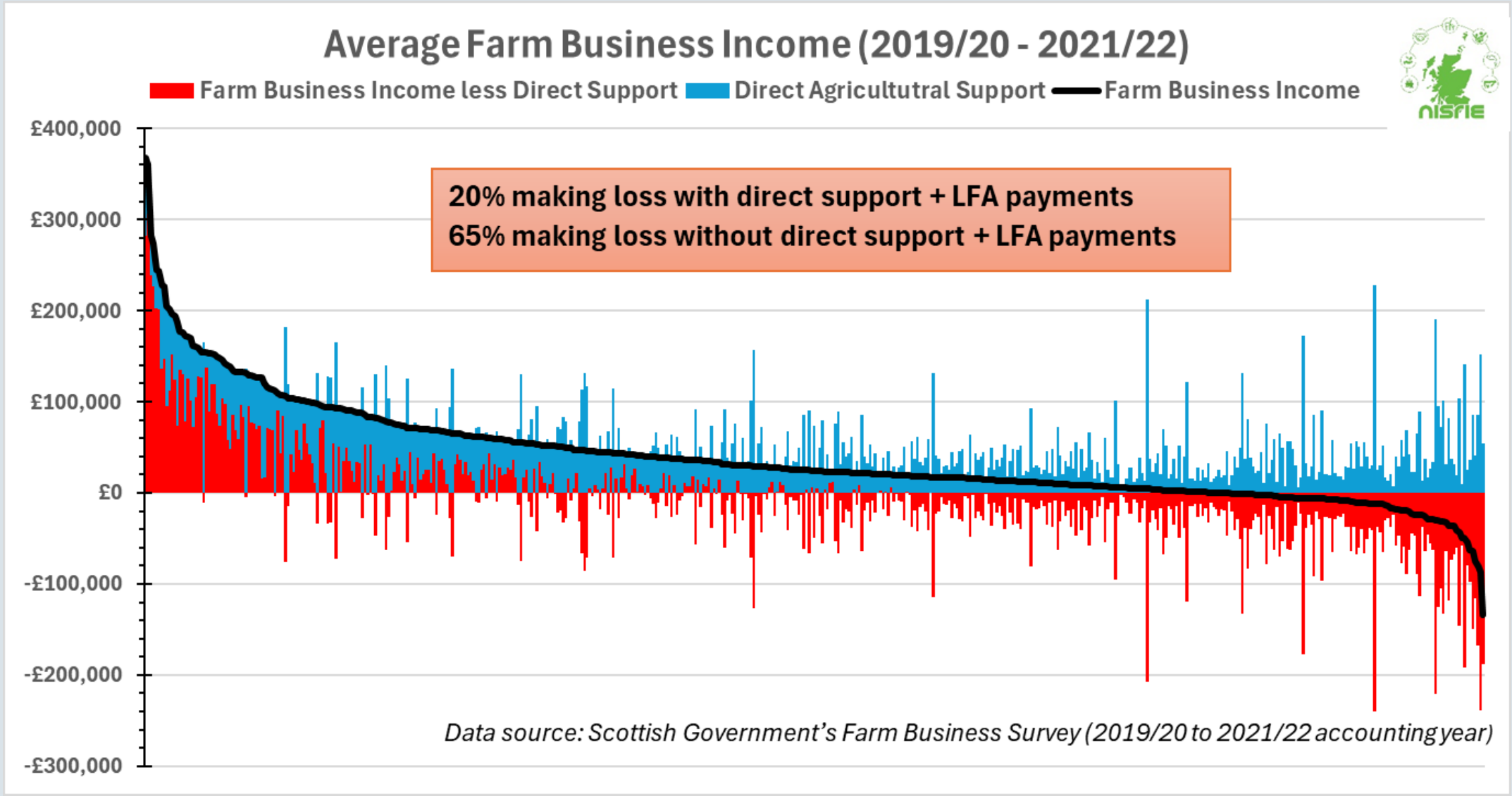
SRDP Farm Advisory Service

www.FAS.scot

advice@fas.scot

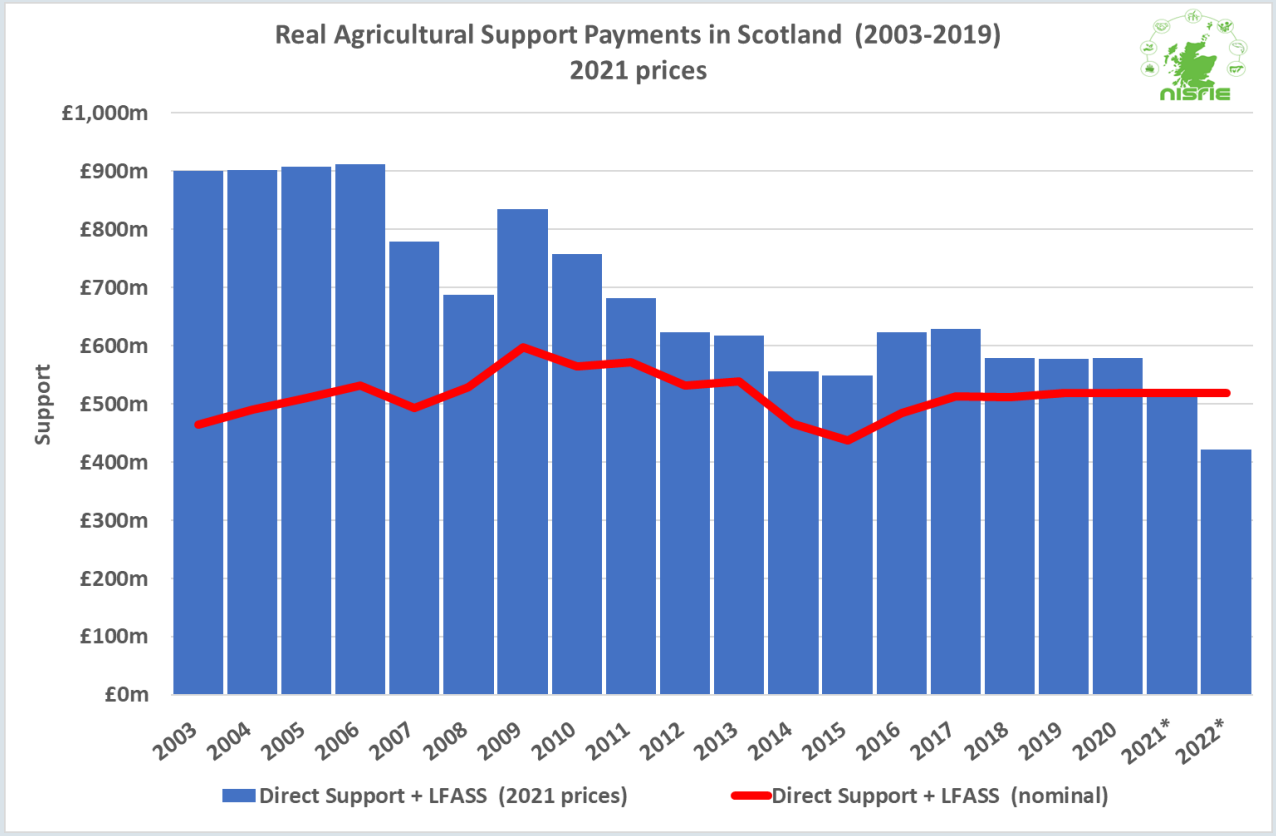
0300 323 0161

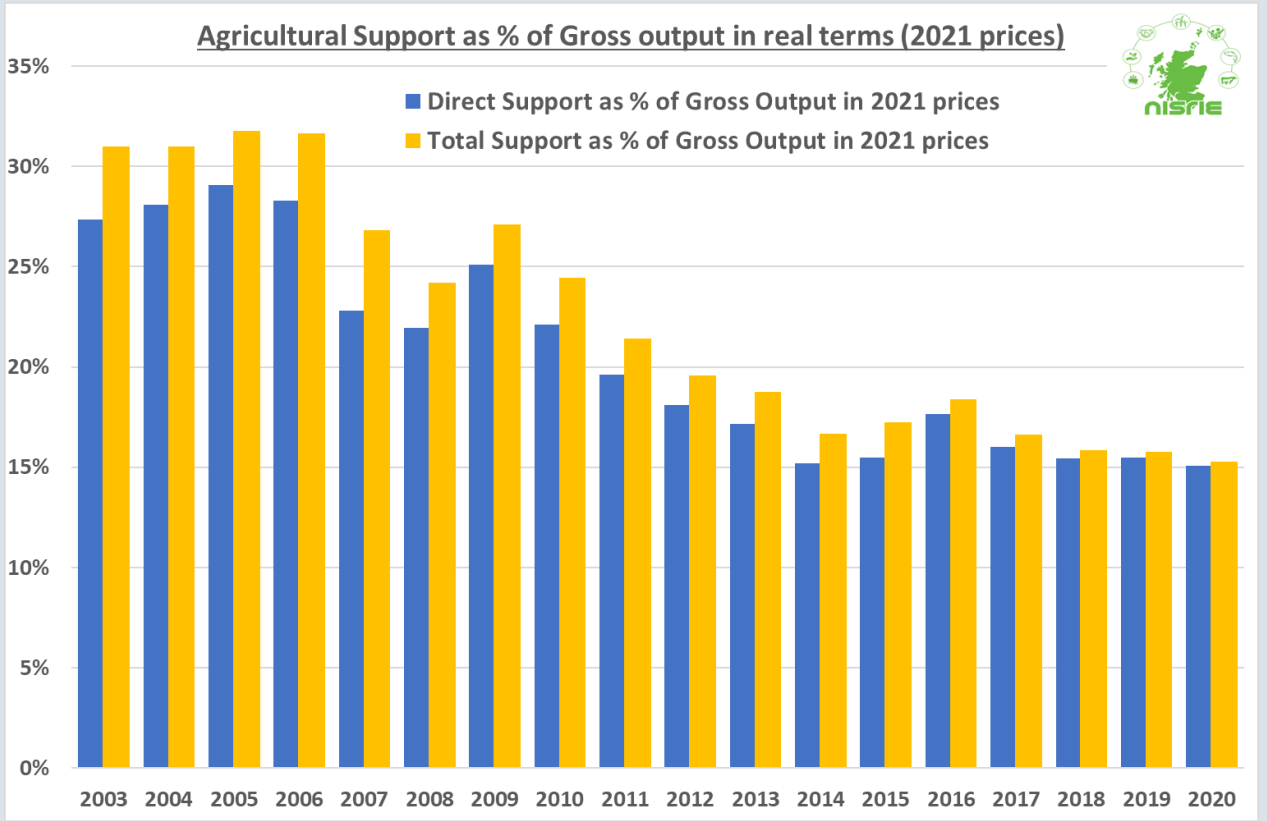
Profitability – underpinned by support



Agric Support – real buying power is falling

More public good is expected from less real terms budgets





Stability & Simplicity (2018-24) meanwhile….

