



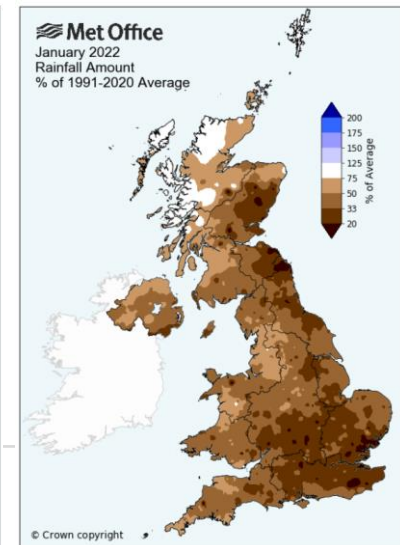
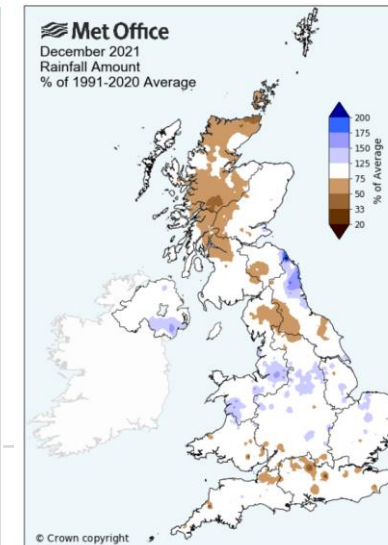
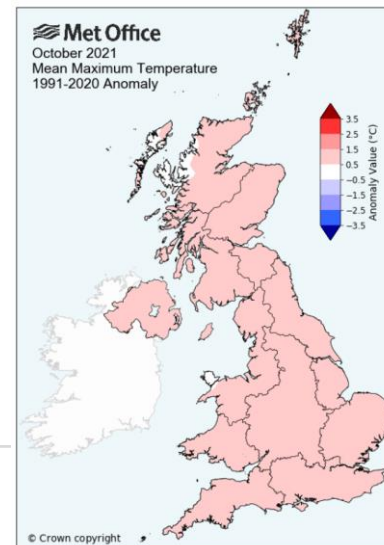
Spring management options

Sarah Kendall, Crop Physiologist, ADAS

United Oilseeds & AHDB Joint Agronomy Seminar

The season so far.....

- Successful establishment, with lower CSFB pressure on the whole.
- Some early Sep drilled crops with higher CSFB damage.
- Farmers opting for early vs late drilling windows – v. forward /smaller crops.
- Reports of some crops going into stem extension pre Christmas ...
- Higher SNS levels than normal – less leaching & more mineralisation.





Weather factors associated with OSR Yield

Investigated associations between high UK OSR yield and weather from 1979 to 2017

High Max Temp in **October**

Dry **December**

High Min Temp in **March**

Sunny/Dry **April**

Cool/wet/dull **May**

Together these factors accounted for 37% of yield variation (statistically significant)



