



MAIZE TRIALS 2020

MGA Seed treatment trial – Harper Adams University
100 seeds

MGA Depth of drilling trial

MGA Eyespot Trial – NIAB Devon

MGA Maize seed treatment trial 2018-2020



- Loss of Mesurool in 2020 created a threat to successful maize establishment
- MGA been working on seed treatment trials since 2018
- 100 seeds placed on soil surface and counted every day
- Korit (ziram ai) identified as best alternative by breeders.
Registered poison works by vapour release
Care for seed handling at drilling – must use PPE
EU approval for use until 30 April 2021
looks like derogation for use until 1 Sept 2023
maybe until 2024 EU27
Bird repellent only
- If you require insecticide due to grassland pests use Force 20



Be careful when filling the drill
 - Fatal if inhaled
 - Can cause skin irritations
 - Can cause irritation to airways.

Korit works as a vapour and is nasty, full PPE should be used at all times.

Clear up any surface spills in the field promptly.

- Nitrile gloves
- Coverall
- FFP3 mask

MGA Maize seed treatment trial 2020



- Mesurol (ai Methiocarb)
- Korit + Redigo M (Ziram + Metalaxyl & Prothioconazole)
- Initio + Redigo M (Ziram + Metalaxyl & Prothioconazole + Micronutrients + root bacteria)
- Force 20 (Tefluthrin) – Insecticide with bird repellant
- Untreated



Mesurol



Korit



Force



Initio



Untreated



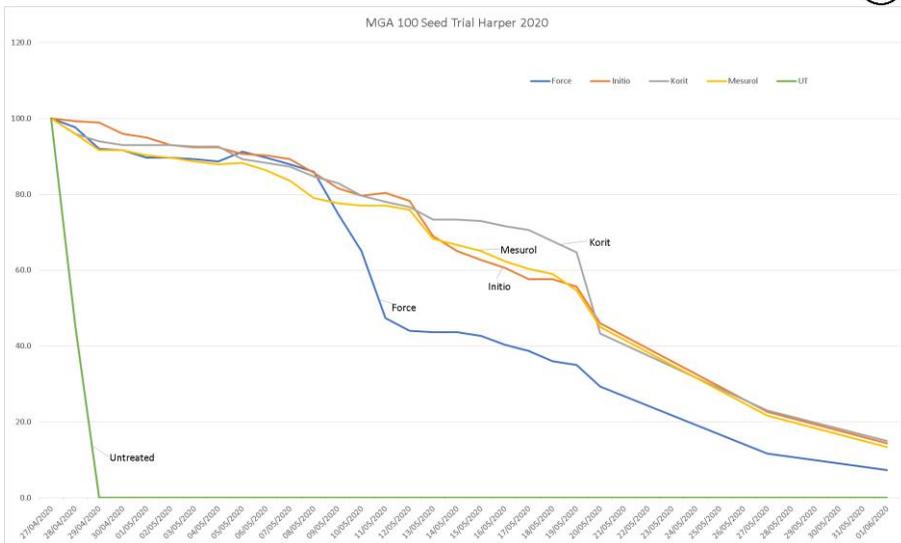


Seeds on surface untreated seed eaten

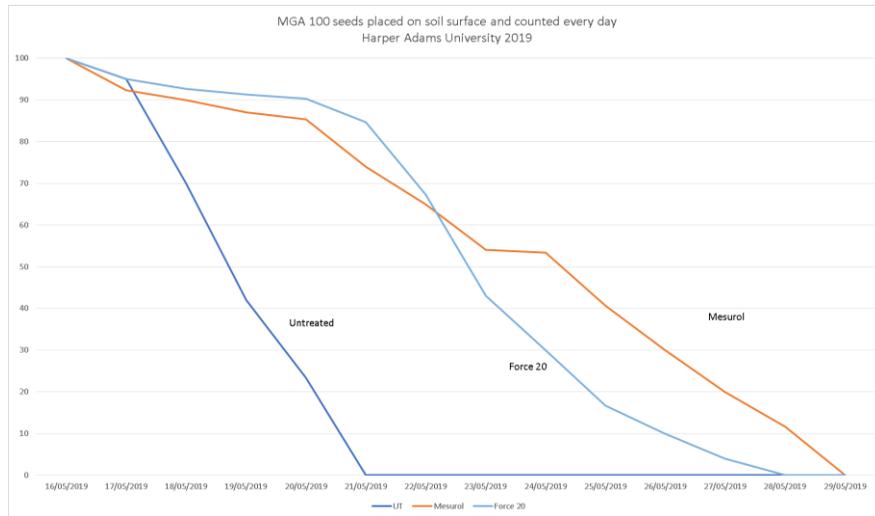


Drilled trial – Good establishment

MGA Maize seed treatment trial 2020



MGA Maize seed treatment trial 2019



take home message:

Korit is an effective bird deterrent and standard in seed offered by breeders

Force 20 is an insecticide for control of soil pests such as wireworms, available on limited varieties at extra cost. Force is also a good bird deterrent.