Untangling the new farm support system

Post-Brexit farm payment schemes continue to evolve as direct supports in England dwindle and new systems are proposed in Scotland and Wales

Cedric Porter

29 June 2024 • 7 min read

FarmersGuardian™

England is rapidly phasing out direct payments

- Delinked payments – BPS that averaged £50k in 2020-22 will only be worth £7,200 in 2025
- Capital grants and environmental payments replacing direct support

'Transition' farm support for Northern Ireland to start in 2025

FARMERS WEEKLY

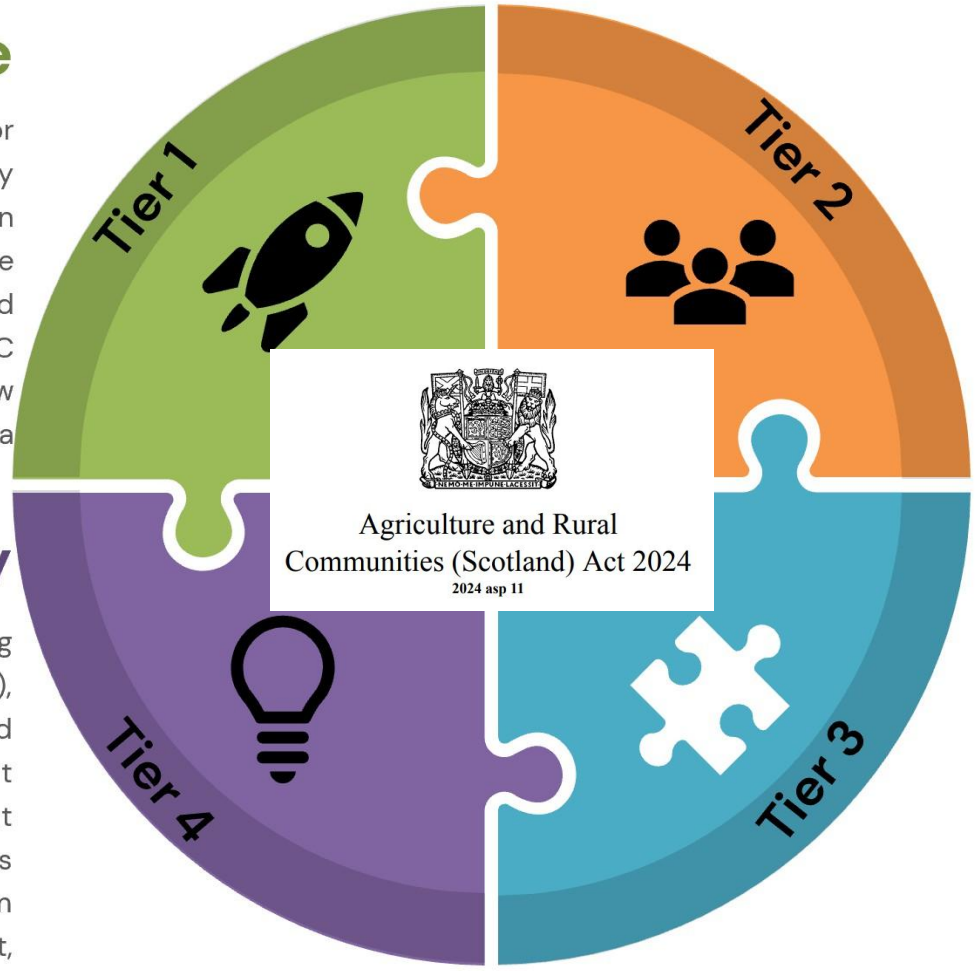
Beyond 2026 - new support Framework

Base

Universal, entry-level payment for undertaking agricultural activity whilst meeting minimum production standards to protect the environment, animal health and welfare and ensure Fair Work. GAEC and SMR standards apply with new entry level conditions in the form of a Whole Farm Plan.

Complimentary

Provision of support for Continuing Professional Development (CPD), advice, knowledge exchange and linkages to wider land management support from Scottish Government officials and/or public partners. This includes things like the Monitor Farm Programme, an AKIS, CLLD support, etc.