December

50mm less rain associated with 0.11 t/ha more yield

Avoid waterlogging



April

50mm less rain associated with 0.20 t/ha more yield

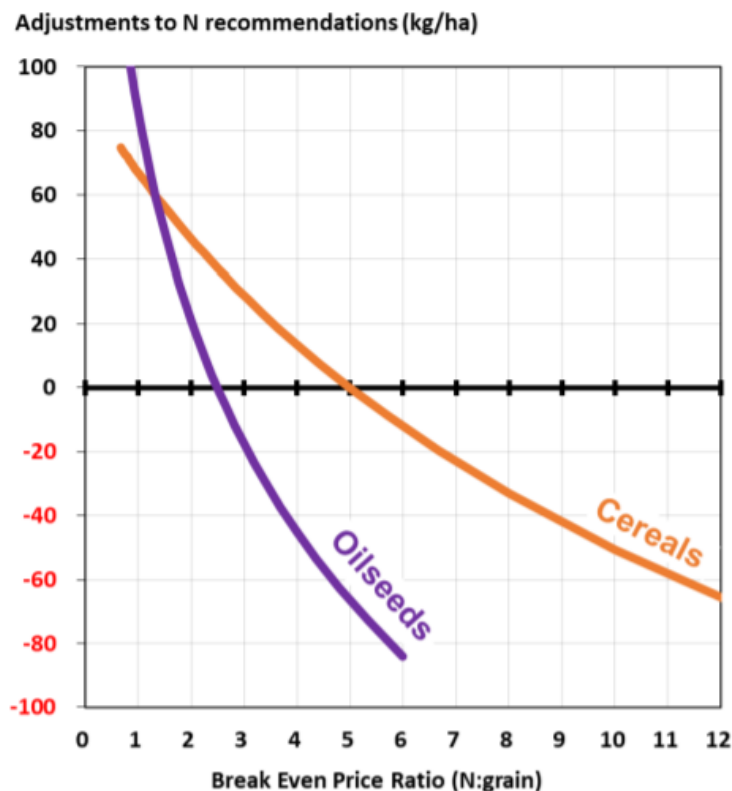
Avoid Excessive canopy

Adjusting N rates to prices

What price did you buy at?

What is the replacement cost?

OSR – deviations from RB209 recommended N rates



24 February 2022

Source of N	Fertiliser N content %	Fertiliser Cost								
		£/tonne product								
Ammonium Nitrate	34.50%	£173	£259	£345	£431	£518	£604	£690	£776	£863
Urea	46.00%	£230	£345	£460	£575	£690	£805	£920	£1,035	£1,150
Urea-Ammonium Nitrate Liquid	28.00%	£140	£210	£280	£350	£420	£490	£560	£630	£700
Cost of fertiliser nitrogen	£/kg N	£0.50	£0.75	£1.00	£1.25	£1.50	£1.75	£2.00	£2.25	£2.50
Rapeseed sale price		Change to recommendation for ALL OIL SEEDS								
	£/tonne	kg/ha N								
	200	0	-40	-70	-90	-110	-120	-130	-150	-160
	250	20	-20	-50	-70	-80	-100	-110	-120	-130
	300	40	0	-30	-50	-70	-80	-90	-110	-120
decrease	350	50	10	-10	-30	-50	-70	-80	-90	-100
increase	400	70	30	0	-20	-40	-50	-70	-80	-90
	450	80	40	10	-10	-30	-40	-60	-70	-80
	500	90	50	20	0	-20	-30	-50	-60	-70
	550	90	60	30	10	-10	-20	-40	-50	-60
	600	100	70	40	20	0	-10	-30	-40	-50

AHDB report available online...

<https://ahdb.org.uk/how-best-to-respond-to-costly-fertiliser-nitrogen-for-use-in-2022>

AHDB N fertiliser calculator



For OILSEEDS

Step 1

Enter your figures in the orange boxes

Oilseed crop 1 name (optional)	
Fertiliser price (£/tonne product)	
Nitrogen content of fertiliser (%)	
Expected seed price (£/tonne)	
Your typical/recommended nitrogen rate* (kg N/ha)	
Area planted (ha)	
Cost of fertiliser (£/kg of nitrogen)	
Break-even ratio (Number of kilos of grain to pay for 1 kilo of N fertiliser)	

Oilseed crop 2 name (optional)	
Fertiliser price (£/tonne product)	
Nitrogen content of fertiliser (%)	
Expected seed price (£/tonne)	
Your typical/recommended nitrogen rate* (kg N/ha)	
Area planted (ha)	
Cost of fertiliser (£/kg of nitrogen)	
Break-even ratio (Number of kilos of grain to pay for 1 kilo of N fertiliser)	

Step 2

Get your results

Oilseed crop 1 results	
Adjust recommended application by	kg N/ha
Your adjusted nitrogen application rate	kg N/ha
Estimated affect on yield	t/ha
Estimated affect on income	£/ha
Estimated impact on N fertiliser costs	£/ha
Total N fertiliser product required	tonnes

Oilseed crop 2 results	
Adjust recommended application by	kg N/ha
Your adjusted nitrogen application rate	kg N/ha
Estimated affect on yield	t/ha
Estimated affect on income	£/ha
Estimated impact on N fertiliser costs	£/ha
Total N fertiliser product required	tonnes