Clean up any field spills





Drilling Depths – Harper 2018

- Timings – April and May
- Depths – Deep (7-10cm) and Shallow (2cm)
- Mesurol and Untreated
- Deeper drilling to prevent bird damage
- Sow into warmer soils in May



Shallow (2cm)



Deep (7cm)

Plant populations – Drilling Depth Trial



Deep & shallow T. April- Harper 2018			Populations 18/6/18			
Entry	Trial	Plot	Row 1	Row 2	Row 3	Row 4
Ballade untreated shallow	April	2	85	82	64	69
Ballade untreated Deep	April	3	59	55	59	65
Ballade Mesurol Shallow	April	4	62	70	70	59
Ballade mesurol Deep	April	5	59	79	64	69
Ballade mesurol Deep	April	8	62	50	59	56
Ballade Mesurol Shallow	April	9	77	66	98	66
Ballade untreated shallow	April	10	66	69	73	68
Ballade untreated Deep	April	11	60	55	47	62
Ballade untreated shallow	April	14	6	15	8	1
Ballade untreated shallow	April	15	33	48	52	30
Ballade mesurol Deep	April	16	71	62	66	67
Ballade Mesurol Shallow	April	17	70	55	47	59
Deep & shallow T. May- Harper 2018			Populations 18/6/18			
Entry	Trial	Plot	Row 1	Row 2	Row 3	Row 4
Ballade untreated shallow	May	1	23	34	6	0
Ballade untreated Deep	May	2	86	91	86	89
Ballade Mesurol shallow	May	3	11	82	40	14
Ballade mesurol Deep	May	4	82	83	73	83
Ballade mesurol Deep	May	5	82	90	80	84
Ballade Mesurol shallow	May	6	5	18	34	2
Ballade untreated shallow	May	7	11	27	9	0
Ballade untreated Deep	May	8	84	84	87	83
Ballade untreated Deep	May	9	90	80	80	83
Ballade untreated shallow	May	10	0	0	23	1
Ballade mesurol Deep	May	11	88	85	76	89
Ballade Mesurol shallow	May	12	4	15	27	6