Enhanced

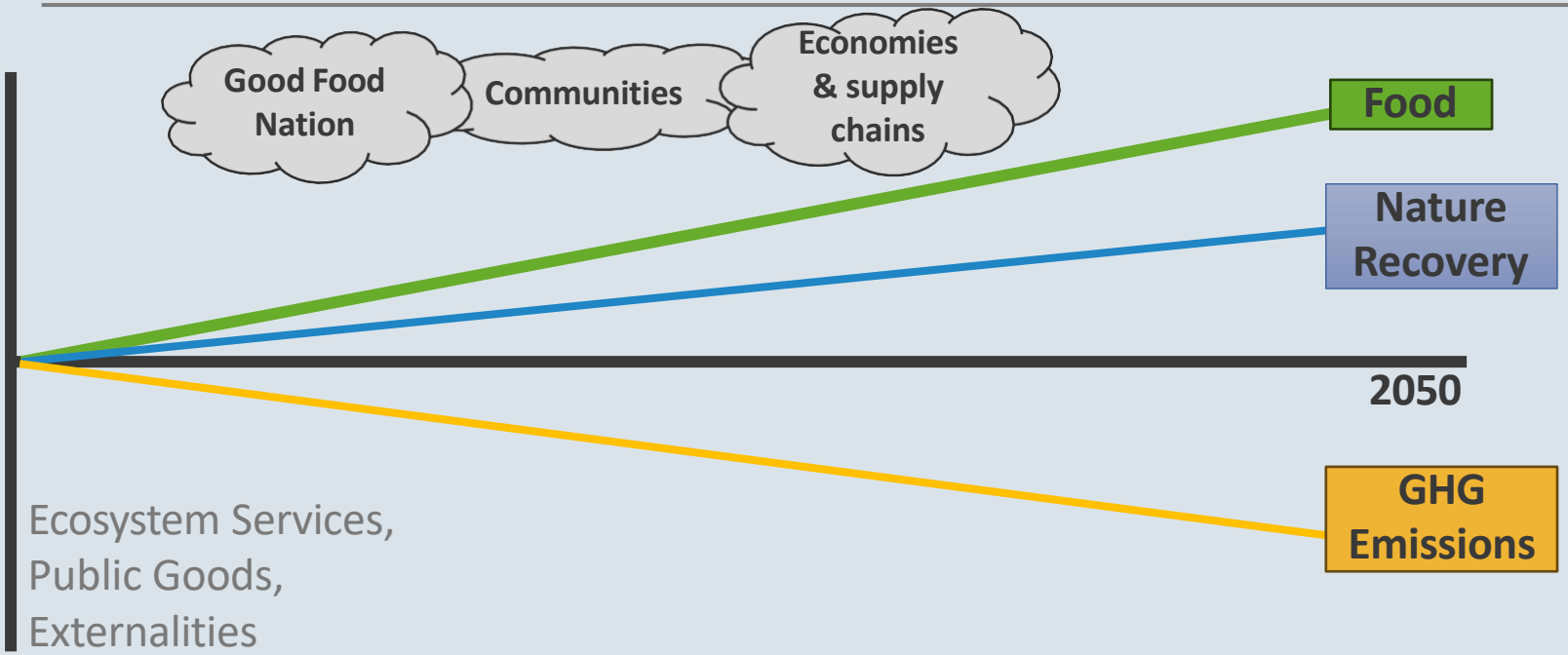
Universally accessible payment that supplements Base, for applicants delivering Base and undertaking further activity for nature and climate improvement practices, including recognition of wider land management. A list of illustrative conditional measures have been published

Elective

Competitive or non-universal range of payments for 'specific nature and / or climate undertakings' and other elements relating to the Vision for Agriculture's policy outcomes. It is unclear if there all, or any of the measures will be dependent on undertaking Base and / or Enhanced.

Long-term future scheme design & details remain in development – 'Rural Support Plan'

Policy dilemma – balance & trade-offs?



- Finding balance is difficult & consumes time – especially <u>if consensus is sought</u>
- <u>More being asked</u> from static / declining budget
- Transition decisions can be disruptive – can lead to <u>policy paralysis</u>

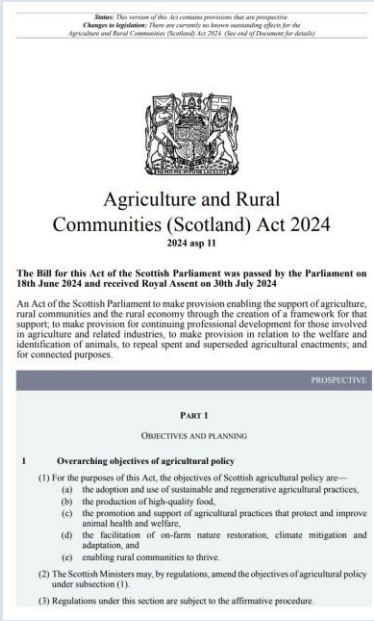
ARC (Scotland) Act & 2023 Budget

- **Objectives**
  - adoption and use of **sustainable and regenerative agricultural practices**,
  - **production of high-quality food**,
  - promotion and support of agricultural practices that **protect and improve animal health and welfare**
  - facilitation of **on-farm nature restoration, climate mitigation and adaptation**
  - enabling **rural communities to thrive**

