

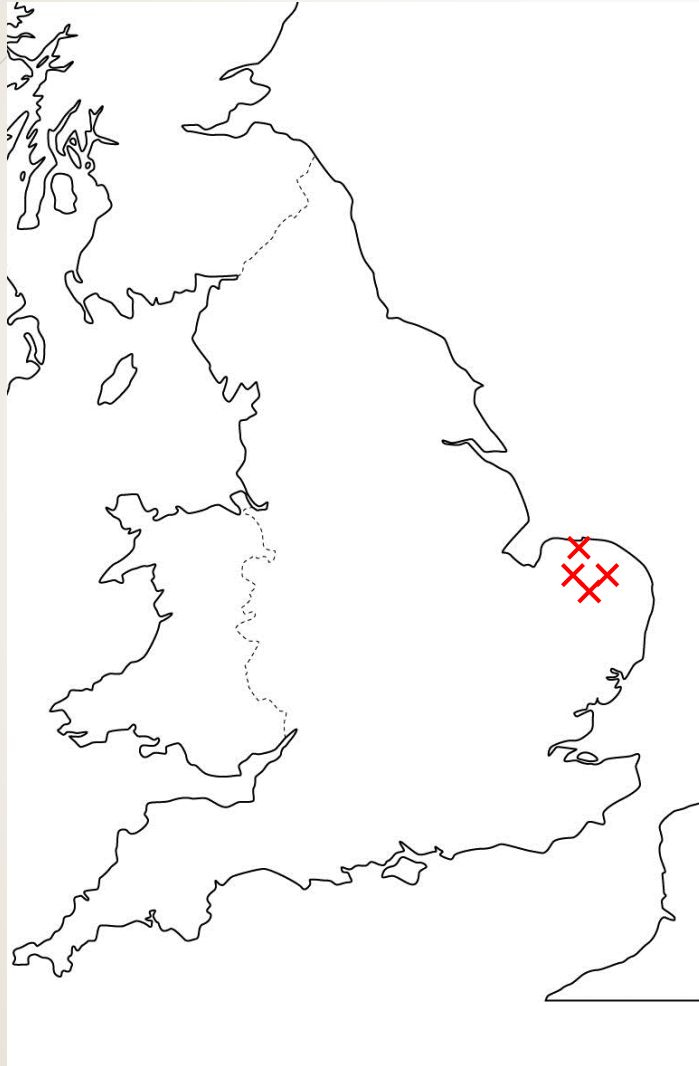
CATALYST FARMING BETTER TOGETHER

We are five farm businesses collaborating together. With research & commercial partners we test, discuss, choose & use best practice. This is enhancing the productive, financial & ecological results of our farming.

The BCPC Congress 2023

Poul Hovesen





7500 hectares

H

HOLKHAM FARMING COMPANY

- 2500 ha Arable
- 400 ha Countryside Stewardship
- 1500 ha Permanent Pasture
- Beef and Sheep Enterprise
- 25,000 Tonne Grain Storage
- Holkham Emerald – Potato Enterprise
- Energy Crops - AD Plant on-site



Raynham Farming

- 2000 ha – Total area
- 1700 ha - Farmed in hand as part of a min-till system(including some rented for feedstock production)
- 700 ha – Grassland and woodland managed in hand
- 600 head Aberdeen Angus beef herd
- Feedstock providers for an on site 3.5 MW AD plant
- 100 ha of solar on a dis-used airfield. Providing energy to 14,000 homes annually
- 2 Broiler hen units. No longer in hand, let on a long-term rental agreement



The Farming System

- Raynham is steeped in agricultural history. The 2nd viscount was a very influential figure in the British Agricultural Revolution
- The business has moved away from what was once a plough only based system, to now ploughing once in the 7 year rotation
- Significant reliance on organic manures
- The system has been streamlined significantly over recent years:

8 cultivators → 3 cultivators

3 ploughs → 1 plough

9 tractors → 5 tractors



N E Salmon Ltd



- 3rd Generation at Hyde Hall since 1955
- Home Farm + 5 Contract Farms
- Total cropped area 2,024ha (5,001ac)
- 15,000t Grain storage
- Varied Soil types, Chalky boulder clay through to blowing sand
- 3 full time staff

- Soil structure, Timeliness, Diverse Rotation, Agronomy

Our current farming system

- Controlled Traffic Farming - developing since 2016
 - Min-till and some No-till, evolving as soil improves
- 6 and 9 year crop rotation
 - Weed Control and soil health
 - 2 year grass seed leys (grazing during winter)
 - Sugar Beet and Maize on lightest land
 - Potatoes 12 year rotation
- Cover crops – sunlight harvesting, soil biology, armour, nutrient cycling
- Reducing applied P&K
- Optimisation of inputs through ‘Catalyst Farming’

