

Weed management without herbicides

Strategic Farm Week - Winter 2020 Webinar

Rob Fox, Sarah Cook, Poul Henning Peterson & Richard Meredith

Housekeeping



REC ●



@AHDB_Cereals
#strategicfarm
#SFWeekWinter2020

Strategic Farm Week – Winter 2020

ahdb.org.uk/sfweek-winter-2020

BASIS/NRoSO Points

The BASIS logo, with the word 'BASiS' in a green sans-serif font. The 'i' is lowercase and has a yellow dot.

2 points

Name; BASIS Account No; Postcode

The City & Guilds logo, featuring the text 'City & Guilds' in a black sans-serif font with a red lion rampant icon to the right of the ampersand.The NRoSO logo, with 'NRoSO' in a bold green sans-serif font. Below it, the text 'National Register Of Sprayer Operators' is written in a smaller, lighter green font.

Name; NRoSO Member No; Date of Birth;
Postcode

Format



15:10 – 15:30

Rob Fox, *Squab Hall Farm & Strategic Farm West Host*



15:30 – 15:50

Sarah Cook, *ADAS Research Scientist*



15:50 – 16:05

Poul Henning Petersen, *SEGES Senior Specialist*



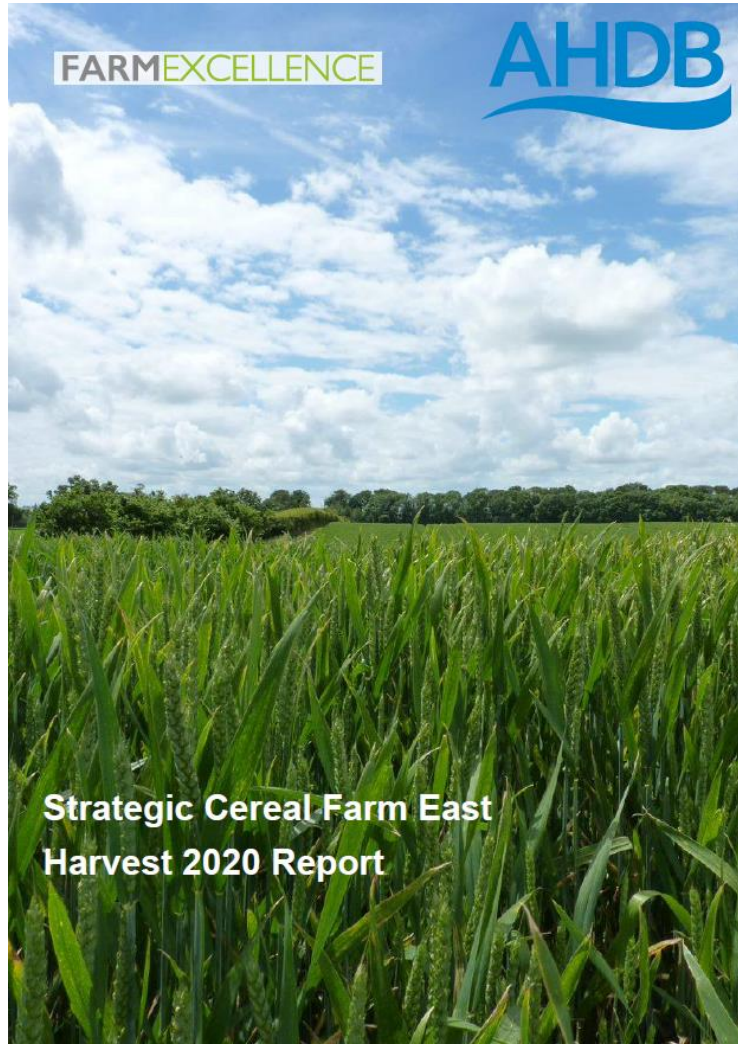
16:05 – 16:30

Panel discussion and questions from the floor



Your host...
Richard Meredith
*Head of Arable
Knowledge Exchange*

Handouts



Strategic Cereal Farm West Harvest 2020 Report

April 2020



Project Report No. 620

Maxi Cover Crop:
Maximising the benefits from cover crops through species selection
and crop management

Bhogal, A.¹, White, C.¹ and Morris, N²

¹ADAS Gleadthorpe, Meden Vale, Mansfield, Nottinghamshire NG20 9PD

²NIAB, Morley Business Centre, Morley, Wymondham, Norfolk NR18 9DF

This is the final report of a 38-month project (21140009) that started in August 2016. The work was funded by Amazone Ltd, Cousins of Emneth Ltd, Hutchinsons, RAGT seeds and a contract for £230,000 from AHDB.

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AHDB Cereals & Oilseeds is a part of the Agriculture and Horticulture Development Board (AHDB).

Session objective

Understand what we already know about **effective blackgrass management without herbicides** to help make informed decisions at the **Strategic Farm West**, and beyond

Introduction to Weed Management at Strategic Farm West

Rob Fox, Squab Hall Farm and Strategic Farm West Host

The journey with weed management, so far...

- Higher seed rates.
 - Typically 375 - 400 seeds m²
- Competitive varieties
- Variable seed rates
- Spring cropping – no second winter cereal
- Ploughing? Direct Drilling?
- Cleaning Machinery
- Weed mapping and “variable” spraying
- Diminishing chemical availability
- Herbicide resistance
- Stale seed beds