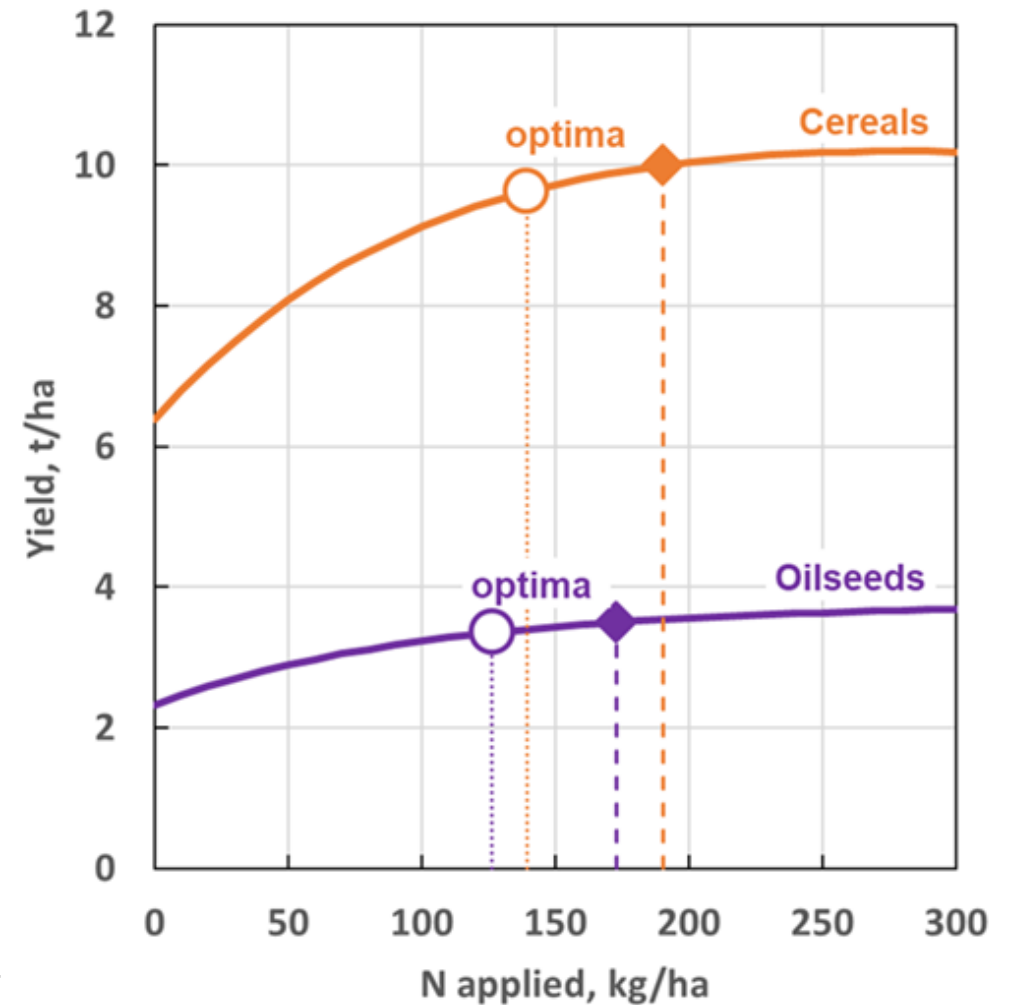
<https://ahdb.org.uk/knowledge-library/nitrogen-fertiliser-adjustment-calculator-for-cereals-and-oilseeds>

Impact of high N fertiliser price

Inevitably, reducing N rates means a reduction in yield.



	CEREALS	OILSEEDS
Reduction in N applied, kg/ha	Effect on yield, t/ha	
0	0	0
-10	-0.05	-0.03
-20	-0.12	-0.06
-30	-0.19	-0.09
-40	-0.27	-0.12
-50	-0.36	-0.16
-60	-0.47	-0.21
-70	-0.59	-0.25
-80	-0.72	-0.31
-90	-0.87	-0.37
-100	-1.04	-0.43





Deciding what N rates are right for my farm



AHDB Nutrient Management Guide (RB209) is about right on average, but often variation between farms

Strategic decision – Use **experience** to judge past success to inform future decisions

- Yields, Lodging, misses & overlaps, N offtake & NUE metrics
- Soil Mineral N, organic matter and mineralization measures
- Manures – account for nutrient content
- Seed analysis – YEN Nutrition
- Test different N rates on farm