Salle Farms Company

2000 ha's arable

Property

Grain handling facility

Christmas trees

Crush Foods

900 ha's arable incl
Seed Potatoes

Grain handling facility

Arable, woodland
& parkland



Farmstar, Poland

Heydon Estate



Rotation and Soil Management – Farming Strategy

	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5	Crop 6	Crop 7
Planted Crop	Winter Barley	Winter Oilseed Rape	Winter Wheat	Sugar Beet	Winter Wheat / Spring Barley	Spring Beans	Winter Wheat
Soil testing	☑			☑			
Organic Manure		Turkey Manure		Turkey Manure			
Cover Crop Drilling				Opus / Bio-Drill (Oil Radish, Phacelia, Clover, Vetch)		Opus / Bio-Drill (Buckwheat, Linseed, Phacelia)	
Cover Crop Control				Glyphosate (Nov/Dec)		Glyphosate (Nov/Dec)	
First Preparation	Kockerling	Opus 50mm Points	Carrier CrossCutter	Kockerling	Opus 50mm Points Plough		
Weed Control	Glyphosate						
Second Preparation	Opus 50-80mm Points		Kockerling	Rollomaximum		Kockerling	Kockerling
Drilling	Rapid	Rapid	Rapid	Precision Drill	Rapid	Rapid	Rapid
Planted Crop	Winter Barley	Winter Oilseed Rape	Winter Wheat	Sugar Beet	Winter Wheat / Spring Barley	Spring Beans	Winter Wheat

Catalyst Objectives

- Supporting and challenging decision-making in our farming systems.
- Scrutinise and trial the extremes- Push the boundaries.
- Collect relevant and impactful data.
- Analyse data into information and share the information.
- Continue observations and trials for continuous improvement.

Why is Data important?

- The only real way of **assessing decisions** (No guess work)
- **Marginal gains** (No Silver bullet)
- **Staying competitive** in a fast moving industry
- Using our **own data** (not global averages)
- Data **doesn't have to be complicated** (yields, drilling dates, fuel use)
- **Data has to have impact** (must be useful)

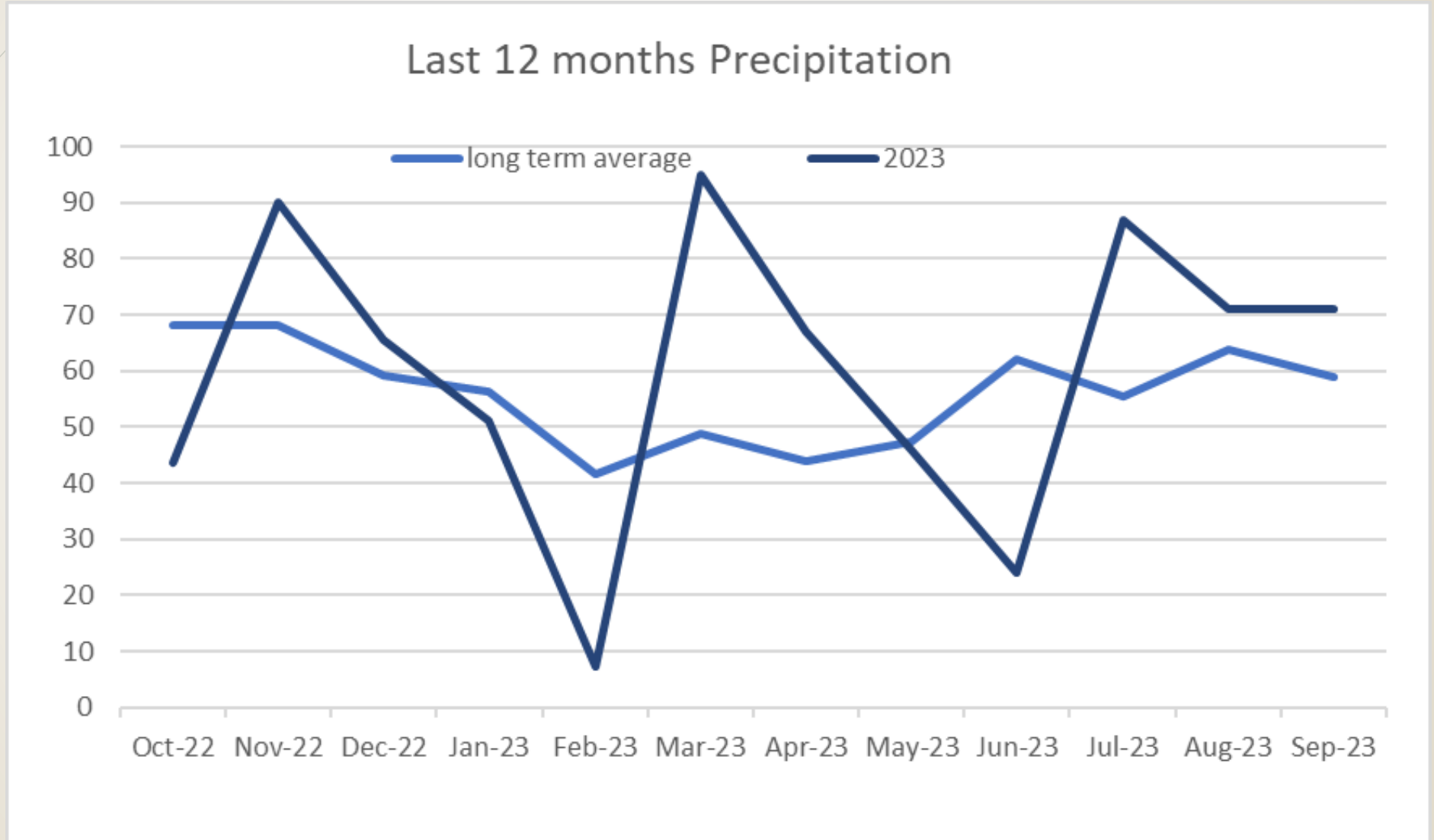
The Ideal System

- There is NO single Perfect system
- Weather
- There is an ideal system to aim for but it dependent on:
 1. Soil type
 2. “Normal” weather pattern
 3. Rotation/ Cropping

