

# The agronomist perspective: What does a changing climate mean for arable cropping?

Todd Jex – Agronomist & National Technical Advisor for Regenerative Agriculture

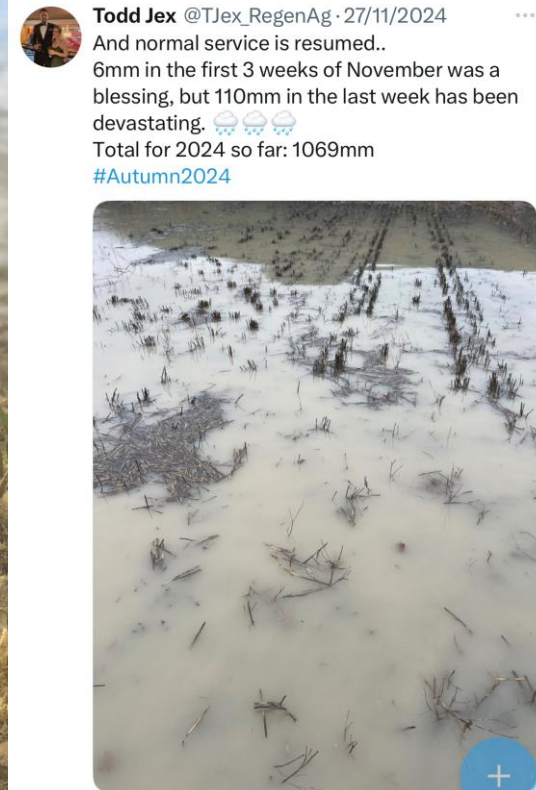
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# Agenda

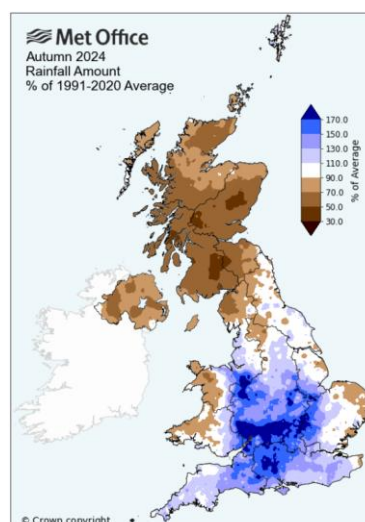
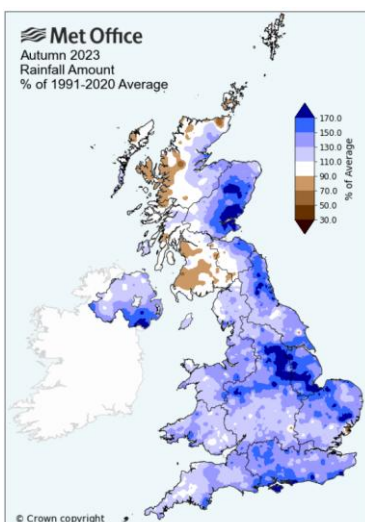
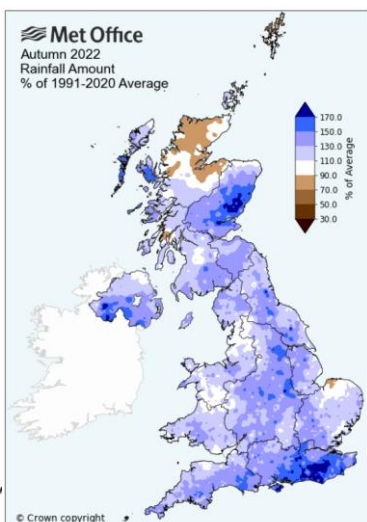
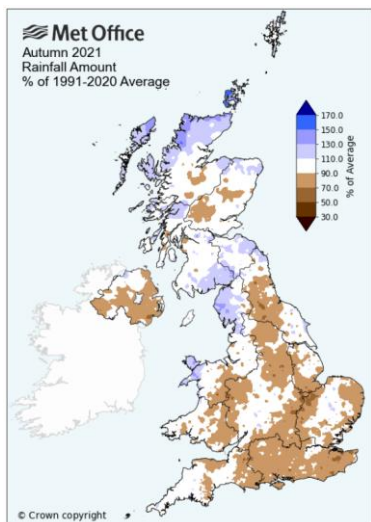
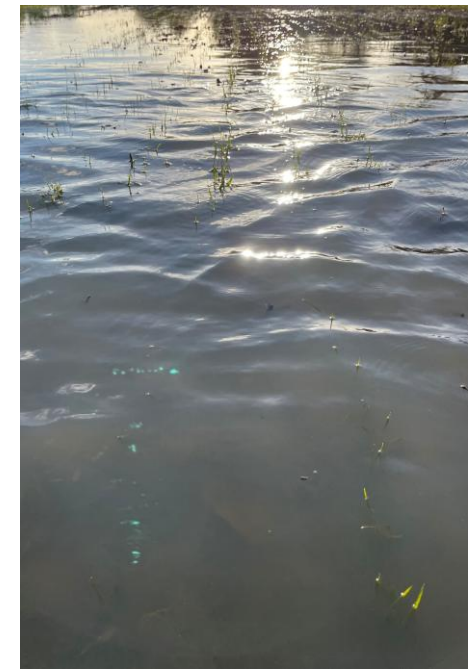
- + Challenges of a changing climate
- + Impact of climate on winter crop planting
- + Potential solutions
- + Novel crops