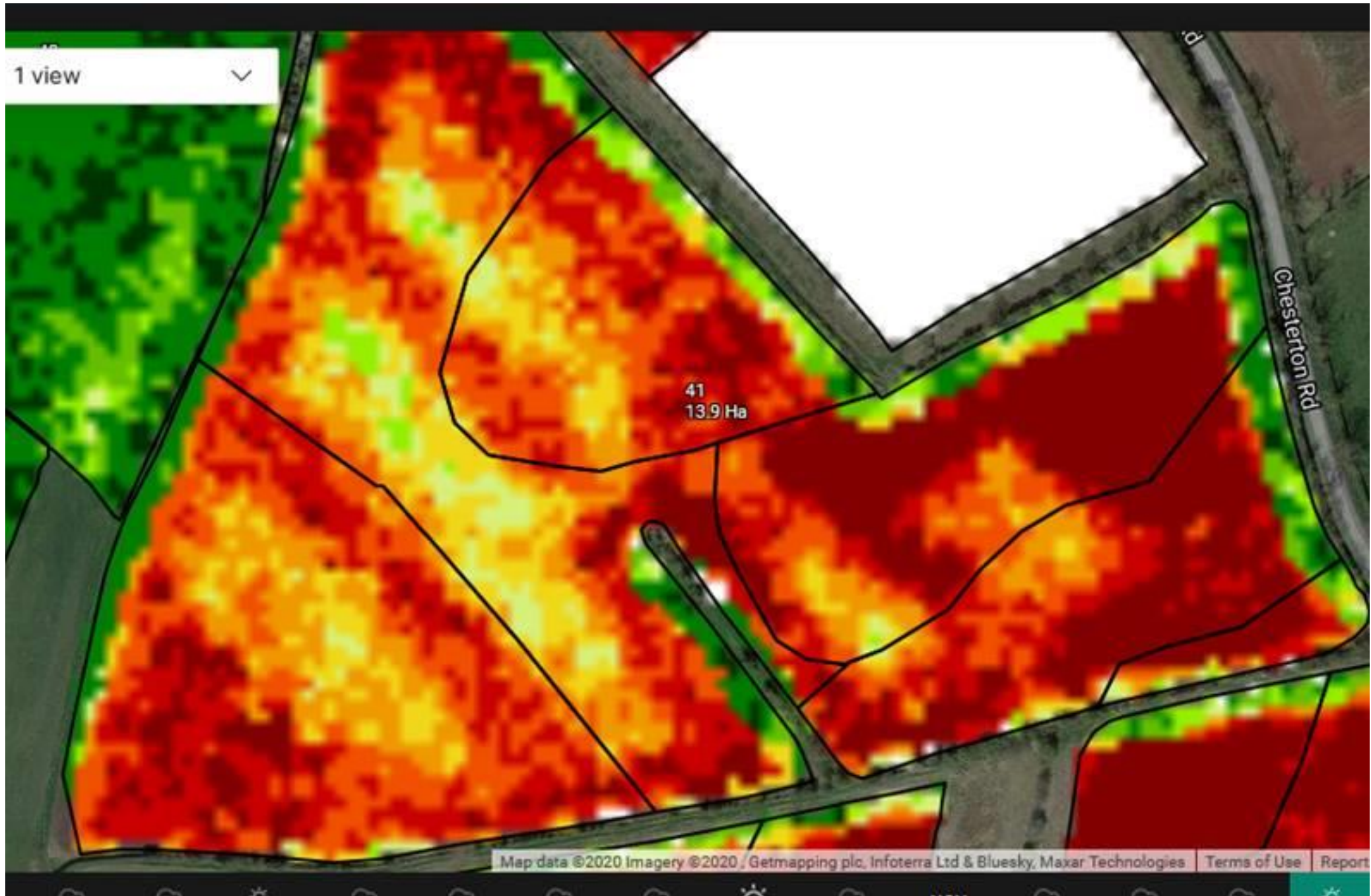


Strategic Farm West

Autumn black-grass trial

- Can we create a stale seedbed without a chemical application?
- What are the alternative options?
- What are the knock on effects of adopting these alternative actions?





The site and the treatment tramlines

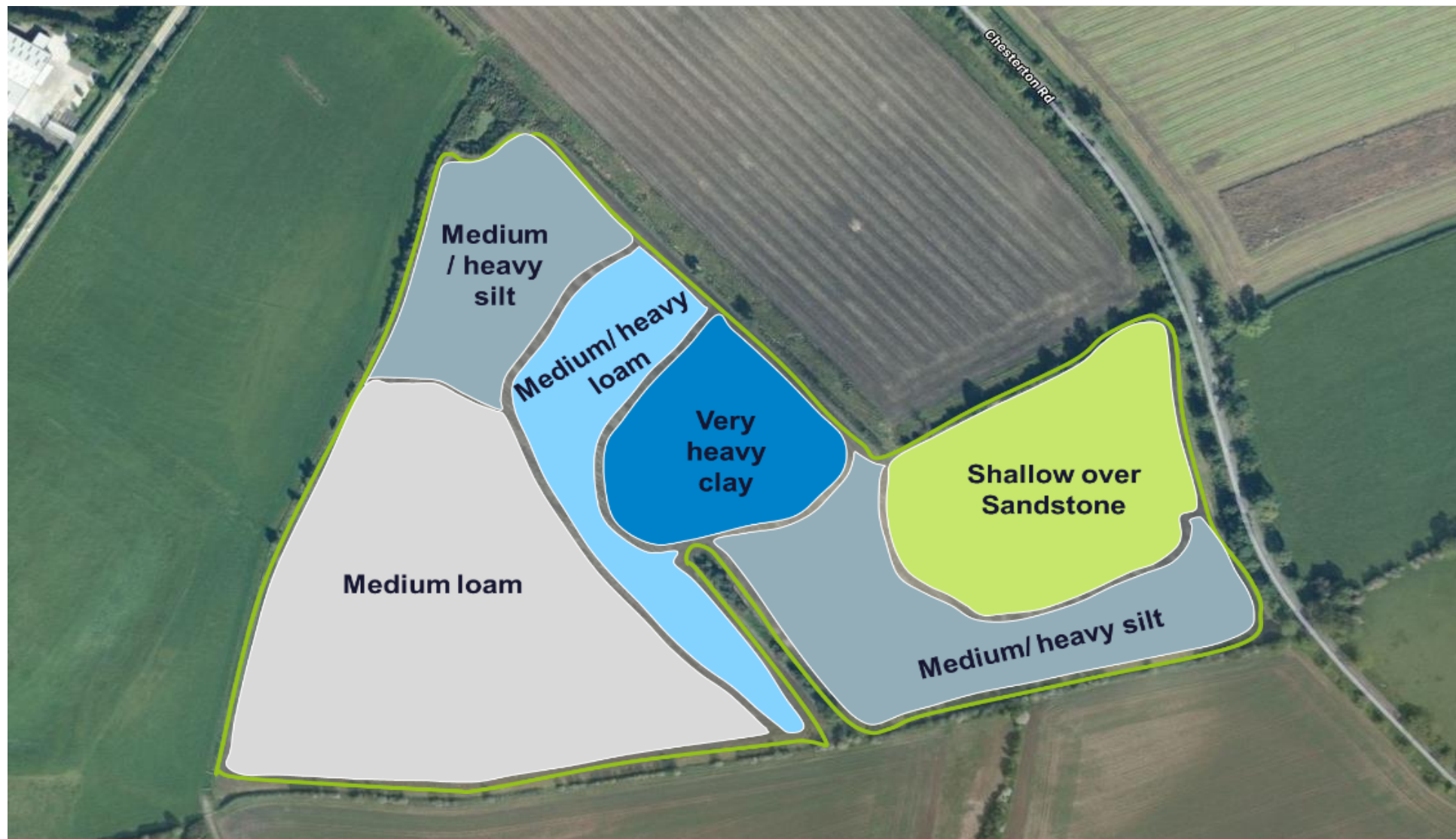
Power harrow + glyphosate (farm standard)