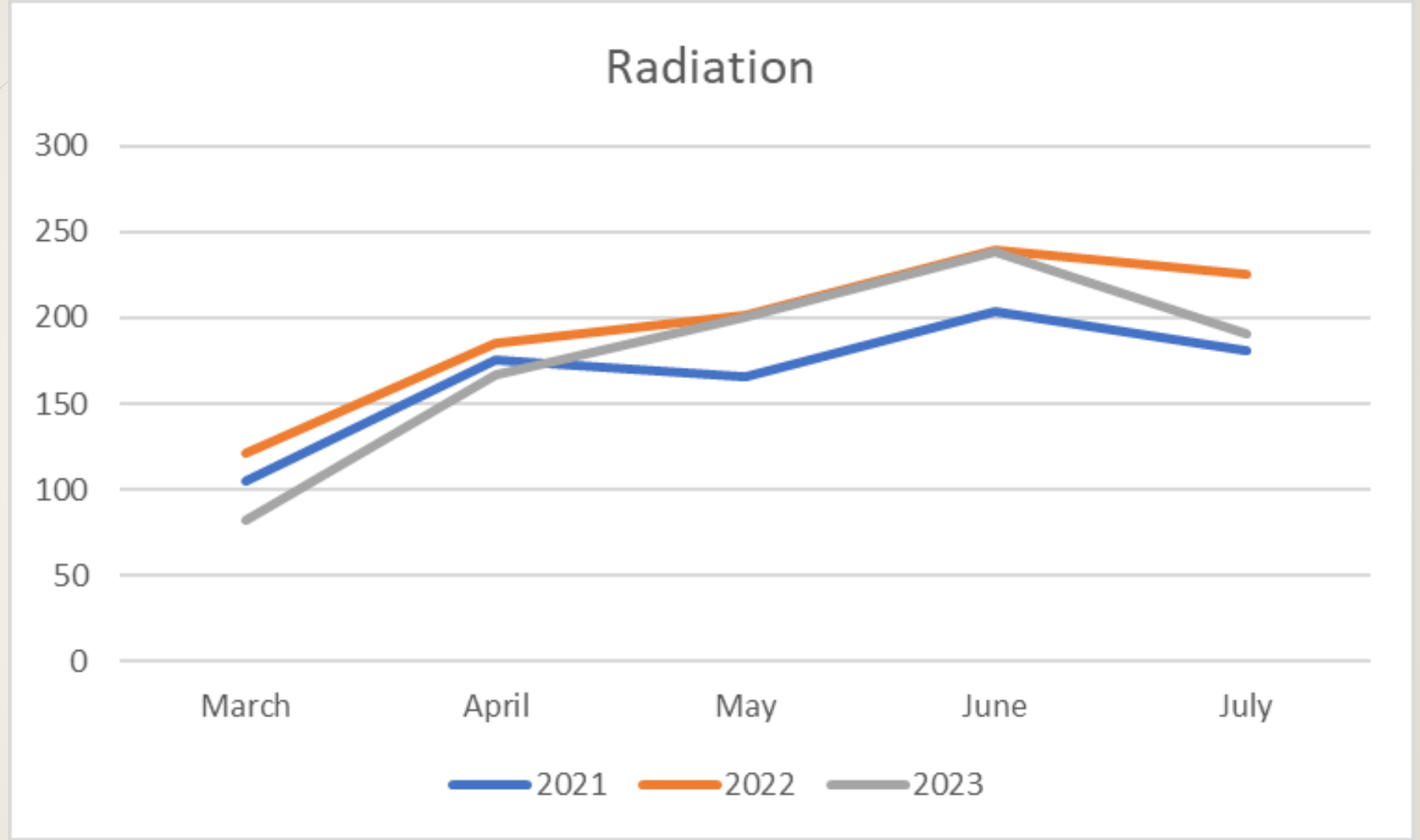
Aims of an Ideal System

- **Low fixed cost** (cost is always important)
- **Flexibility** (able to deal with different situations, weather)
- **Improving soil health** (A farmer's largest & most important asset)
- **Reduced traffic = reduced cultivation** (Soil is not structured by cultivation)
- **Adequate capacity** (spare capacity, timing is the most important)