Tier 1 & 2 Type Support	**£550.5m**	**86.0%**
Basic Payment	**£282.0m**	44.1%
Greening	**£142.0m**	22.2%
Young Farmers Scheme	**£1.0m**	0.2%
Common Market Organisation	**£13.0m**	2.0%
Scottish Suckler Beef Support Scheme	**£40.0m**	6.2%
Scottish Upland Sheep Support Scheme	**£7.0m**	1.1%
Less Favoured Area Support Scheme	**£65.5m**	10.2%
Tier 3 Type Measures	**£69.6m**	**10.9%**
Agri-Environment Measures	**£35.8m**	5.6%
Forestry Schemes	**£0.1m**	0.0%
New Entrants and Young Farmers Support	**£2.0m**	0.3%
Crofting Agricultural Grant Scheme	**£3.4m**	0.5%
Croft House Grant	**£2.3m**	0.4%
Small Farm Grants Scheme	**£1.0m**	0.2%
Food Processing, Marketing and Co-Operation	**£0.0m**	0.0%
National Test Programme	**£20.0m**	3.1%
Agricultural Transformation Fund	**£5.0m**	0.8%
Tier 4 Type Support	**£20.0m**	**3.1%**
Monitor Farm	**£0.4m**	0.1%
LEADER	**£11.6m**	1.8%
Knowledge Transfer and Innovation Fund	**£2.0m**	0.3%
Farm Advisory Service	**£5.0m**	0.8%
Technical Assistance/Scottish Rural Network	**£1.0m**	0.2%
Total	**£640.1m**	

Ongoing Legislation / Parliamentary Process

- **Rural Development (Continuation of Operation) (Miscellaneous Amendment) (Scotland) Regulations 2024**
  - Ensures Pillar 2 type payments can be made in 2025
  - Took 2 attempts to get approval in Rural Affairs and Islands Committee
- **The Rural Support (Improvement) (Miscellaneous Amendment) (Scotland) Regulations 2024**
  - GAEC cross compliance on Peatland (50cm depth & semi-natural habitats)
  - 410-day calving interval
  - Passed by Rural Affairs and Islands Committee but motion raised in Chamber
- **More coming**



Status: This version of this Act contains provisions that are prospective.
Changes to legislation: There are currently no known outstanding effects for the Agriculture and Rural Communities (Scotland) Act 2024. (See end of Document for details)

Agriculture and Rural Communities (Scotland) Act 2024

2024 asp 11

The Bill for this Act of the Scottish Parliament was passed by the Parliament on 18th June 2024 and received Royal Assent on 30th July 2024

An Act of the Scottish Parliament to make provision enabling the support of agriculture, rural communities and the rural economy through the creation of a framework for that support; to make provision for continuing professional development for those involved in agriculture and related industries, to make provision in relation to the welfare and identification of animals, to repeal spent and superseded agricultural enactments; and for connected purposes.

PROSPECTIVE

PART 1

OBJECTIVES AND PLANNING

1 **Overarching objectives of agricultural policy**

(1) For the purposes of this Act, the objectives of Scottish agricultural policy are—
(a) the adoption and use of sustainable and regenerative agricultural practices,
(b) the production of high-quality food,
(c) the promotion and support of agricultural practices that protect and improve animal health and welfare,
(d) the facilitation of on-farm nature restoration, climate mitigation and adaptation, and
(e) enabling rural communities to thrive.

(2) The Scottish Ministers may, by regulations, amend the objectives of agricultural policy under subsection (1).

(3) Regulations under this section are subject to the affirmative procedure.

Whole Farm Plan – from 2025

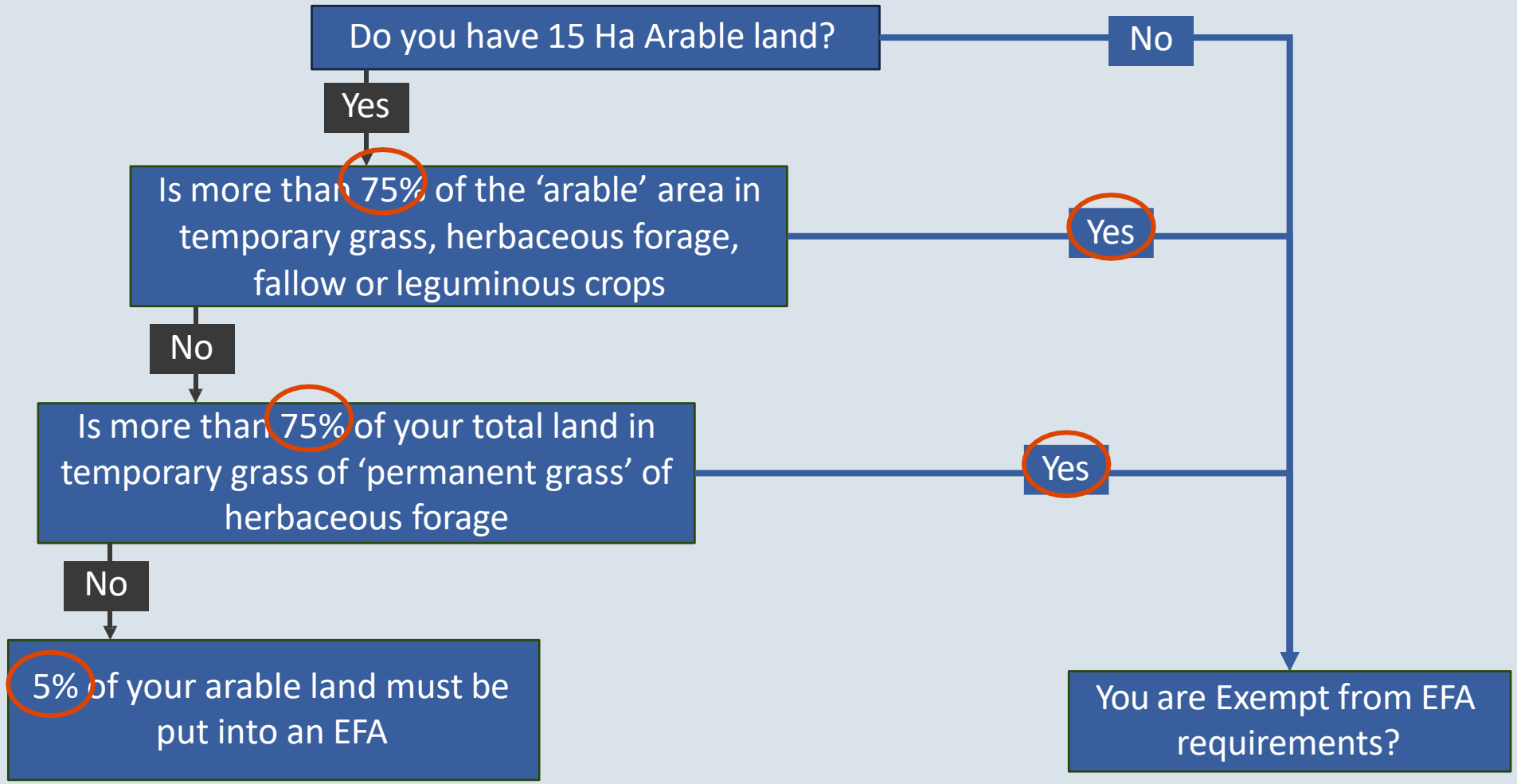
The Rural Support (Improvement) (Miscellaneous Amendment) (Scotland) Regulations 2025