Duck foot spring tine no glyphosate

Vaderstad Culti Quattro no glyphosate



Soil types Field 41

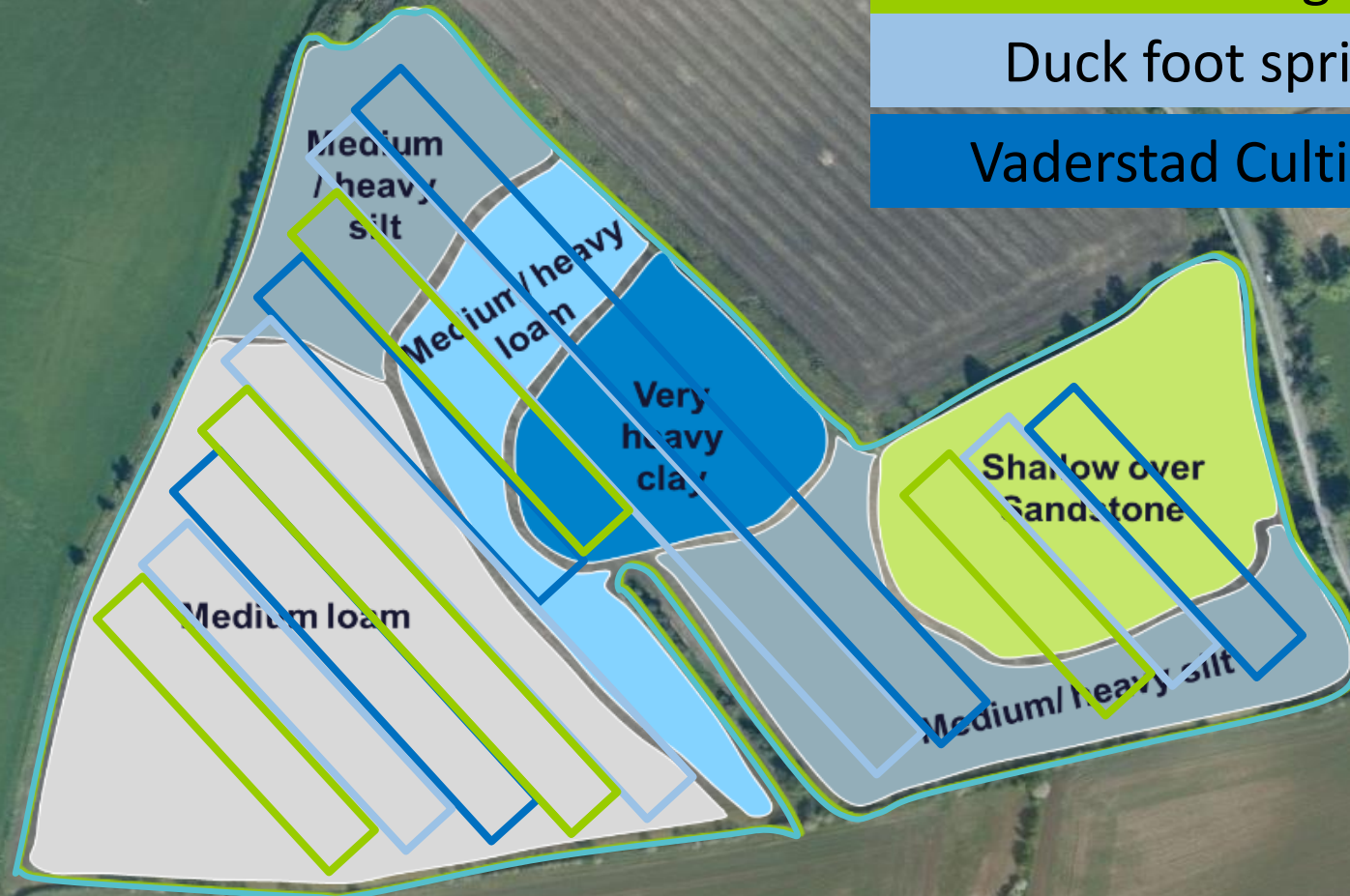


Treatments and soil types

Power harrow + glyphosate (farm standard)

Duck foot spring tine no glyphosate

Vaderstad Culti Quattro no glyphosate



18 September

Blackgrass only found on the headland of tramline nearest road (41 plants) but not in any of the treatment tramlines.

Mainly spring barley volunteers, up to 400/m² but the odd cleaver, charlock and groundsel found.

- Cultivations done 18 September
- Spring tine and Vaderstad repeated on 30 September
- Drilled 1 October