- October 2023
170mm



Radiation

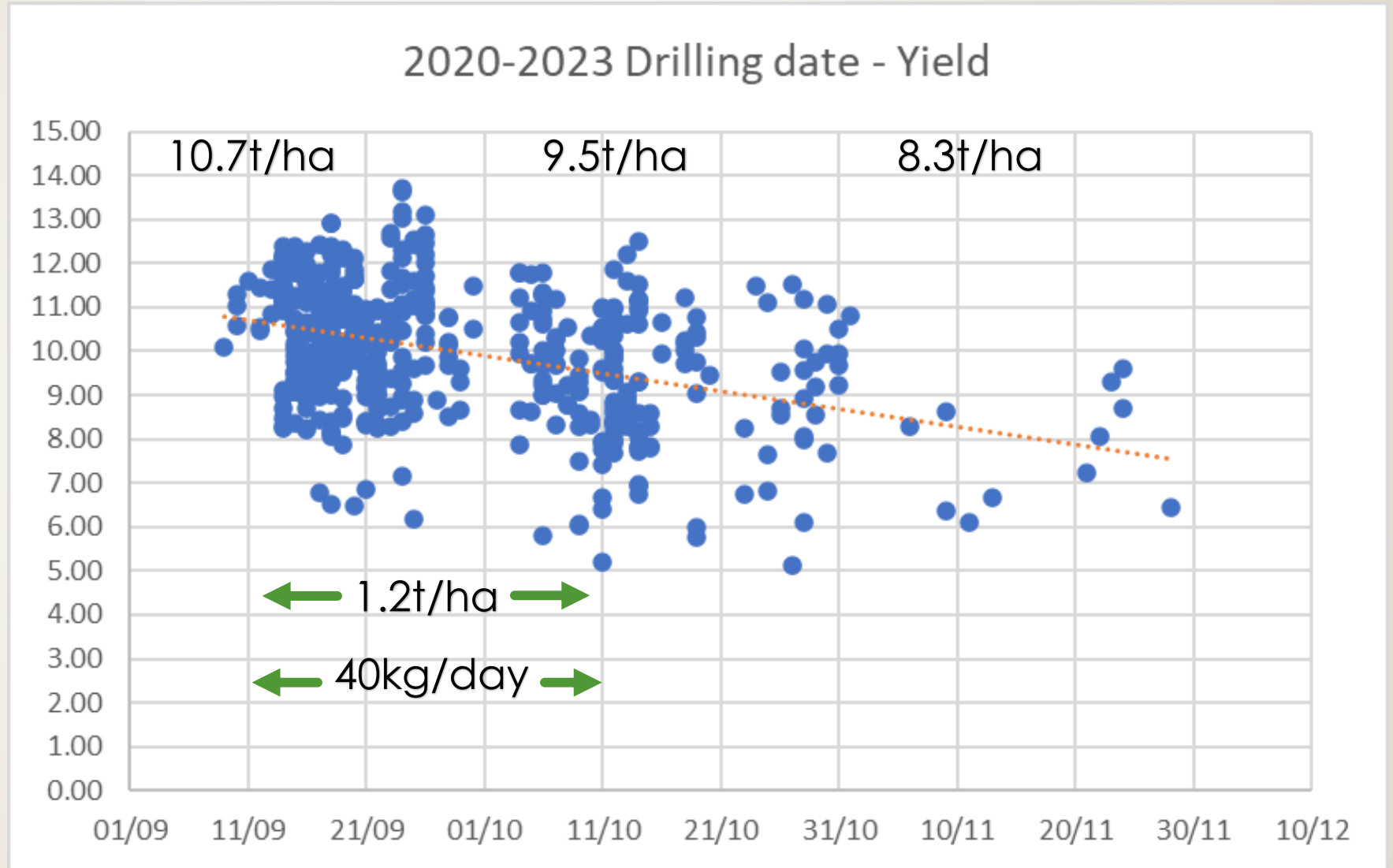


Golden Days + Drilling Output

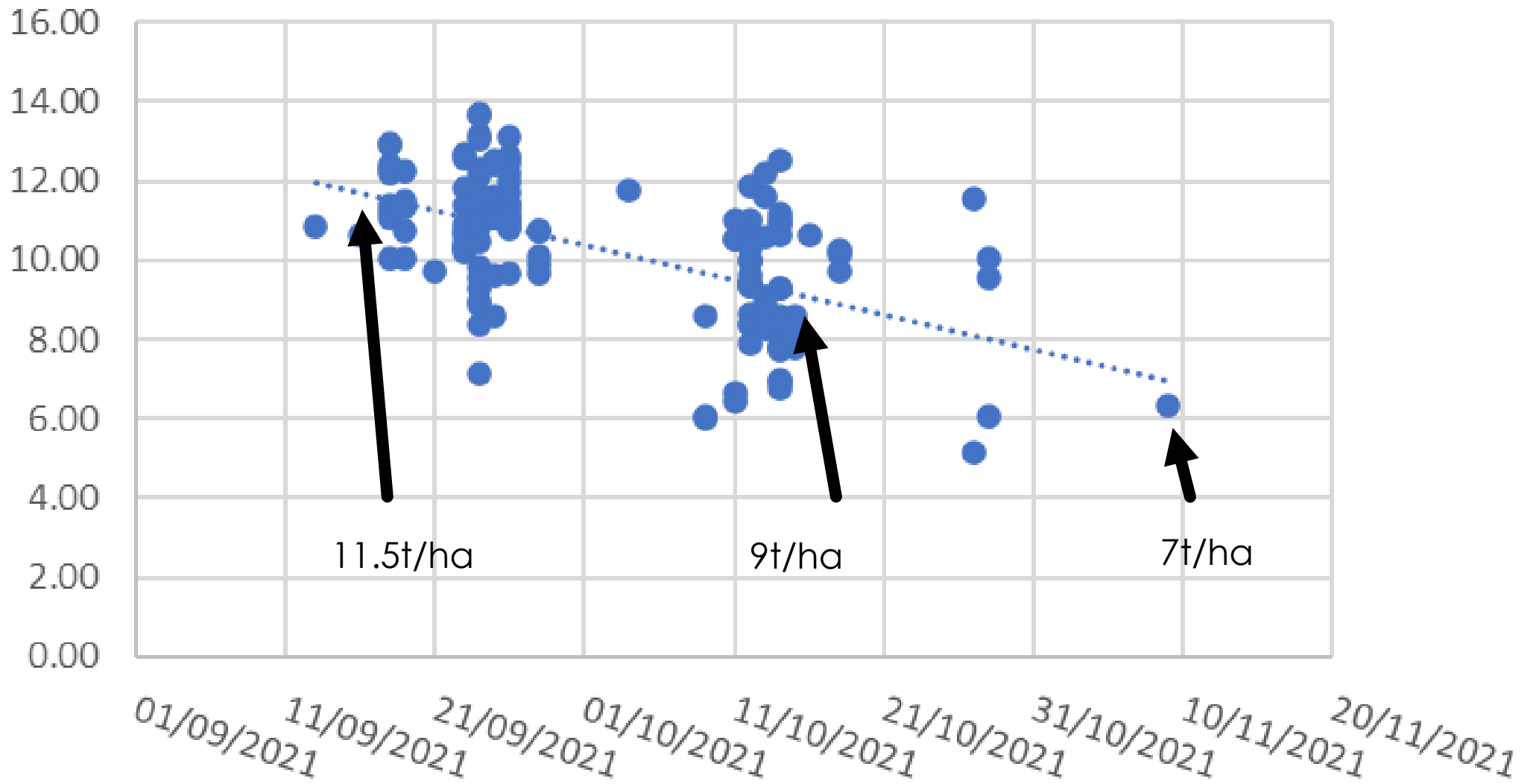




500 Fields
6,500ha



Winter Wheat 2022



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N
tester

FS

260

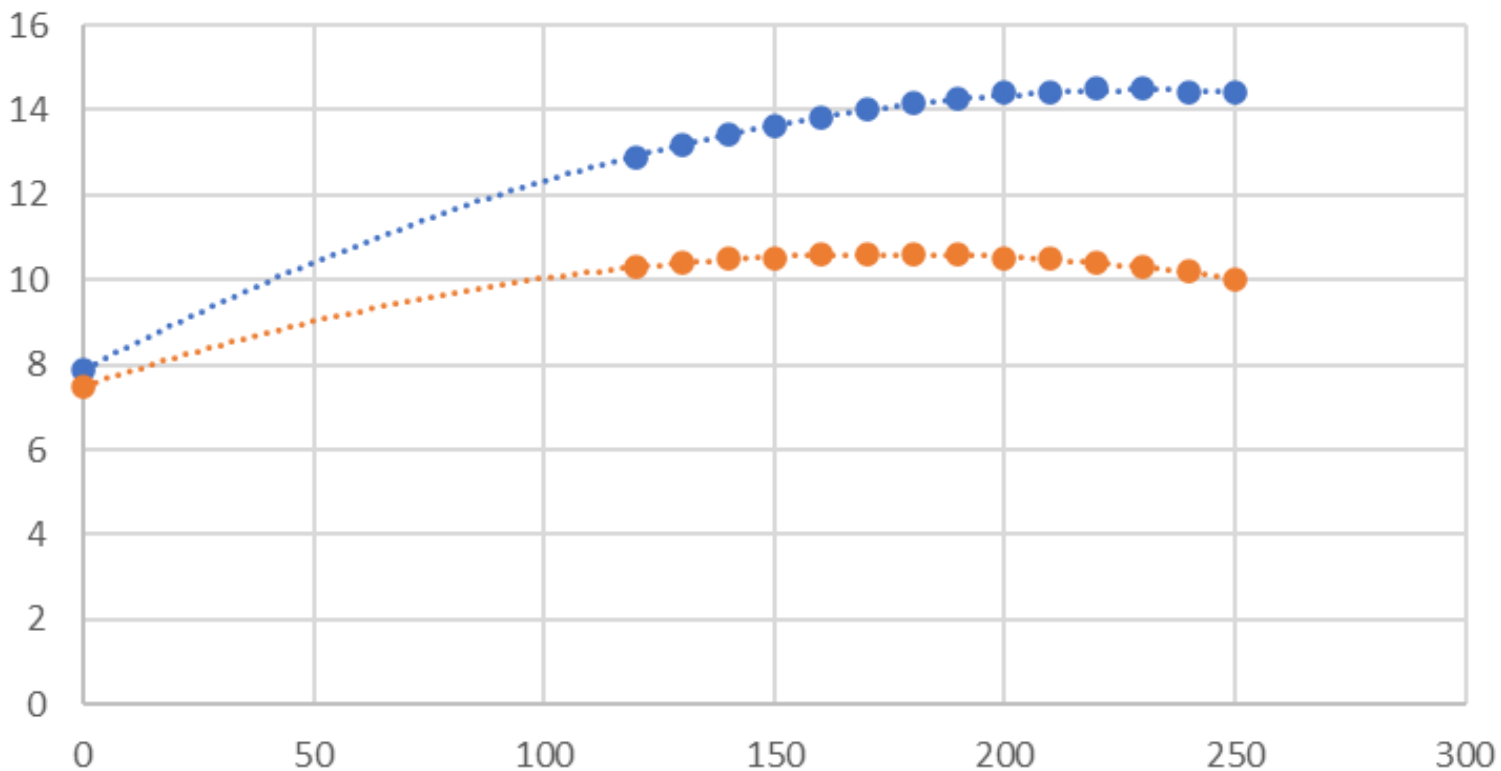
220

180

140

0

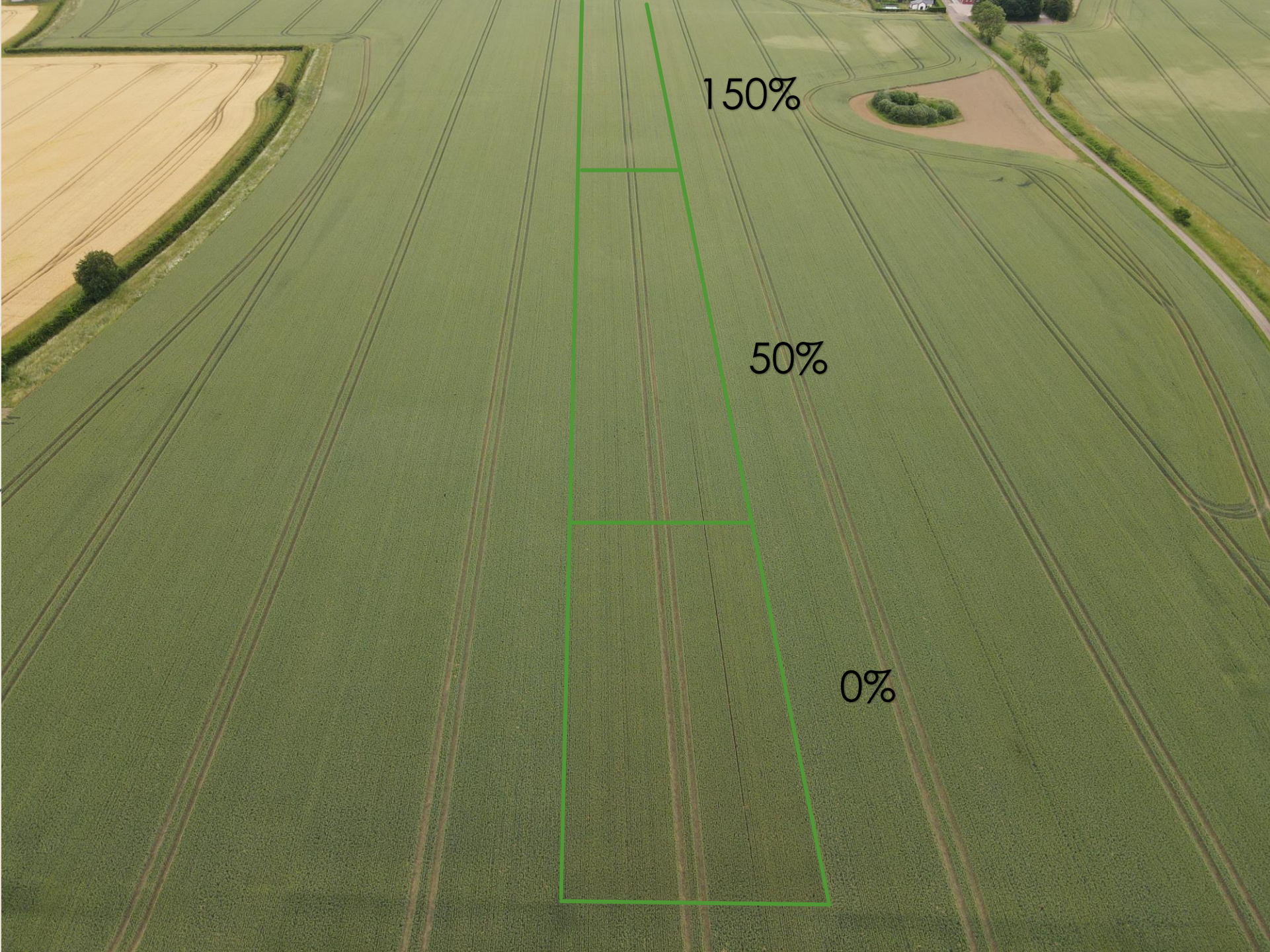
N response curves



Grain Value £/t	200
N cost £/kg	2
BER	10

Nitrogen	0	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260
High Yield	7.9	12.9	13.2	13.4	13.6	13.8	14	14.15	14.25	14.4	14.4	14.5	14.5	14.4	14.4	14.25
Grain Value £/ha	1580	2580	2640	2680	2720	2760	2800	2830	2850	2880	2880	2900	2900	2880	2880	2850
Low Yield	7.5	10.3	10.4	10.5	10.5	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
Grain Value £/ha	1500	2060	2080	2100	2100	2120	2120	2120	2120	2120	2120	2120	2120	2120	2120	2120
N cost £/ha	0	240	260	280	300	320	340	360	380	400	420	440	460	480	500	520
High yield Margin £/ha	1580	2340	2380	2400	2420	2440	2460	2470	2470	2480	2460	2460	2440	2400	2380	2330
Low yield Margin £/ha	1500	1820	1820	1820	1800	1800	1780	1760	1740	1720	1700	1680	1660	1640	1620	1600