- **Claimants must complete 2 of the following for each claim year:**
  - **(a) animal health and welfare plan** (**annually**)
  - **(b) carbon plan** including mitigation plan (**1-in-5 years**)
  - (c) **habitats report** – map declaring 8 habitats (incl designations) and mapping linear features on permanent land (**1-in-5 years**)
  - **(d) integrated pest management plan** – includes herbicides, nematicides, pesticides, plant growth regulators, and slug control agents (**annually**)
  - **(e) soil report** (pH, SOC, P, K) (**1-in-5 years**)

‘Greening’ Ecological Focus Area beyond 2026?

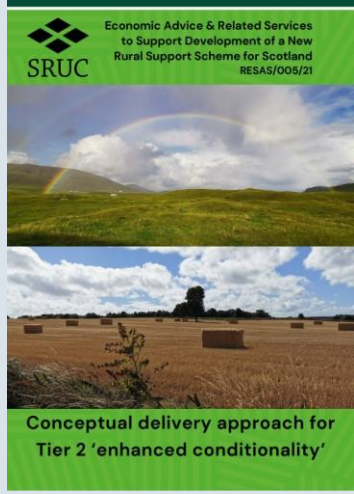
Please note that no policy decisions have been made at this stage

Enhanced Conditionality 2026
-Changes to crop EFA?
-New Grassland EFA-type conditions?
-Adjust Greening budget %?



Greening Payments: EFA a vehicle for area-based conditionality?

Supporting documents - New Rural Support Scheme development - evidence: outputs summary - gov.scot



Based on SRUC analysis & interpretation of SG data

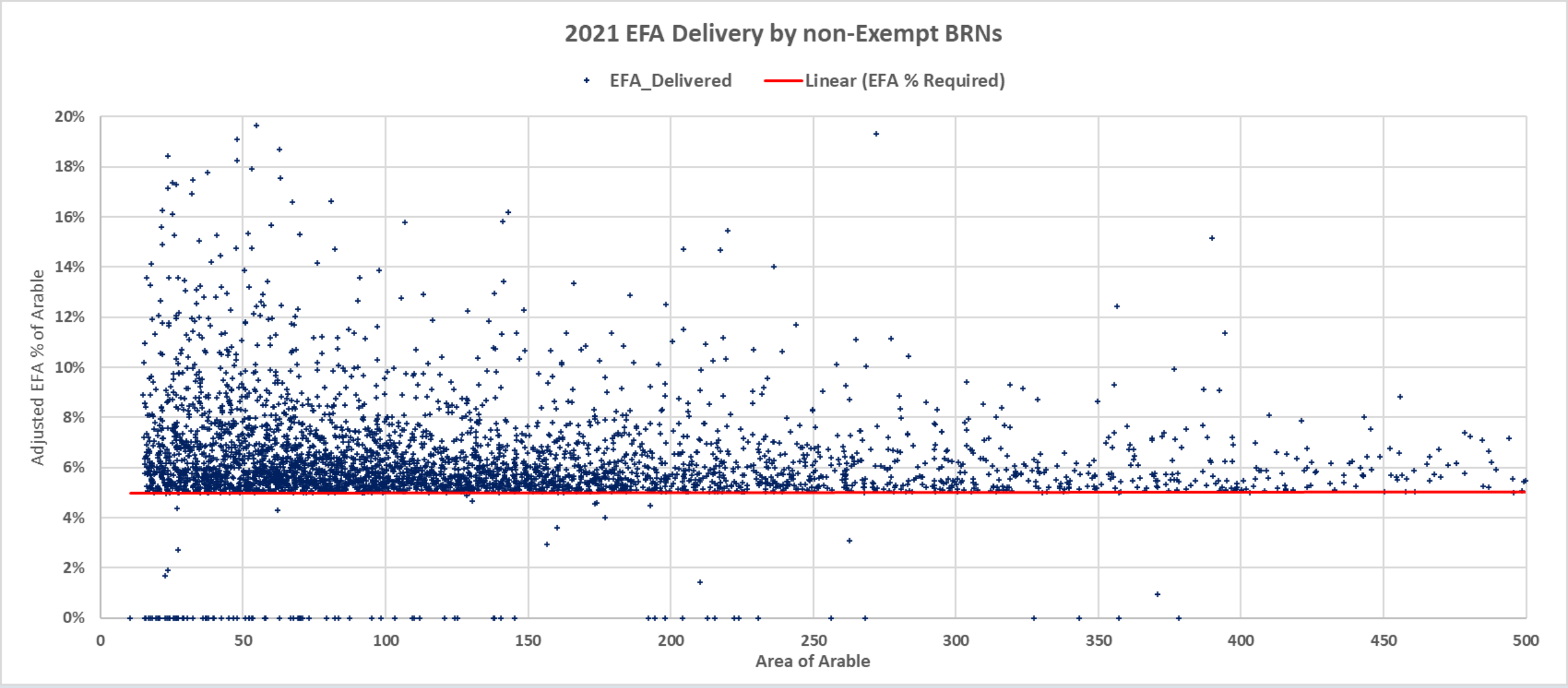
Claimed 2021	Ha	Greening Payments	% Grass & Rough Grazing
BPS Region 1 Ha	1,664.3k	£123.5m	56%
BPS Region 2 Ha	845.4k	£10.2m	98%
BPS Region 3 Ha	1,400.1k	£5.5m	99%