Treatment 1 Power harrow + glyphosate





Treatment 2 Spring tine, No glyphosate



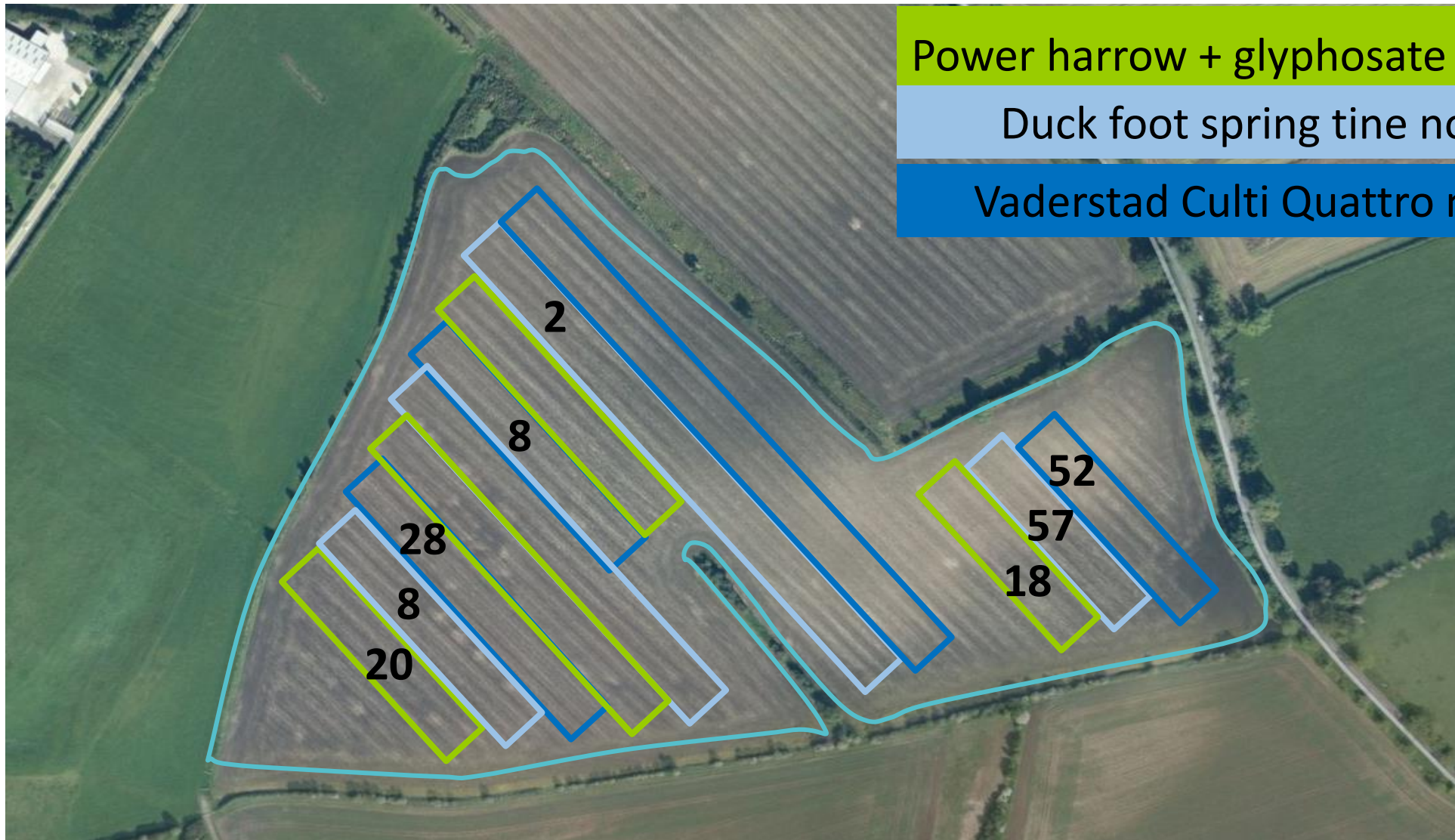


Treatment 3 Vaderstad Culti Quattro, No glyphosate





Cleavers 26 October

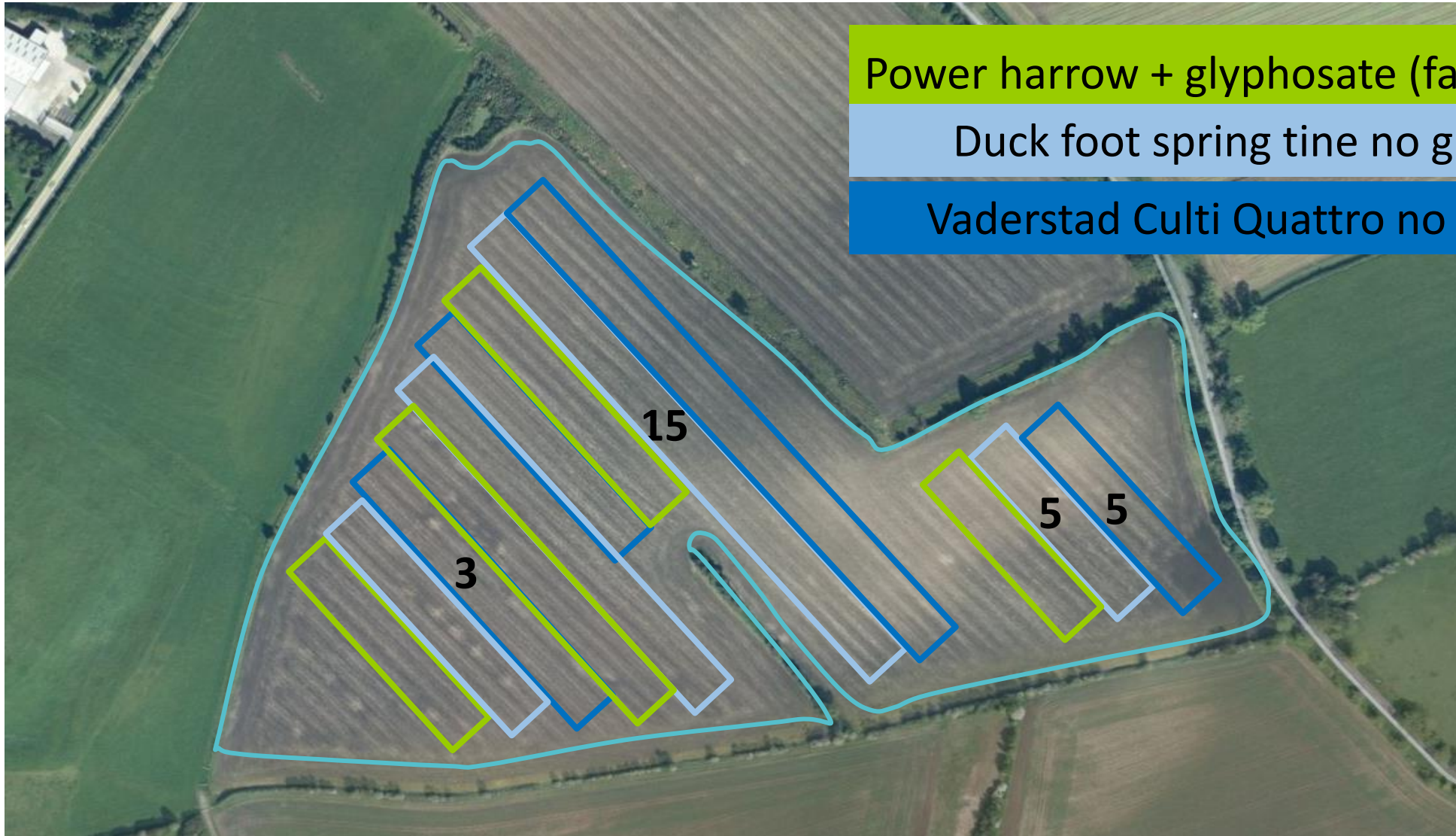


Power harrow + glyphosate (farm standard)

Duck foot spring tine no glyphosate

Vaderstad Culti Quattro no glyphosate

Black-grass 26 October



Power harrow + glyphosate (farm standard)

Duck foot spring tine no glyphosate

Vaderstad Culti Quattro no glyphosate

Can we create a stale seedbed without glyphosate?