# Challenges of a changing climate

- + **A wetter winter and prolonged more intense rainfall**
  - Soil health challenges – Waterlogging
    - Challenge to no till and regen systems?
  - Field travelability
    - Grassweeds
    - Slugs
    - BYDV
    - Soil health – erosion and leaching

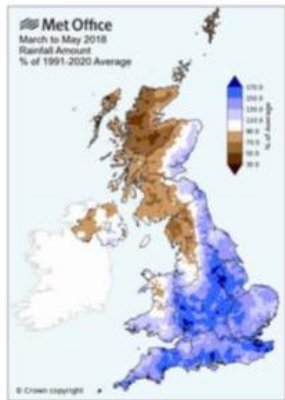




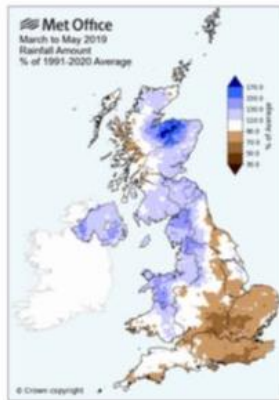
# Challenges of a changing climate

## + A drier, warmer spring summer and more frequent prolonged drought

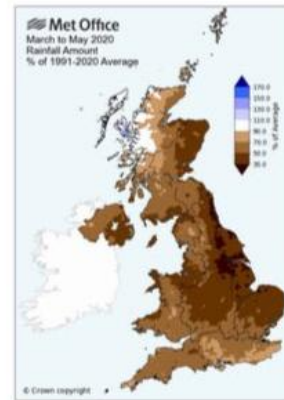
- Challenges around abstraction licences and irrigation ag vs public vs nature
- Pathogens – increased cycling in polycyclic diseases, new rust race emergence, new pathogens - Tan spot
- New pest emergence - European Corn Borer
- Viability of key cereal crops and soft fruits
- Crop suitability in the +2 and +4 scenarios, East & Southeast most vulnerable



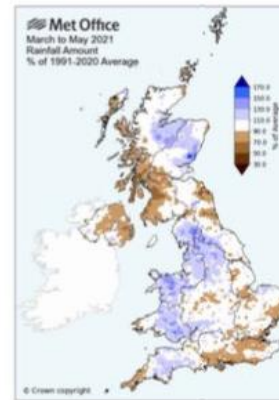
Mar - May 2018



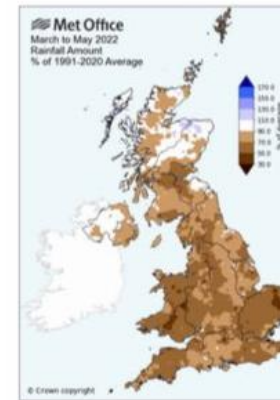
Mar - May 2019



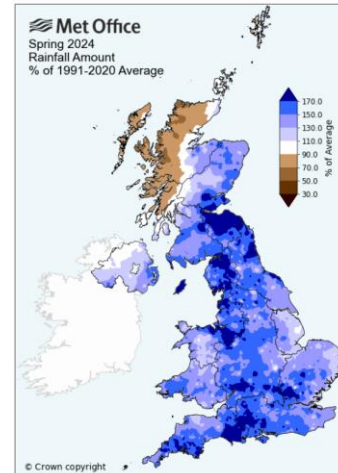
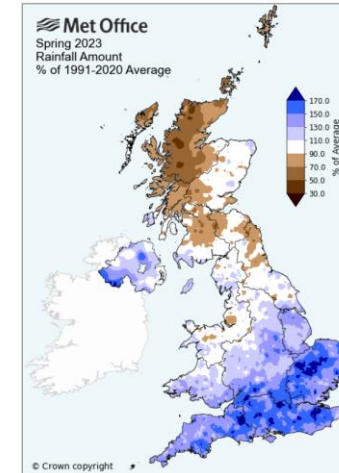
Mar - May 2020