33.5% of £424m BPS + Greening

"Weak" greening – but new peatland GAEC & Muirburn rules

EFA Status	Businesses	'Arable' Ha	Temp Grassland Ha	Permanent Grassland & Rough Grazing Ha
Exempt - No Arable	8,557	0.0k	0.0k	1,599.5k
Exempt - 15Ha	2,632	16.0k	9.0k	557.4k
Exempt – Arable TGRS etc	23	1.0k	0.4k	0.8k
Exempt - Grass	1,650	101.6k	49.0k	549.1k
Exempt – Both Grass & TGRS etc	718	28.9k	25.4k	250.7k
Exempt - Organic	161	10.8k	6.5k	33.6k
EFA Required	**3,776**	**565.2k**	**66.4k**	**198.4k**
Total	**17,517**	**723.5k**	**156.7k**	**3,189.5k**

Already over-delivery by many @ EFA 5%



Regional Choices - EFA measures

- What other measures should / could be usefully included in cropping that could benefit nature / mitigate or adapt to climate change?
- Are the weightings / rules right?

	Fife	Highland	Lothian	NE Scotland	Scottish Borders	Tayside	Scotland
Total EFA Area Required	**2.7k**	**1.6k**	**2.3k**	**9.7k**	**3.5k**	**6.2k**	**27.9k**
EFA on farm claimed area	**4.3k**	**2.9k**	**3.3k**	**14.2k**	**3.6k**	**9.0k**	**40.3k**
EFA adjusted area	**3.4k**	**2.0k**	**3.1k**	**12.1k**	**4.5k**	**7.7k**	**35.1k**
% of EFA adjusted area							
EFA Catch Crop	5.1%	7.1%	3.9%	5.9%	2.7%	4.2%	5.2%
EFA Fallow	57.5%	67.5%	24.8%	65.1%	23.6%	54.7%	53.0%
EFA Green Cover	11.5%	13.1%	13.2%	6.2%	5.8%	9.7%	8.5%
EFA Hedge 100%(m)	3.6%	0.6%	16.4%	4.9%	19.8%	5.7%	7.7%
EFA Hedge 50%(m)	1.5%	0.2%	4.6%	0.2%	4.8%	1.1%	1.6%
EFA Margins	19.6%	10.6%	35.4%	17.5%	43.1%	23.9%	23.4%
EFA Nitrogen Fixing Crops	1.2%	0.9%	1.7%	0.3%	0.2%	0.6%	0.6%

EFA measures

What does the market already require?

Measure	Claimed Ha	Weighting	Adjusted Ha
EFA Catch Crop	6.0k	0.3	1.8k
EFA Fallow	18.6k	1	18.6k
EFA Green Cover	10.0k	0.3	3.0k
EFA Hedge 100%(m)	2,718.1k	0.001	2.7k
EFA Hedge 50%(m)	1,094.2k	0.0005	0.5k
EFA Margins	5.5k	1.5	8.2k
EFA Nitrogen Fixing Crops	0.2k	1	0.2k
Total	**40.3k**		**35.1k**

- **If grassland exemptions thresholds are increased / removed what are the implications for your business**
- **If 5% requirement is increased what are the on-farm choices/decisions?** *Total EFA ££ - less (total) compliance costs?*
- **If Greening budget is increased e.g. to 40% or 50%**
- **If grassland EFA-type measures are to be introduced, what should they be?**

Other ongoing / Needed policy considerations

- **BPS Regions** – are they fit for purpose & future conditionality?
- **LFASS** – needs replaced, but must follow BPS baseline decisions
- **Conditionality** – which model?
  - **Outcomes –** e.g. decrease CO_2e / Increase butterfly population
  - **Actions –** e.g. min or zero tillage / undertake hedgerow condition assessment and undertake remedial action where needed
  - **Conditions -** e.g. min tillage on 30% of cropped, no cutting hedgerows more than every 2 years
- **Coupled support:** further SSBSS conditions / SUSS conditions if kept. Protein crop payment?
- Acknowledgement of **ineligible features** in delivering nature and climate resilience?
- **Tier 3 & 4 support** – what where when?
- **Capping / redistribution / small-recipients**?