Things we can manage	Things we cannot manage
Starting in the right place with a low population and seedbank of black-grass	Weather conditions
An adequate window of opportunity to cultivate between harvest and drilling	Drying – weed death
Timing of cultivation	Temperature – weed germination
Machinery - alternatives, depth of working	

Keep ahead of the weeds

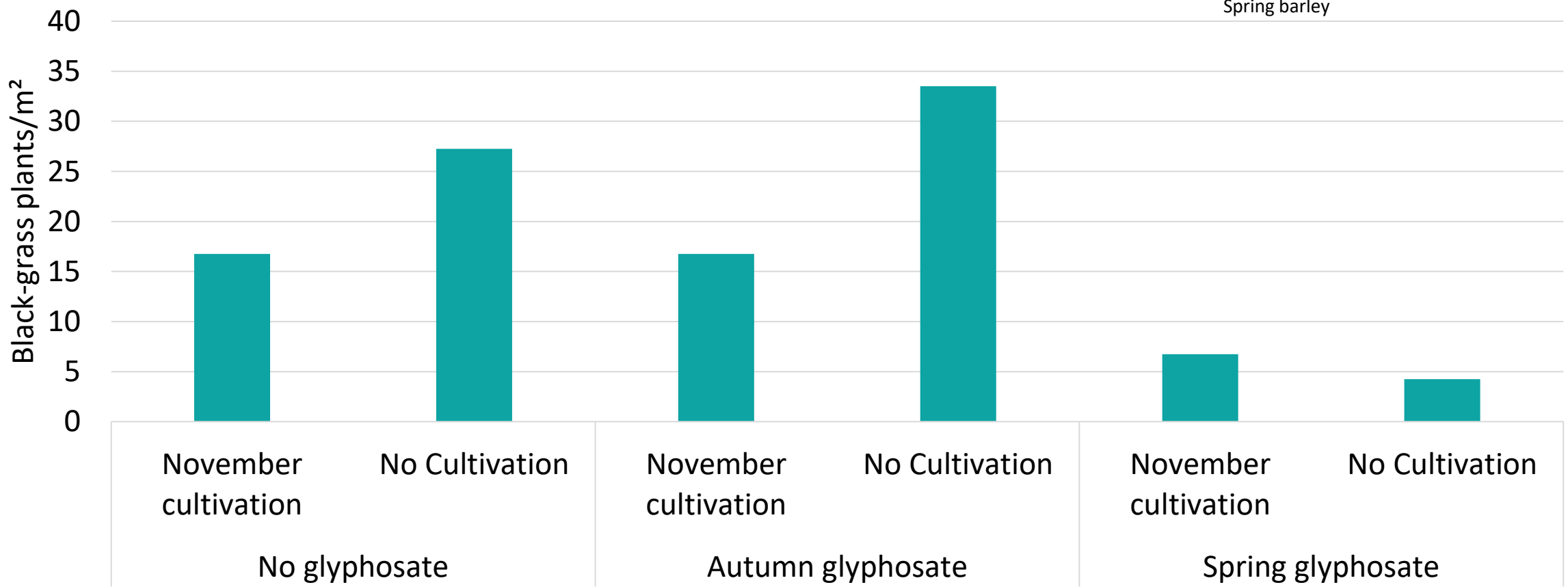


Autumn cultivations are valuable for black-grass control



March black-grass count

AHDB glyphosate project
Spring barley



Weed management without herbicides: lessons from agriculture in Denmark

Poul Henning Petersen, SEGES Senior Specialist

The situation in general

- Public opinion - hardliners
 - Organic farming
 - Less or no pesticides
 - No glyphosate
- Danish EPA
 - Scientific based assessment
- Danish Government and Parliament
 - Supports up to now the scientific based assessment

Plant production without pesticides

- No pesticides in many water protection areas
- Farmers rent land owned by the public where pesticides are not allowed. They manages this land with a short horizon and the way of doing this is not sustainable
- No professional farmers want 'no-pesticide agreements' with water companies