Mar - May 2021



Mar - May 2022



% of average





# Earlier autumn drilling as a potential solution

+

## Challenges

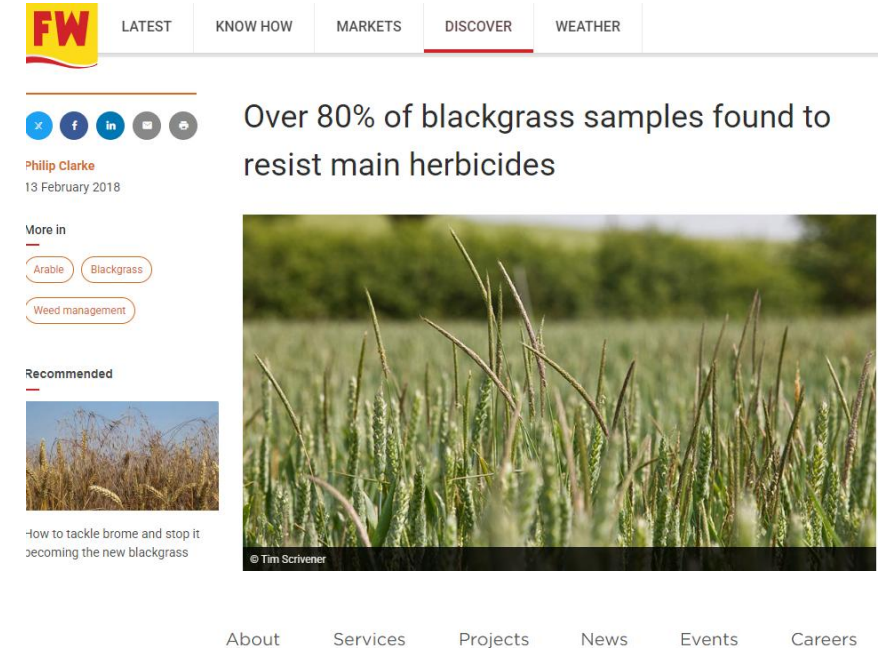
- Grass weeds – glyphosate resistance, chemistry loss, less OSR
- BYDV
- Gout fly
- Disease pressure





# Earlier autumn drilling as a potential solution

- + The grassweed situation isn't getting any easier
- + Black grass has been a major issue for 30 years
- + IRG globally already a significant problem but becoming a bigger issue over the last 20
- + Glyphosate resistance discovered last year



# Earlier autumn drilling as a potential solution



LATEST

KNOW HOW

MARKETS

DISCOVER

WEATHER

+ But CSFB and other issues have significantly reduced the OSR area in the UK



Charlie Reeve

13 November 2024

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Business

Crops markets and prices

Markets and trends

Oilseed rape

Recommended



How data-driven tools and training can lift potato yields

## OSR plantings at 40-year low as sector looks for solutions



© GNP

The viable UK rapeseed area for 2024-25 is forecast to be the smallest in the past four decades, with industry estimates pegging it at 215,000ha ahead of next year's harvest.

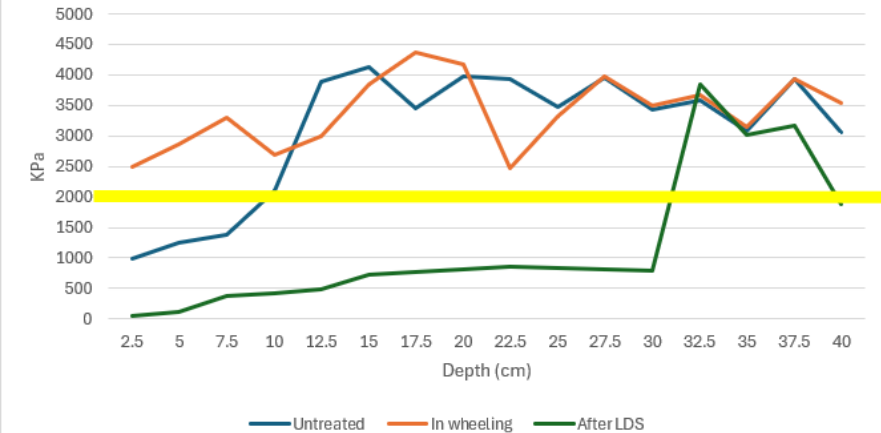


# Earlier autumn drilling as a potential solution

## + Potential solutions

- Wider rotations
- BYDV resistant varieties
- Disease resistance
- Improve soil health

Penetrometer results post harvest 2024 (medium chalk soil)



## Syngenta 5-year summary UK:

All results are comparing Sustainable System 2 (direct drill / light till) against the Conventional System (plough) averaged across the seasons (Lenham 4 years and Loddington 5 years)



	Bird sightings	Soil GHG emissions	Soil Cover	Earthworm numbers	VESS	Carbon footprint/t	Crop Establishment	Yield t/ha	Fuel use l/ha	Work rate ha/hr	Operation cost £/ha	Gross margin £/ha	Net profit £/ha
Lenham - Light land site	247%	5%	1157%	112%	10%	9%	5%	0%	45%	52%	7%	9%	16%
Loddington - Heavy land site	2800%	8%	437%	13%	1%	4%	8%	7%	44%	50%	11%	1%	14%





# Novel crops

- + Crop breeding drought resistance
- + Chickpeas
- + Sunflower
- + Durum wheat
- + Soyabeans
- + Citrus fruits?