Drilling Depths – APRIL 21/6/18



Untreated Shallow



Untreated Deep



Mesuro Shallow



Mesuro Deep

Drilling Depths – MAY 21/6/18



Untreated Shallow



Untreated Deep



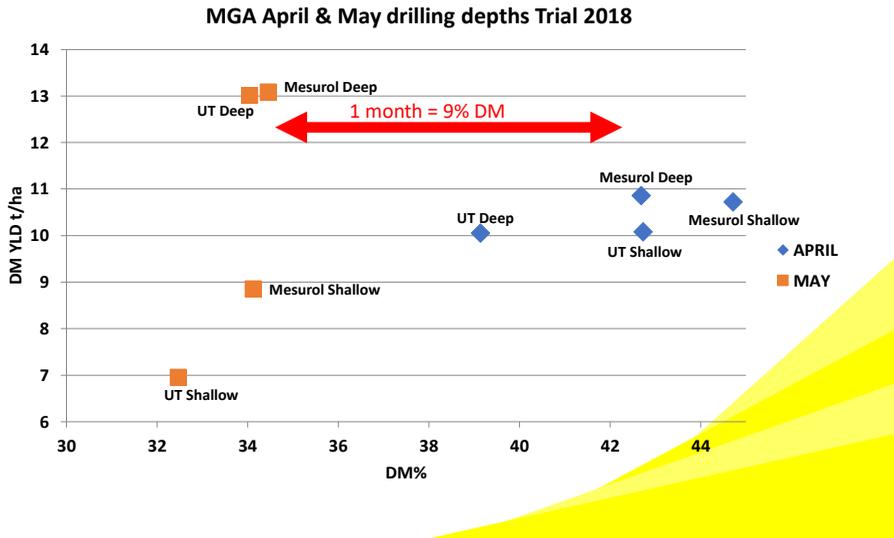
Mesuro Shallow



Mesuro Deep



DM Yield



MGA Maize drill depth treatment trial 2019



MGA Maize drill depth treatment trial 2019



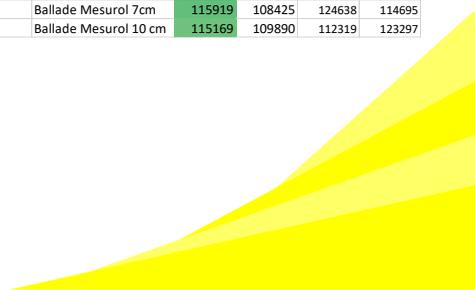
- MesuroI treated seed vs Untreated seed
- Drilled 15 April and 15 May
- 3 different drilling depths
 - 2cm soil just covering
 - 7cm (normal depth)
 - 10 cm as deep as we could drill
- Maxi Maize placement fertiliser used on all plots



MGA Maize drill depth treatment trial 2019



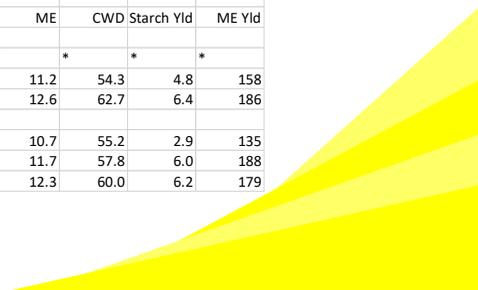
APRIL				MAY					
Plant population	Mean pop	rep 1	rep 2	rep 3	Plant population	Mean pop	rep 1	rep 2	rep 3
Ballade UT 2cm	22669	0	29710	38298	Ballade UT 2cm	956	0	0	2867
Ballade UT 7cm	103263	107092	93478	109220	Ballade UT 7cm	101751	104029	113768	87455
Ballade UT 10cm	112288	119149	99275	118440	Ballade UT 10cm	109190	106227	118116	103226
Ballade MesuroI 2cm	76190	100709	76087	51773	Ballade MesuroI 2cm	97955	116484	96377	81004
Ballade MesuroI 7cm	118332	119858	118116	117021	Ballade MesuroI 7cm	115919	108425	124638	114695
Ballade MesuroI 10 cm	108603	112057	113043	100709	Ballade MesuroI 10 cm	115169	109890	112319	123297



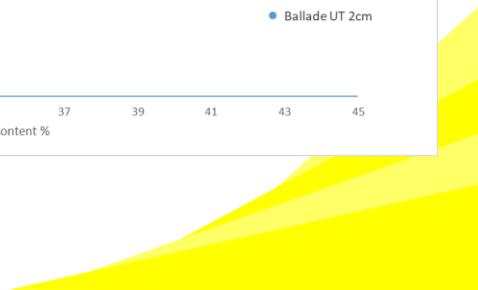
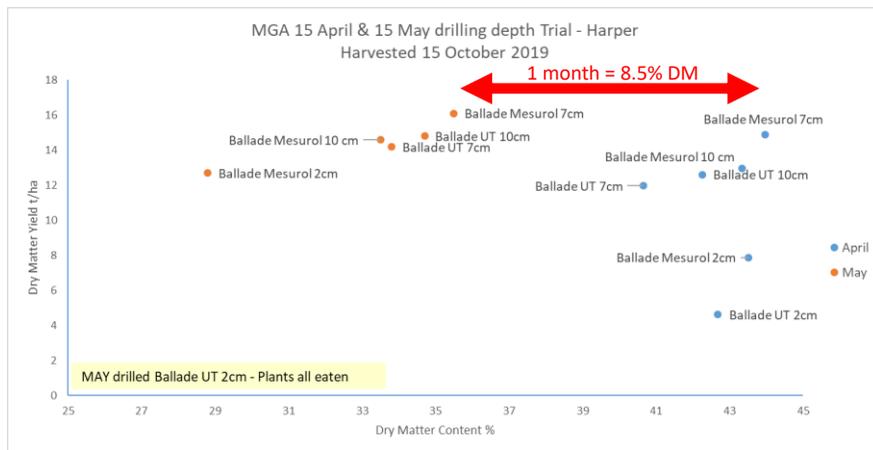
MGA Maize drill depth treatment trial 2019