10 years growing cereals without pesticides



Perennial weeds challenges organic farmers



5 years trials with weed control without pesticides

Ploughing and no herbicides

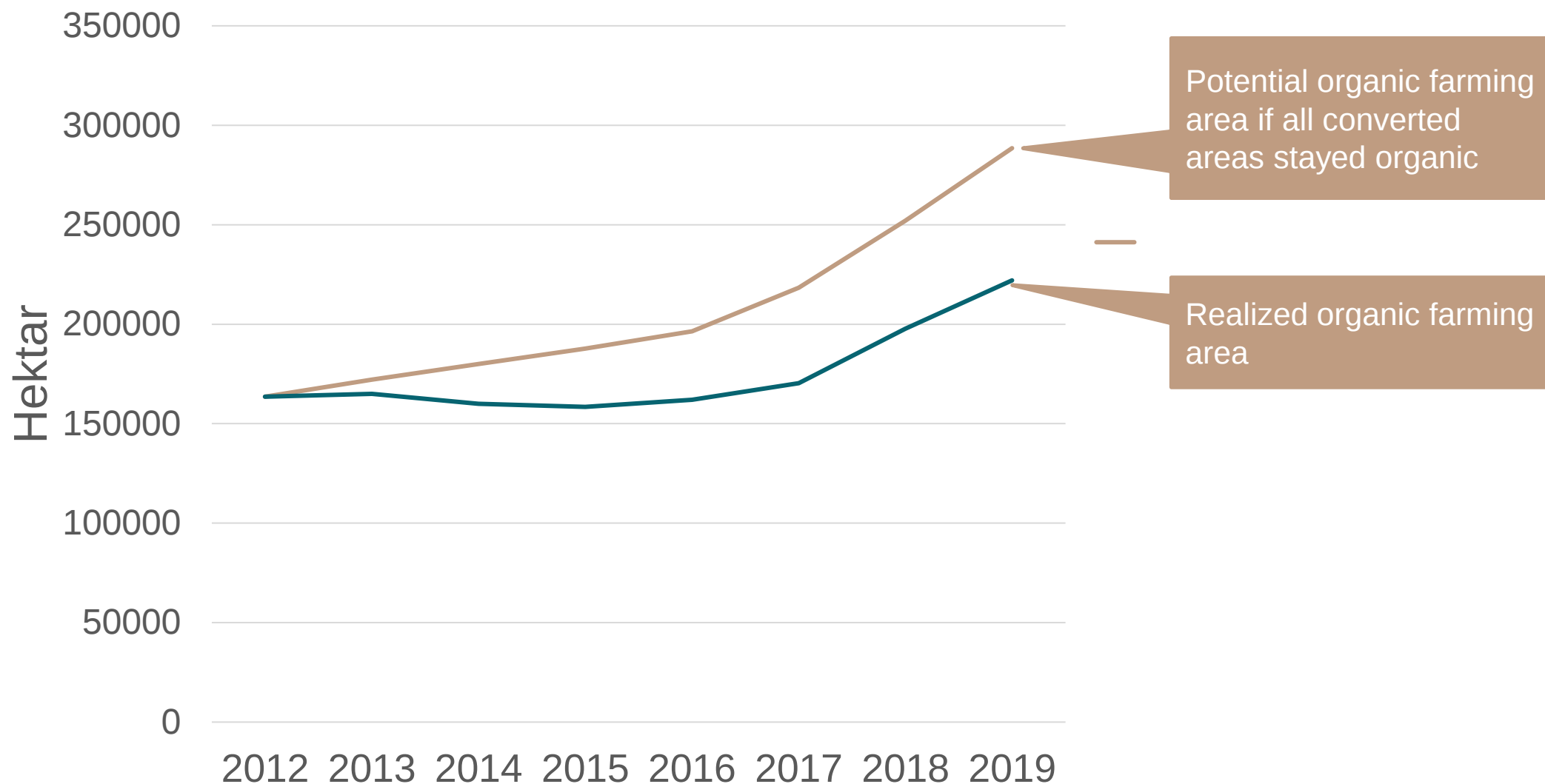


Ploughing and herbicides



Hand weeding of canada thistle the first 2 years and afterwards intensive stubble harrowing.

Organic farming area 2012-2019



Glyphosate

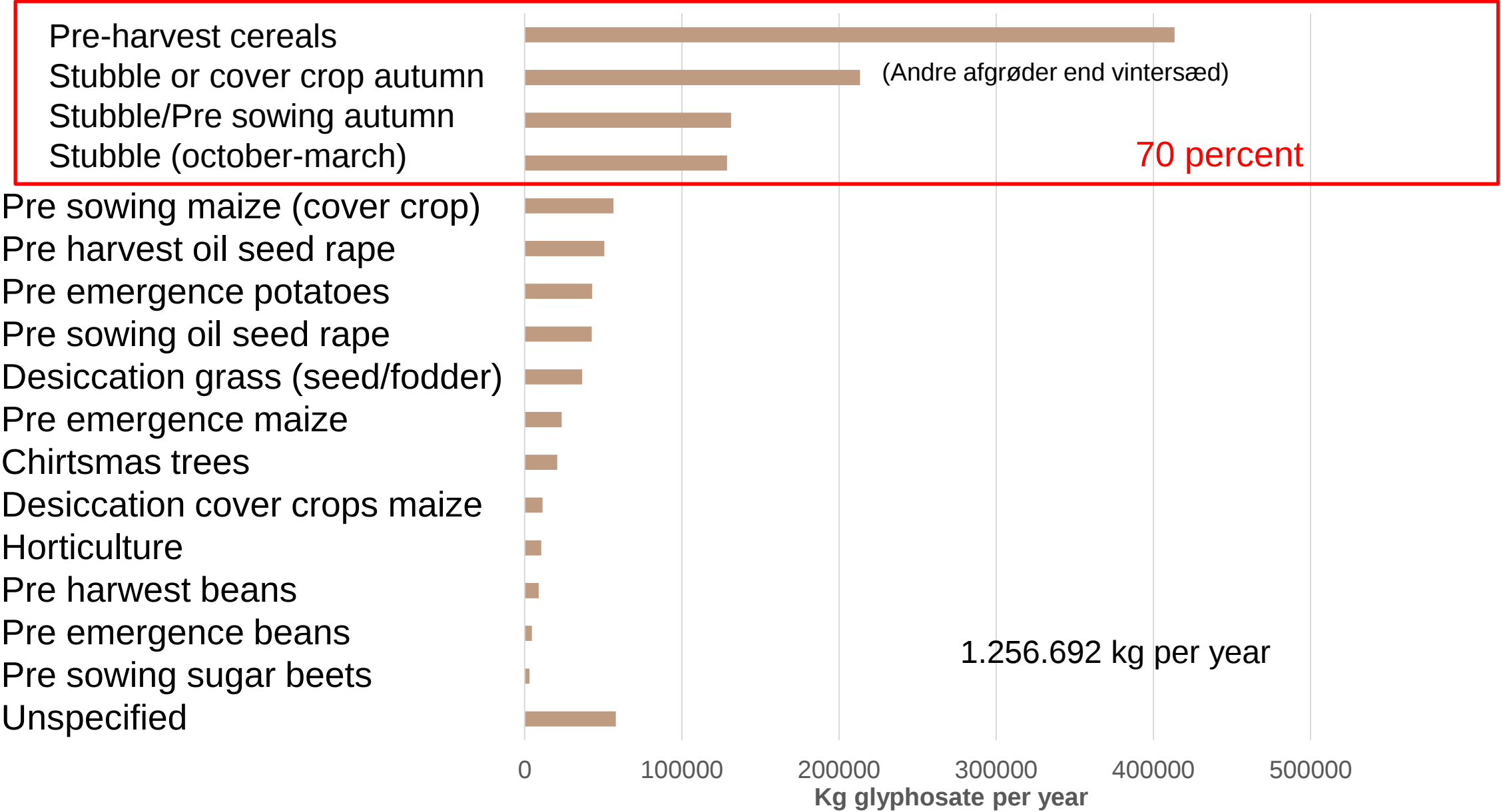
- We are doing some work at SEGES to find ways to grow our crops with less or no glyphosate, but so far without any really good ideas
- Danish Agriculture and Food Council (owner of SEGES) are working on a voluntary initiative to reduce the use of glyphosate (no decision yet)

Alternatives for glyphosate in reduced tillage

25-100 % scenarie



Use of glyphosate in DK



Measures/tools

- Awareness and advice
- Campaigns
- Demo farms
- Demonstration of new technology (e.g. mapping perennials from drone photos and spot spraying)

Brug glyphosat med ekstra omtanke

Politisk er der fokus på, at forbruget af glyphosat stiger i landbruget i disse år. For at bidrage til at beholde glyphosat fremover lyder der fra flere i landbruget en opfordring til at vurdere behovet for glyphosat en ekstra gang. Ikke mindst i disse uger, da 40 procent af forbruget af glyphosat ligger i juli-august. Fra Seges kommer en række anbefalinger.