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150%

50%

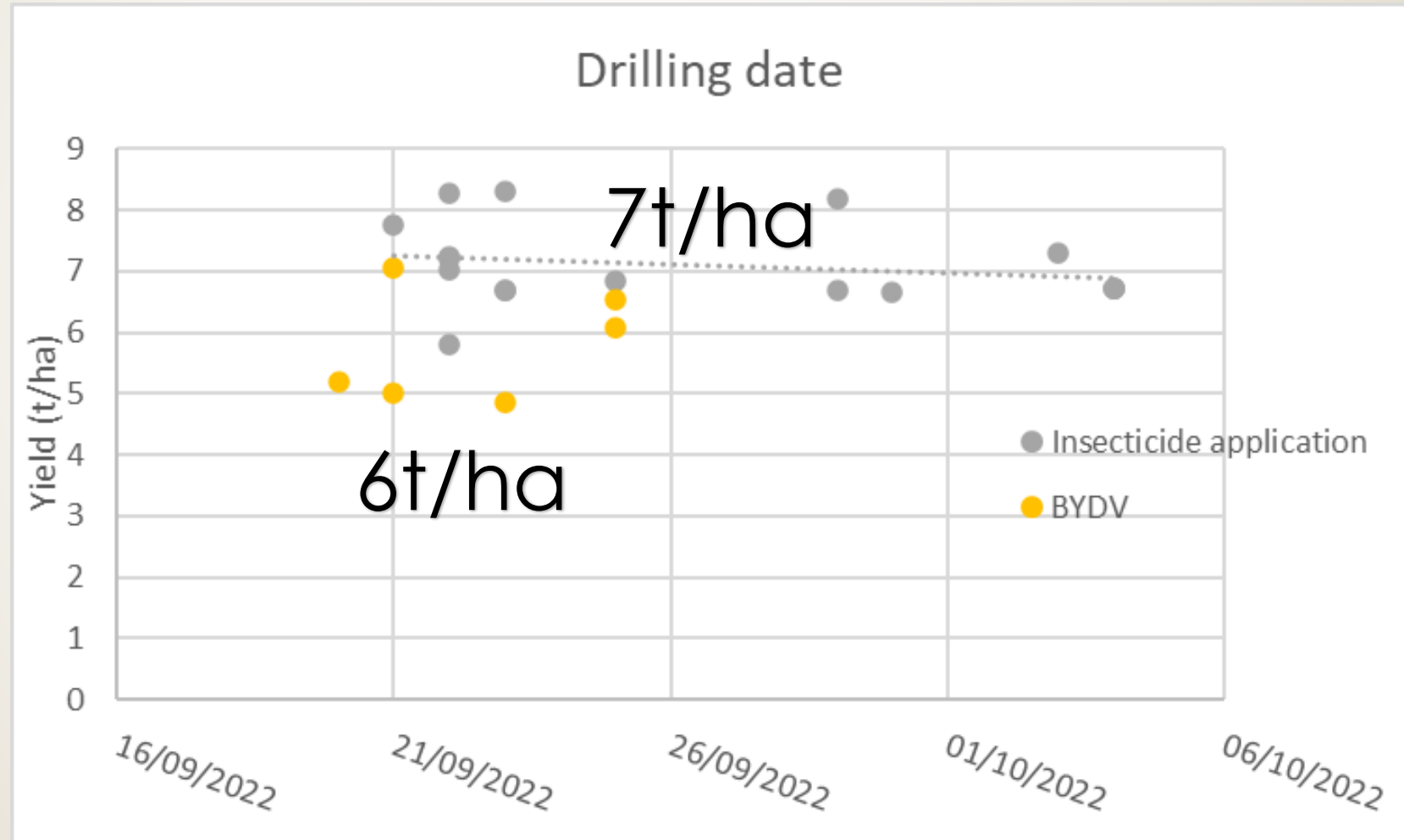
0%

Fungicide response

Fungicide cost	0%	50%	100%	150%
Yield	10.1	11.5	12.4	12.5
Fungicide cost	0	90	180	270
Grain value	2222	2530	2728	2750
Margin	2222	2440	2548	2480

Fungicide cost	0%	50%	100%	150%
yield	8.5	9.9	10.2	10.5
Fungicide cost	0	90	180	270
grain value	1870	2178	2244	2310
Margin	1870	2088	2064	2040