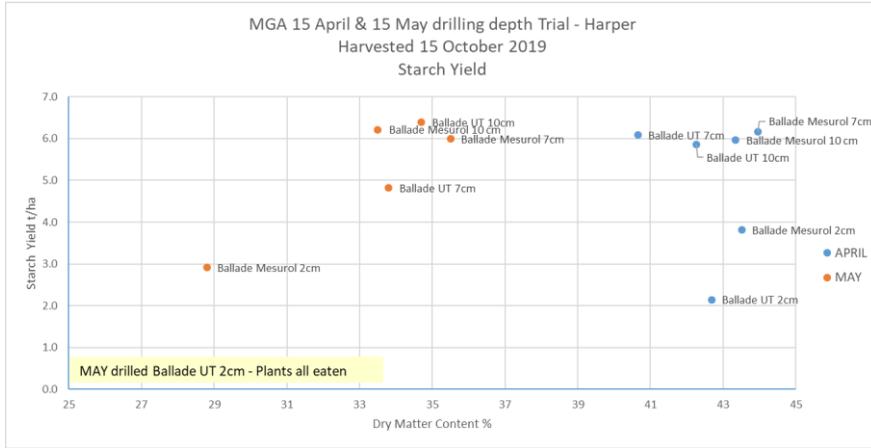
APRIL								
	Mean pop	DM%	DMYLD	Starch	ME	CWD	Starch yld	ME Yield
Ballade UT 2cm	22669	42.7	4.6	46.3	12.7	63.1	2.1	59
Ballade UT 7cm	103263	40.7	12.0	50.8	13.2	64.8	6.1	158
Ballade UT 10cm	112288	42.3	12.6	46.4	12.6	60.9	5.9	159
Ballade Mesuro1 2cm	76190	43.5	7.9	48.4	13.0	64.1	3.8	102
Ballade Mesuro1 7cm	118332	44.0	14.9	41.4	12.0	58.7	6.2	179
Ballade Mesuro1 10 cm	108603	43.3	12.9	46.1	12.8	63.0	6.0	165
MAY								
	Mean pop	DM%	DMYLD	Starch %	ME	CWD	Starch Yld	ME Yld
Ballade UT 2cm	956	0.0	0.0 *	*	*	*	*	*
Ballade UT 7cm	101751	33.8	14.2	34.0	11.2	54.3	4.8	158
Ballade UT 10cm	109190	34.7	14.8	43.2	12.6	62.7	6.4	186
Ballade Mesuro1 2cm	97955	28.8	12.7	23.0	10.7	55.2	2.9	135
Ballade Mesuro1 7cm	115919	35.5	16.1	37.2	11.7	57.8	6.0	188
Ballade Mesuro1 10 cm	115169	33.5	14.6	42.5	12.3	60.0	6.2	179



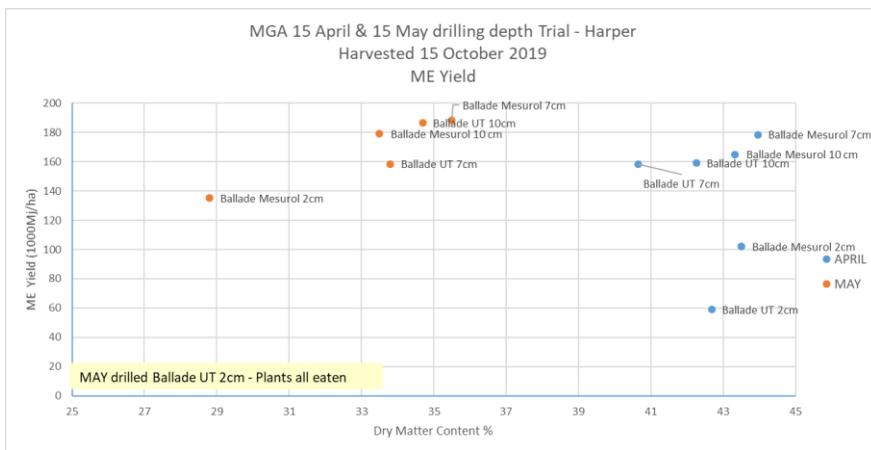
MGA Maize drill depth treatment trial 2019