GLYPHOSAT

AF JØRGEN P. JENSEN

 I Seges er man i gang med at se på forbruget af glyphosat og på at udarbejde en dyrkningsvejledning for hvad der kan kaldes en god og fornuftig brug af glyphosat i planteproduktionen.

I den forbindelse har afdelingsleder for planteværn, Carsten Fabricius opstillet en

række anbefalinger og vurderinger.

- I landbruget anvender vi planteværnsmidler med omtanke og efter faglige vurderinger af behovet. Det gælder også for anvendelsen af glyphosat. Men igennem de senere år er forbruget af glyphosat steget, udtaler han.

Derfor er der behov for at sætte fokus på godt landmandskab for anvendelsen af glyphosat.

- Glyphosatforbruget er gen-

stand for stor bevågenhed, men landbruget kan levere et mindre forbrug gennem målrettet anvendelse ud fra faglige vurderinger, rådgivning og ny teknologi.

Stort forbrug omkring høst

Seges er derfor i gang med at analysere forbruget af glyphosat og vurdere muligheder for at nedsætte forbruget uden økonomisk tab.

- Ud fra Seges opgørelser ligger 40 procent af det samlede forbrug af glyphosat i juli-august. En del af forbruget er målrettet kvikbekæmpelse før høst, men en stor del vurderes også at være høsthjælp i foderafgrøder og vinterraps, oplyser Carsten Fabricius.

- Reduktionen kan primært ske ved at nedbringe brugen som høsthjælp og til nedvisning af stub og efterafgrøder, hvor målet ikke er bekæmpelse af rodukrudt.

Han påpeger, at der er mange faktorer, der har betydning for det stigende forbrug af glyphosat. Det kan være i forbindelse med flere efterafgrøder og mere græsukrudt.

- Anvendelsen af glyphosat vil i fremtiden stadig være et

meget vigtigt redskab for at renholde arealer for rod- og græsukrudt for alle produktionsgrenene i landbruget. Derfor er landbruget nødt til at vise vejen for et mindre forbrug til trods for, at glyphosat er et godkendt middel.

- Målet er at sikre os, at midlet er til rådighed i årene fremover, fastslår Carsten Fabricius.

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Glyphosats bedste opgaver

Seges vurderer stadig, at glyphosat er det bedst egnede middel med en lav pesticidbelastning til en lang række opgaver.

Anvendelsen lever op til IPM-principperne inden for bekæmpelse følgende opgaver:

- Bekæmpelse af kvik og rodukrudt i stub
- Bekæmpelse af kvik og rodukrudt før høst af foderafgrøder
- Ukrudtsbekæmpelse før fremspiring af afgrøder
- Nedvisning af ukrudt før såning – især i pløjefri/CA-systemer
- Høsthjælp til foderafgrøder, hvor ukrudt eller lejesæd giver risiko for høstbesvær og tab af afgrøden
- Høsthjælp til uens modnende foderafgrøder
- Ukrudtsbekæmpelse på udyrkede arealer

Behovsbestemt nedvisning af efterafgrøder med glyphosat

Vurdér behovet for at anvende glyphosat i efterafgrøden. Brug glyphosat, hvor der er rodukruddt eller meget græsukruddt. Ved pløjning giver det ikke mening at nedvisne efterafgrøden alene med det formål at få den til at falde sammen.

Viden om



Fra 20. oktober eller senere afhængig af såtidspunkt for efterafgrøden og efterafgrødetype er det muligt at destruere sin efterafgrøde. Måske overvejer du at anvende glyphosat til nedvisning af den korsblomstrede efterafgrøde, så den hurtigere falder sammen og dermed bliver lettere at pløje ned. Der er dog behov for at fokusere på en mere målrettet anvendelse af glyphosat i efterafgrøderne – er der vitterligt et behov?