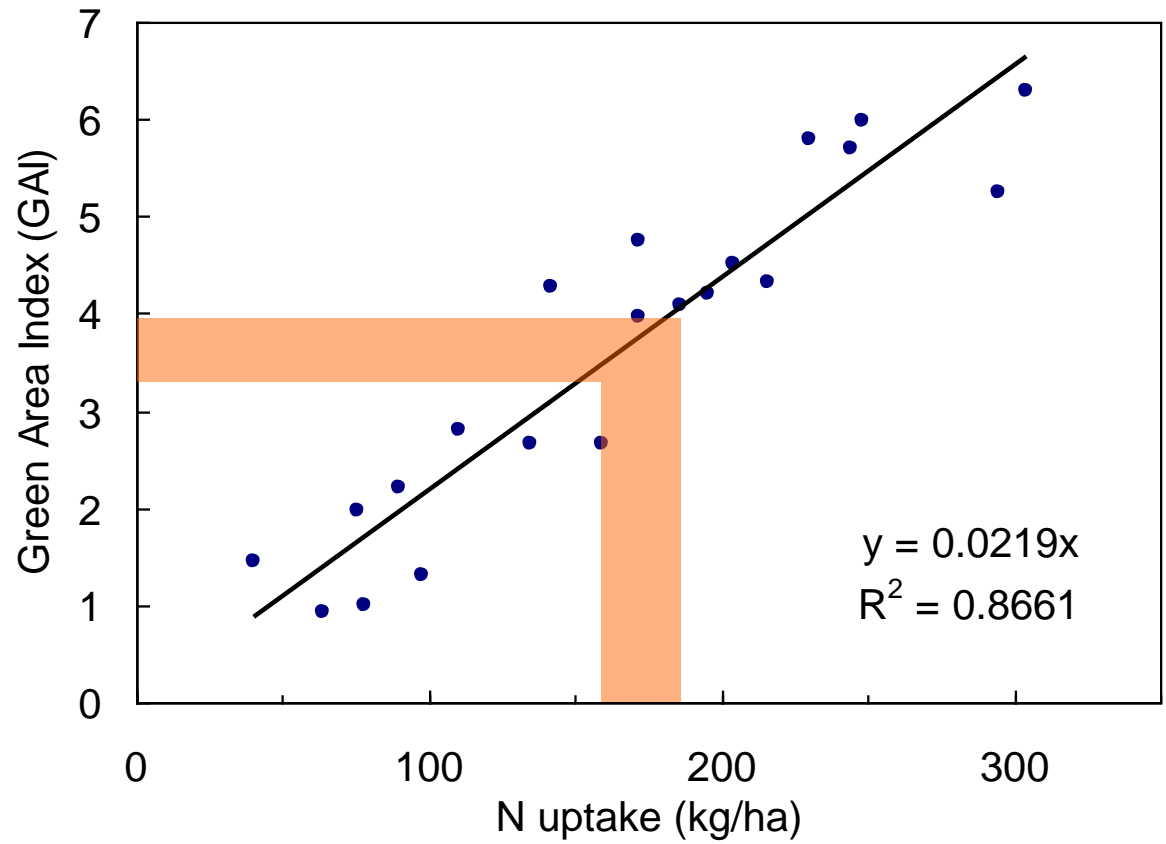
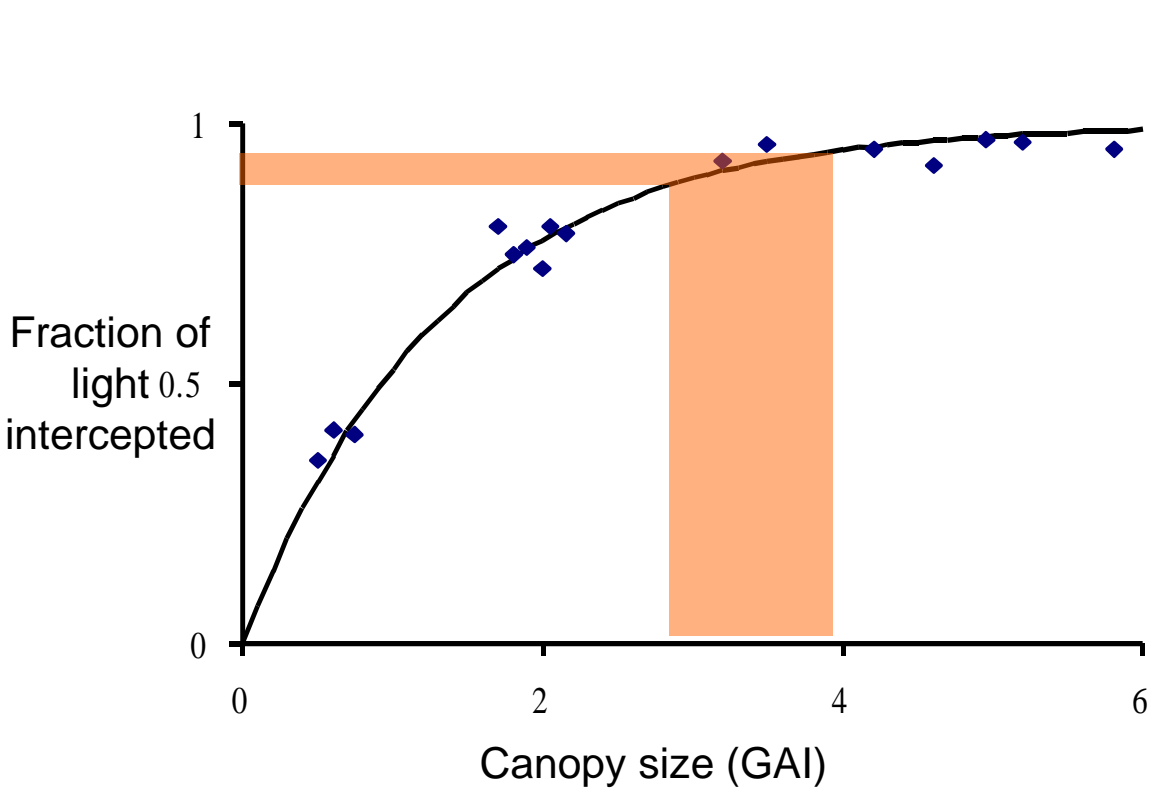
SNS Best Practice 2012