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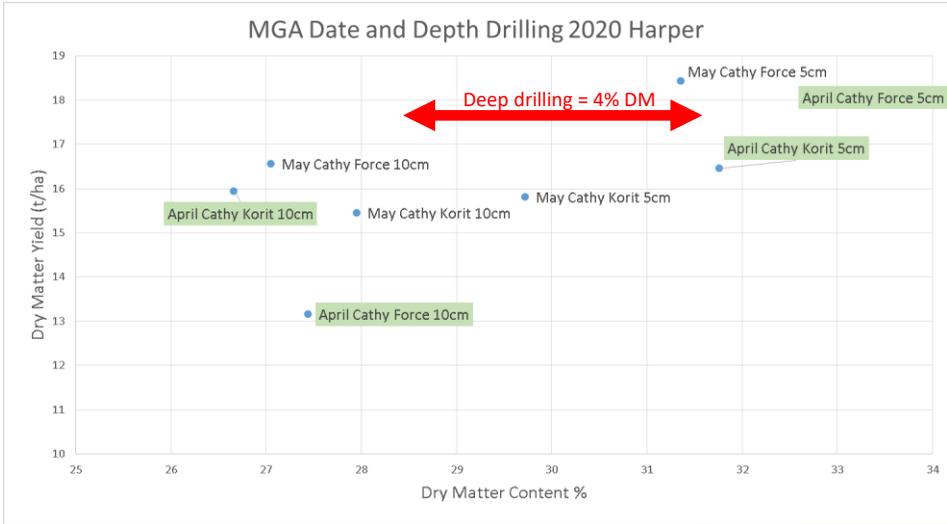


- Korit treated seed Force 20 seed
- Drilled 22 April and ?? May
- 2 different drilling depths
5 cm (normal depth)
10 cm as deep as we could drill
- Maxi Maize placement fertiliser used on all plots
- No plant losses due to bird damage
- Good warm spring ensured rapid establishment
- No differences in plant vigour within drilling date
- May drilled plants 1 vigour score less than April drilled (2 leaves)

MGA Maize drill depth treatment trial 2020



	Dry Matter	DM YLD	Starch Conter	ME	CWD %	Starch yield	ME Yield
	%	t/ha	%	Mj/kg		t/ha	1000Mj/ha
April Cathy Force 10cm	27.44	13.16	18.48	10.76	55.11	2.4	142
April Cathy Force 5cm	32.87	18.06	27.61	11.81	59.81	5.0	213
April Cathy Korit 10cm	26.66	15.95	22.97	11.26	55.36	3.7	180
April Cathy Korit 5cm	31.76	16.46	23.73	11.22	57.67	3.9	185
May Cathy Force 10cm	27.05	16.56	23.64	11.36	57.43	3.9	188
May Cathy Force 5cm	31.35	18.44	30.45	11.69	57.47	5.6	216
May Cathy Korit 10cm	27.95	15.45	28.94	11.45	57.59	4.5	177
May Cathy Korit 5cm	29.72	15.81	30.36	11.26	53.99	4.8	178



take home message:

April drilling when seedbed conditions are correct results in an earlier harvest and higher dry matters

+ 8% dry matter = 2% increase per week rule

Drill to moisture level in soil, but excessive deep drilling will result in lower dry matter and starch content even in good spring

Organic maize must be drilled deep, birds can reduce plant establishment even at 7cm depth

Aureobasidium zeae- Eyespot

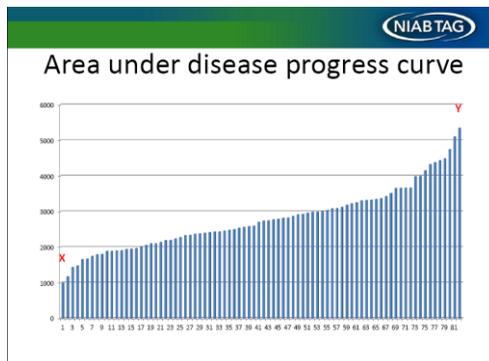


- Potential for large yield losses
- Tends to be regional but becoming more widespread
- Development favoured by cool, wet conditions >30°C
- Can be controlled with fungicide sprays and management techniques

NIAB Eyespot rating on MGA variety list



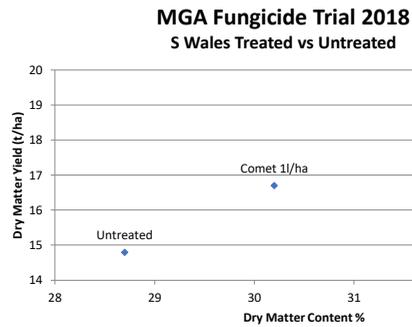
- All varieties get eyespot
- Emmerson 1.9 to Farmunox 8.9
If in high infection area must spray whatever
- Fungicides give 6 weeks protection