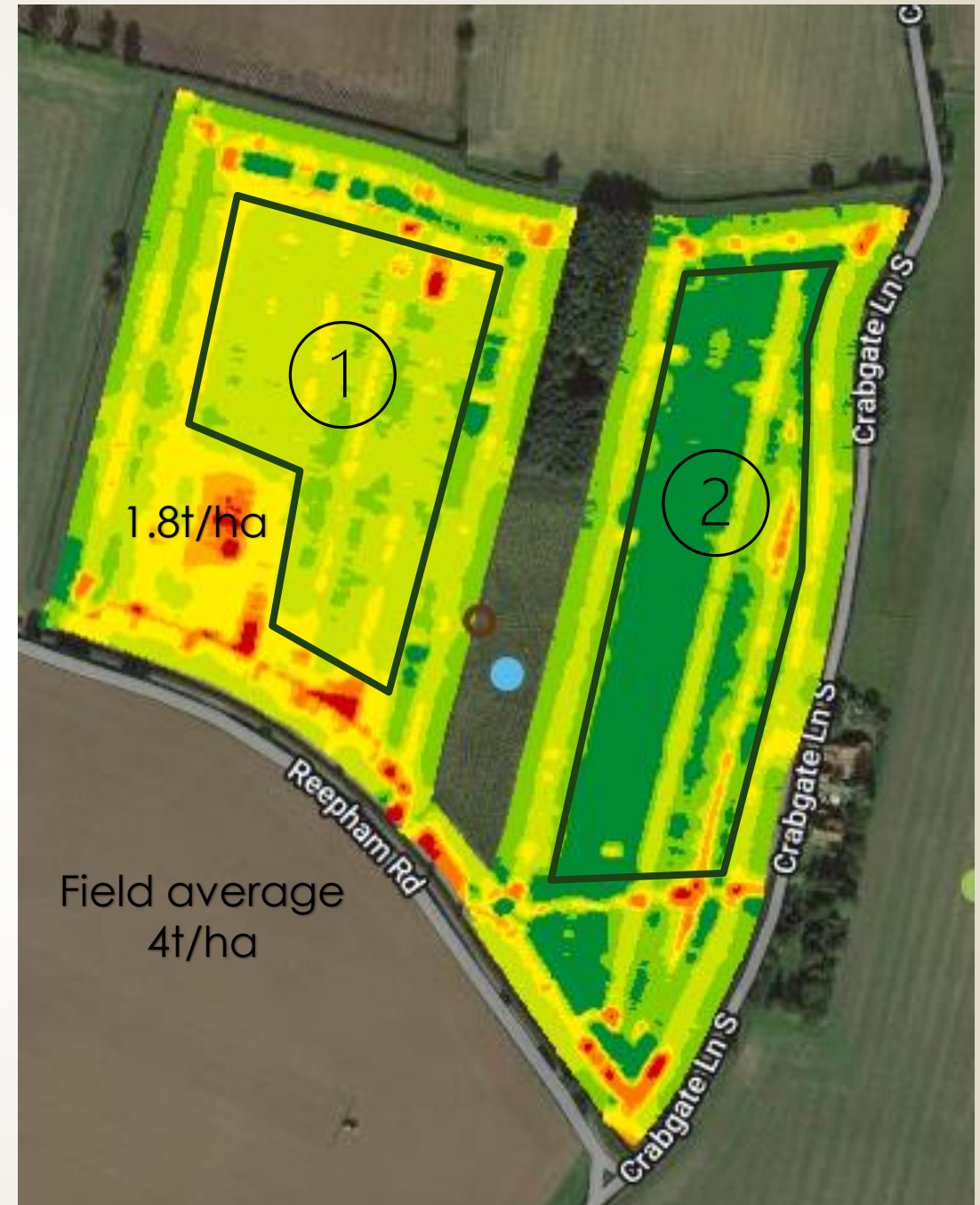
Winter barley – Insecticide effect



Insecticide trial - OSR

Year	Crop	1- Yield	2- Yield
2023	OSR	4.5	6.2
2022	W Barley	8	7.3
2021	Wheat	9	8.9
2020	Beans	5.7	5.1

1. Received winter and spring insecticide for CSFB and seed weevil
2. Received no insecticide



20cm tine cultivator v 30cm Plough



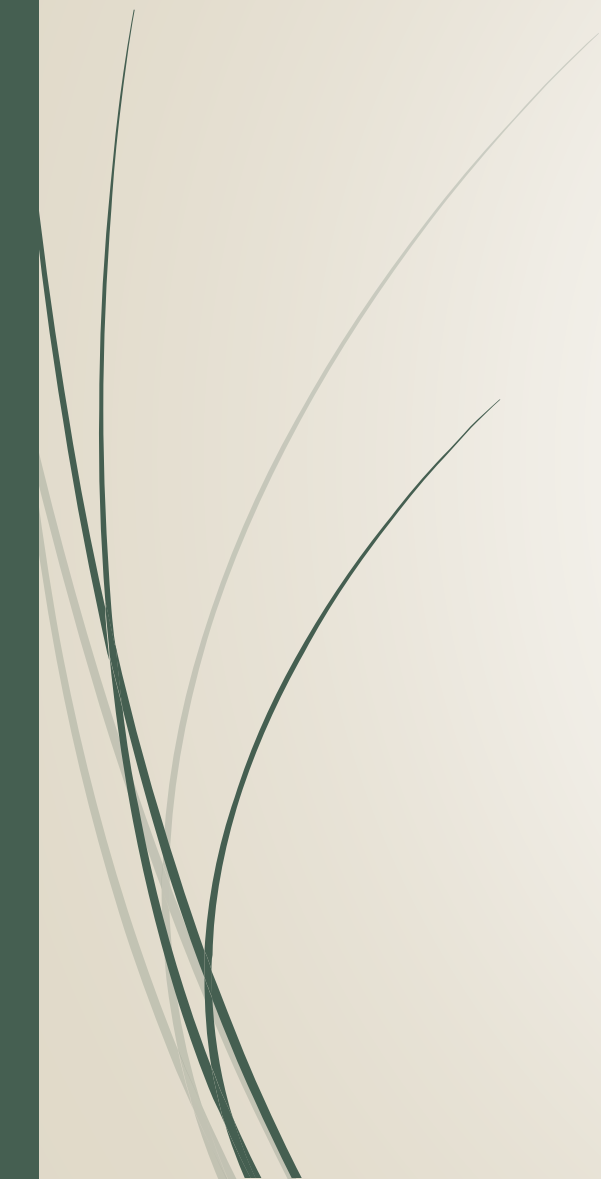
Catalyst Conclusions

- **The Farmer Factor** – attention to detail
- No input is as good as the **farmers feet on the ground**
- **Religion does not work**- Flexibility of farming system
- **Diversity** is key (cultivations, crops, chemistry...)
- **The 2 T's** (Timing and Team)

Future Research Projects



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