Farm Advisory Service
0300 323 0161
advice@fas.scot
www.FAS.scot

Thank you

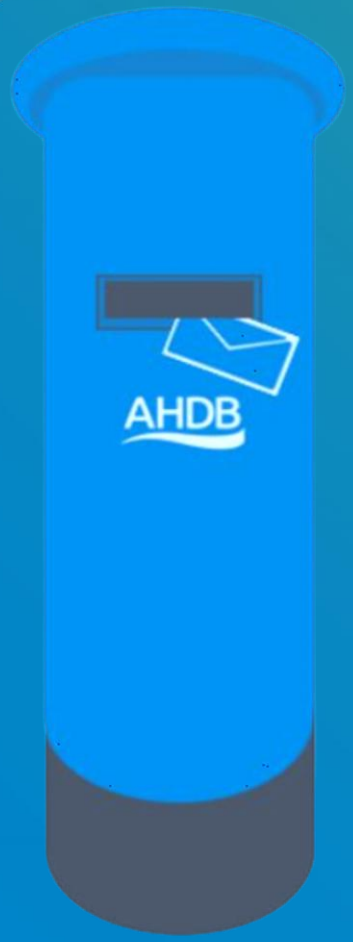
Thanks to the Scottish Government's 2022-2027 Environment, natural resources and agriculture Strategic Research Programme for funding. EFA analysis is ongoing, including through commission in supporting the Agricultural Reform Programme

Up coming events from AHDB in Scotland

4.2.25 NUE Strategies. Seaboard Centre, Black Isle
5.2.25 Natural Capital Kingsmills Hotel, Inverness
10.2.25 Natural Capital Carfraemill Hotel, Lauder
6.3.25 Time management and personal resilience Balmakewan farm shop.

Further details and registration can be found on the AHDB events webpage.

What research do **you** want to see?



- Keeping **levy payers** at the front & centre of research investment
- Ensure we keep answering the **most pressing questions** facing growers
- Want do **YOU** need to know to support your business?
- **Anyone** can submit an idea to the **'Letterbox'**

Email: research.ideas@ahdb.org.uk

Submit your research ideas now

Join the Recommended Lists (RL) team

Are you passionate about variety development and the future of cutting-edge crop variety trials?

The RL crop committees:

- Agree definitions for recommendation
- Select varieties for trial
- Propose new varieties to add to the RL

Web: ahdb.org.uk/rl
Email: rl@ahdb.org.uk
Phone: 024 7669 2051

Current vacancy:
A grower for the Oilseeds Crop Committee

2025/26 Recommended Lists

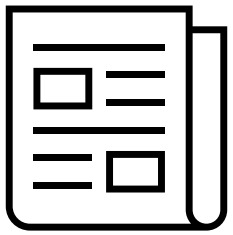
NOW ONLINE!

- New Group 1 winter wheat
- Two new high-yielding Group 3 winter wheat
- Increased focus on disease specs and untreated yields
- Net blotch ratings for spring barley
- Influx of BYDV resistant/tolerant varieties

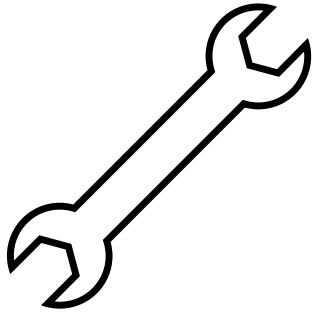
Find full results tables for all crops at **ahdb.org.uk/rl**

BOOKLET AVAILABLE FROM JANUARY

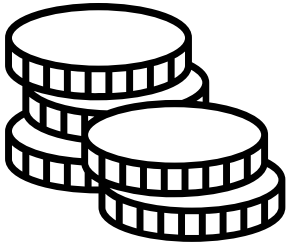
Cereals & Oilseeds:
Market updates



News



Risk management tools



Futures prices

Global prices

ahdb.org.uk/cereals-oilseeds-markets

CEREALS & OILSEEDS

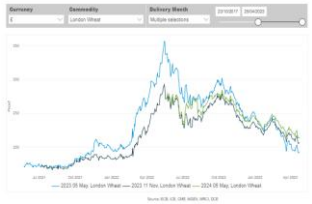
Business tools

FARMBENCH

An easy to use online benchmarking tool that helps to identify where strengths and weaknesses lie within your farm business

ahdb.org.uk/**farmbench**

Market information



The latest industry data, analysis and insights to inform your business.

ahdb.org.uk/**cereals-oilseeds-markets**

Business planning

Information to help you think about where you want to be, and create a plan which gets you there.

ahdb.org.uk/**business-planning**

Machinery costing calculator

Calculate the cost of farm machinery, per hectare or per hour, with the simple calculator.

ahdb.org.uk/**machinery-costing-calculator**

CEREALS & OILSEEDS