Canopy Management principles



Target an optimum GAI of 3.5 units – which requires 175kg N/ha (50kg / GAI unit)



Measuring and accounting for Crop N – vital this year

Each unit of Green Area Index in OSR contains 50kg N/ha

- That N is in the crop & doesn't need to come from fert
 - Even if frosted off ... though not if taken by pigeons!
 - Many OSR crops already contain £300/ha worth of N!

How to measure GAI / N uptake?

Digital photo for GAIs of up to 2.5

- Use phone apps e.g. the BASF GAI Tool app

Crop fresh weight for GAIs above 2.5

- Record fresh weight in kg of 1m x 1m area
- Multiply by 0.8 to give GAI

Fraction of soil covered by crop

Ground cover	GAI	Kg N/ha
1/3	0.5	25
1/2	1.0	20
3/4	2.0	100



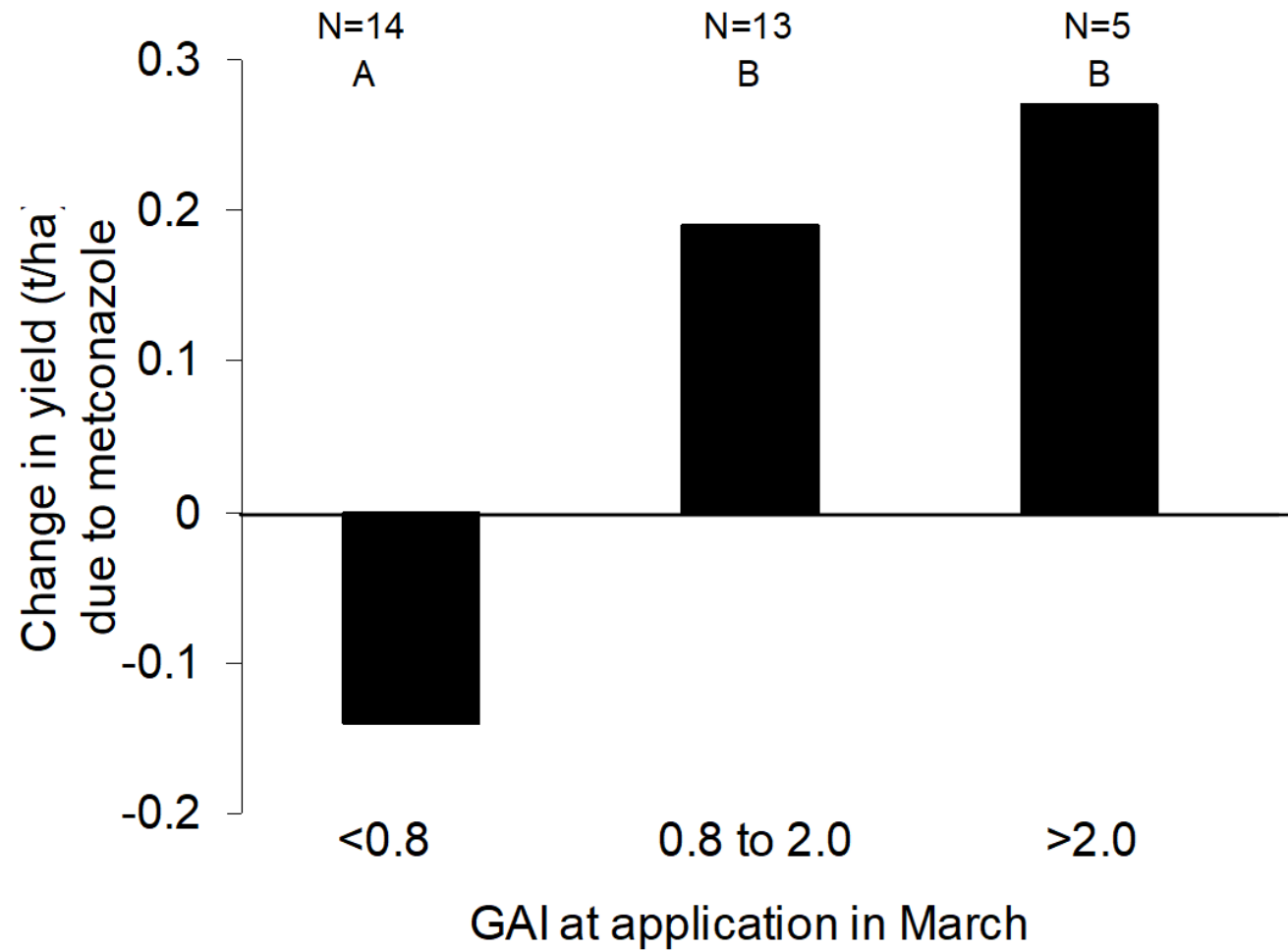
Large Canopies don't need early N



- GAI = 2.8 (140 kg N/ha)
 - Soil N = 10 kg N/ha
 - 40 kg N/ha for optimum canopy
 - Extra 30 kg N/ha for 4 t/ha
-
- 40 kg at green bud
 - late March / early April
 - 30 kg at yellow bud / early flowering
 - Mid-late April



GAI threshold for using a PGR = 0.8



Sulphur risk matrix

	Winter rainfall (Nov–Feb)		
Soil texture	Low (<175mm)	Medium (175–375mm)	High (>375mm)
Sandy	High		
Loamy and coarse silty	Intermediate	High	
Clay, fine silty or peaty	Low		Intermediate



Don't forget about sulphur this spring – 50 – 75kg SO₃ applied in late Feb – early March
May need to consider alternative products where N applications delayed

Get Involved in Oilseed YEN this season

- Understand what is constraining yields on your farm, and how to improve them
- Bespoke benchmarking report, allowing you to compare crop performance for >100 metrics
- Access to a soil, tissue, seed analyses as well as whole crop sample to estimate components of yield
- www.yen.adas.co.uk

Oilseed YEN sponsors





Conclusions



- Calculate the BER for each crop and adjust N rate accordingly
- Yield reduction from lower N not as big as often perceived
- Cost of getting N rate wrong is more when using lower N rates
 - Estimate SNS as carefully as possible
 - Use crop sensing tools ... & visual observations to fine tune N rates during season
- Use a range of tools to assess whether past N rates were right
 - Grain Analysis – YEN Nutrition
 - Experiment on-farm
- Consider N timings carefully, delay first application in large, forward crops
- Maintain S, P, K application levels
- Join Oilseed YEN to understand yield constraints and ways to improve



A vibrant yellow field of flowers, likely rapeseed, stretches across the foreground and middle ground. The sky is dark and overcast, with a large, multi-colored rainbow arching across it from the left side towards the center. The overall mood is one of hope and gratitude.

Thank you