25 percent reduction

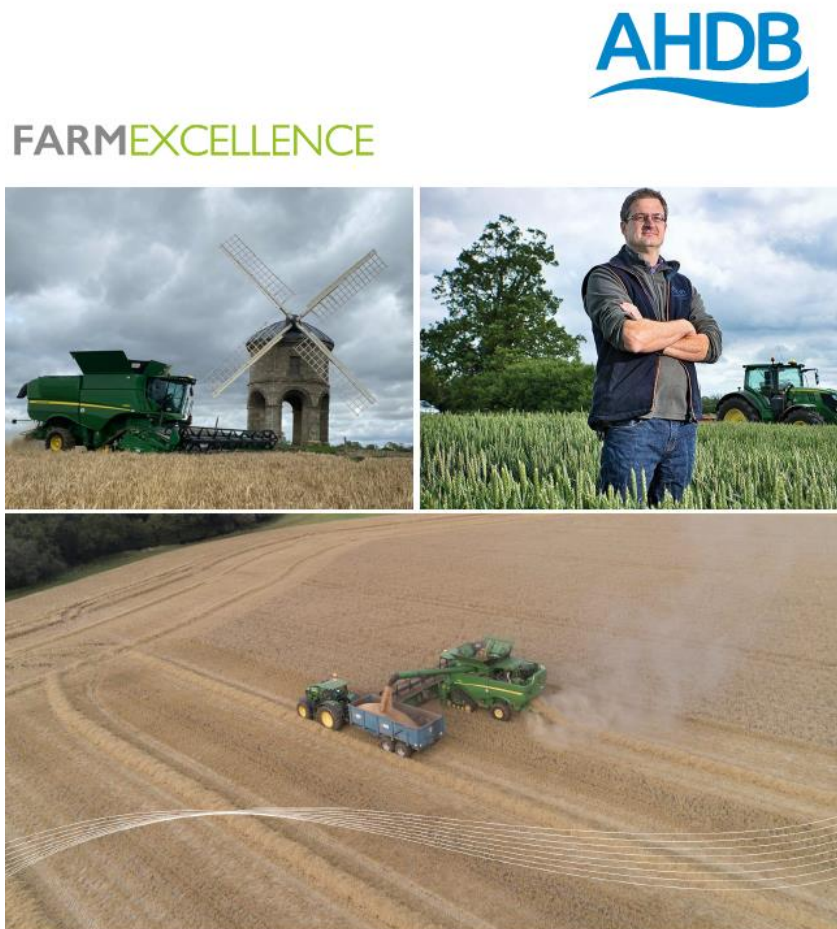
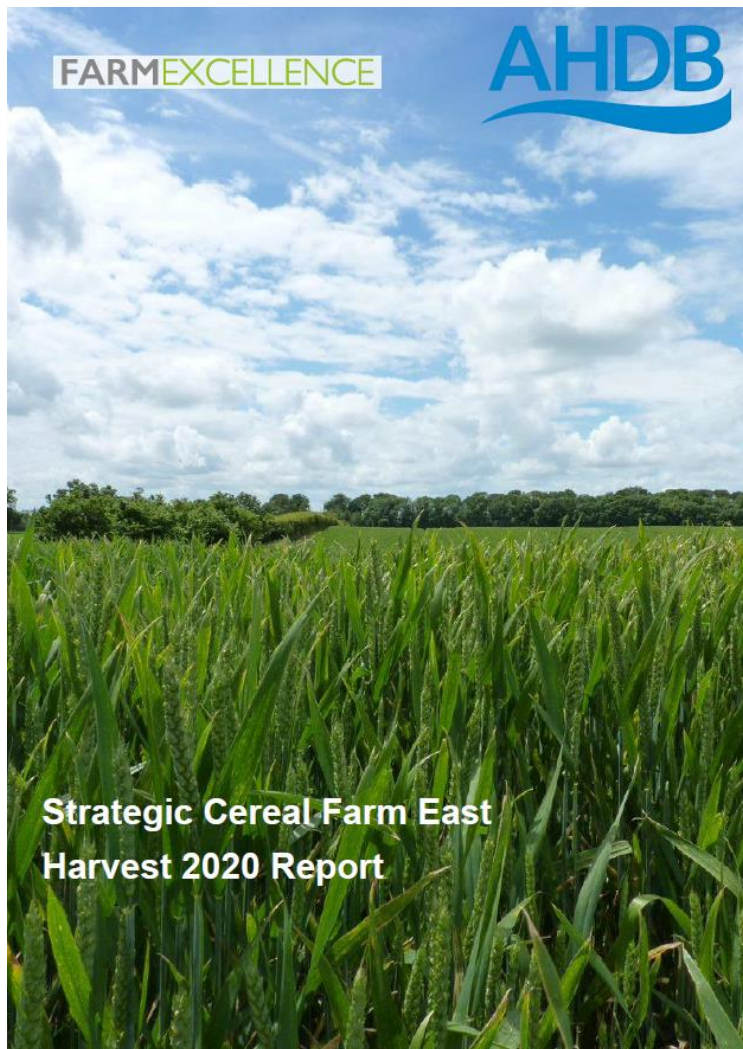
- Further use of new technology
- Strengthening of farm management
- Costly



Questions and Discussion



Resources



Strategic Cereal Farm West Harvest 2020 Report



ahdb.org.uk/sfweek-winter-2020/results

Resources



How to manage black-grass in arable crops

- > Arable weeds: Basic black-grass biology
- > Herbicide resistance in black-grass
- > Integrated management of black-grass

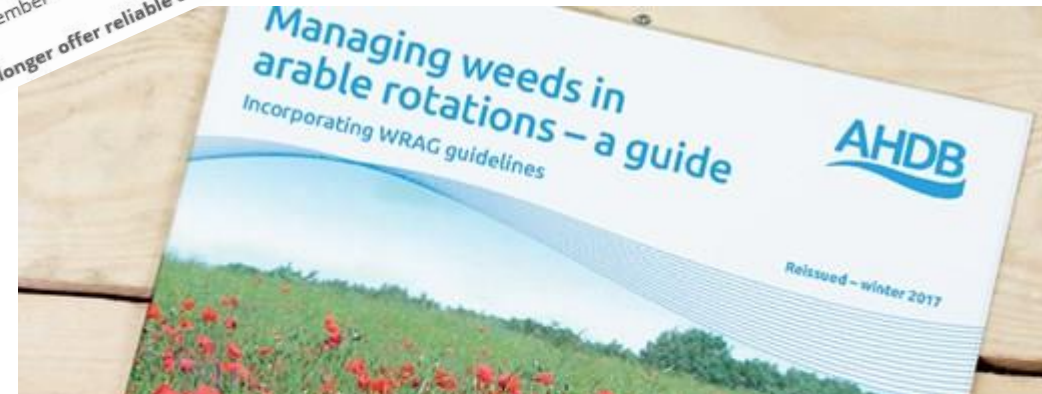
A dominance of autumn-sown arable crops and herbicide resistance mean black-grass has become a major headache for many farmers. However, a combination of non-chemical management approaches can still deliver good levels of control, especially when combined with chemistry.

Why has black-grass become such a problem?

Most black-grass emerges within crops, rather than before drilling, making it a tough target:

- 80% of black-grass emergence occurs in early autumn (August to October)
- Virtually all oilseed rape and, usually, more than 50% of winter cereals are sown before the end of September

Selective post-emergence herbicides no longer offer reliable control:



- AHDB publications
- <https://ahdb.org.uk/black-grass>
- Farmer experiences
- AHDB Crop Protection & IPM team

Strategic Farm Week – Winter 2020



Watch Strategic Farm research videos



Take part in the webinars



Listen to the podcast special



Download the harvest report and 'how to' resources

All at: ahdb.org.uk/sfweek-winter-2020

Coming up...

Strategic Farm Week:

- ✓ 7pm, Wed – Managed lower inputs, Part II
- ✓ 9am, Thurs – Flowering strips
- ✓ 9am, Fri – Ask the researcher

Wider AHDB:

- Monitor Farm Mondays
- Agronomy week
- Regional and technical events

Info and register at: ahdb.org.uk/events

Thank you



REC ●



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@Cereals_West

@AHDB_Cereals

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ahdb.org.uk/sfweek-winter-2020

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