National horizon-scanning for future crops under a changing UK climate: Chickpea

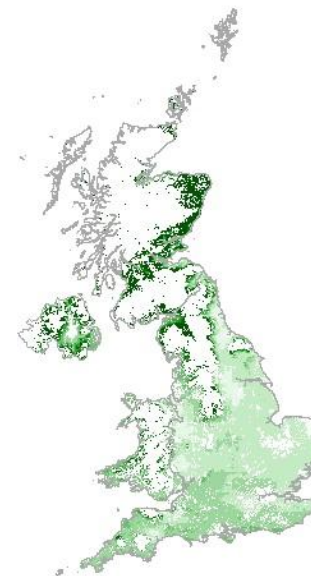
Present day average (+0.5°C)

+2°C

+4°C



Suitability score  
Lower  
Higher



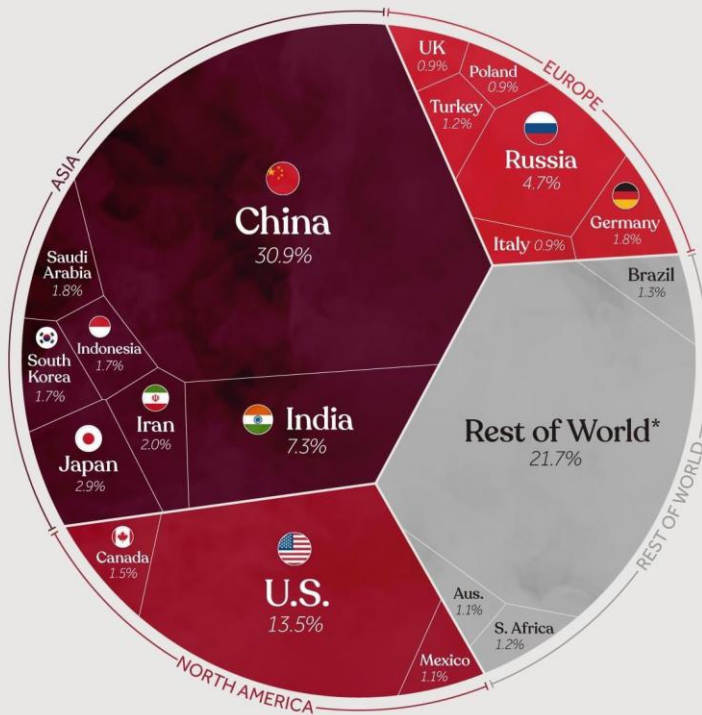
Change in score  
Decrease  
No change  
Increase



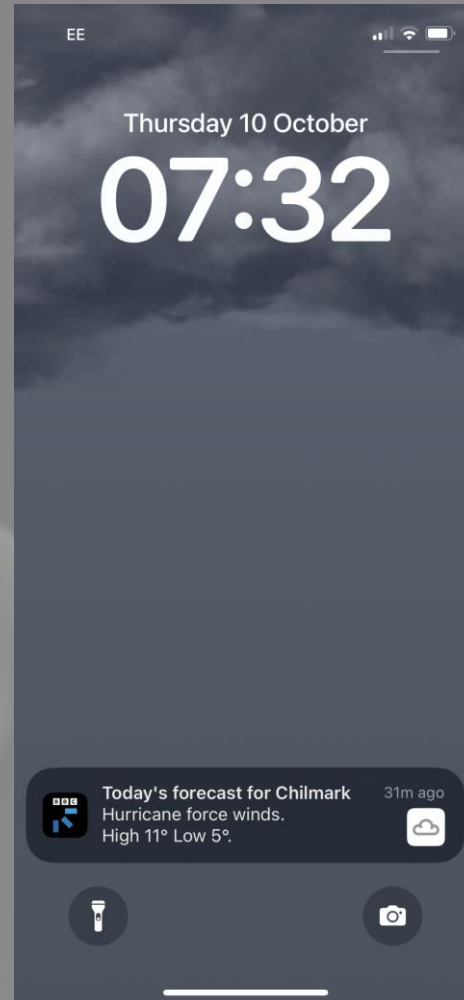
# Conclusions

## All the World's Carbon Emissions

% of total global emissions in 2021



\*175 countries  
Source: Global Carbon Atlas  
As of 2021



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