Eyespot – Carmarthen 2018

- No disease present in trial
- 7 treatments

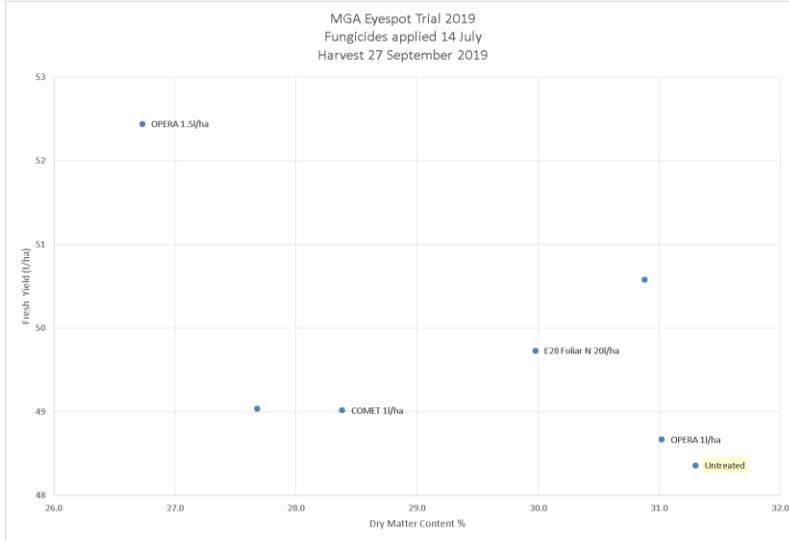


Eyespot – Carmarthen 2019

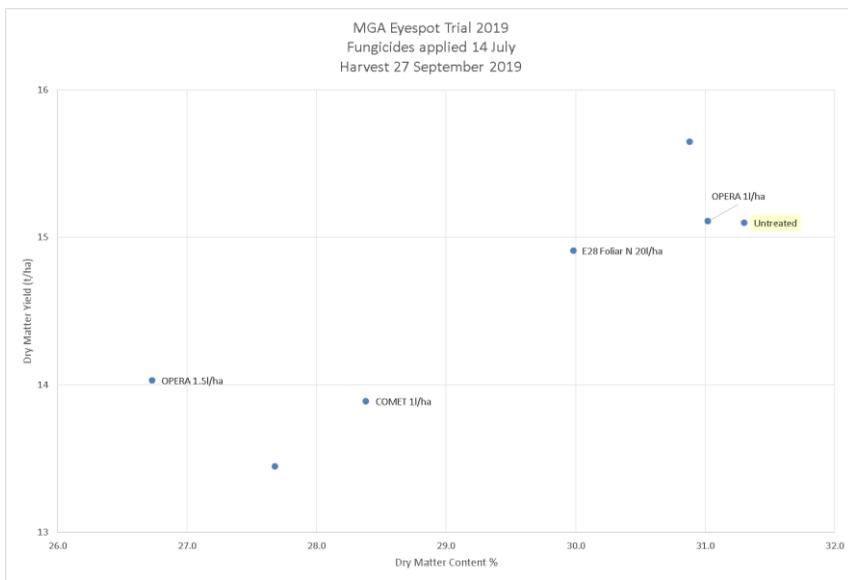
Treatment		Northern Leaf Blight	Eyespot %	GREEN %
UT		8.0	0.3	70.8
COMET	1l/ha	5.5	0.2	78.3
	0.8l/ha	8.0	0.1	77.0
	1.2l/ha	7.8	0.6	78.0
OPERA	1.5l/ha	6.0	0.4	80.8
OPERA	1l/ha	8.2	0.0	76.7
Efficient 28	20l/ha	7.3	0.3	77.5



Eyespot – Carmarthen 2019

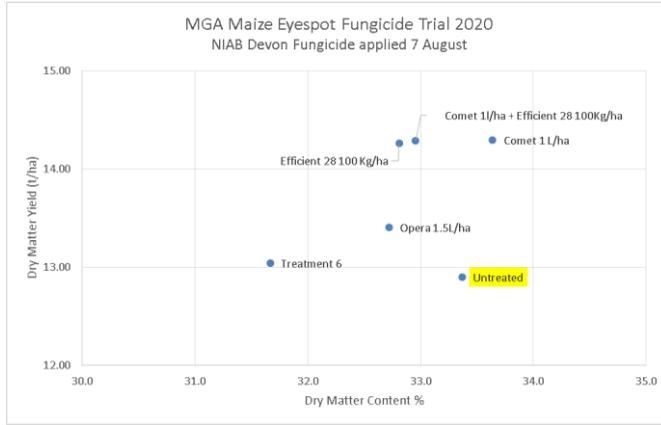


Eyespot – Carmarthen 2019

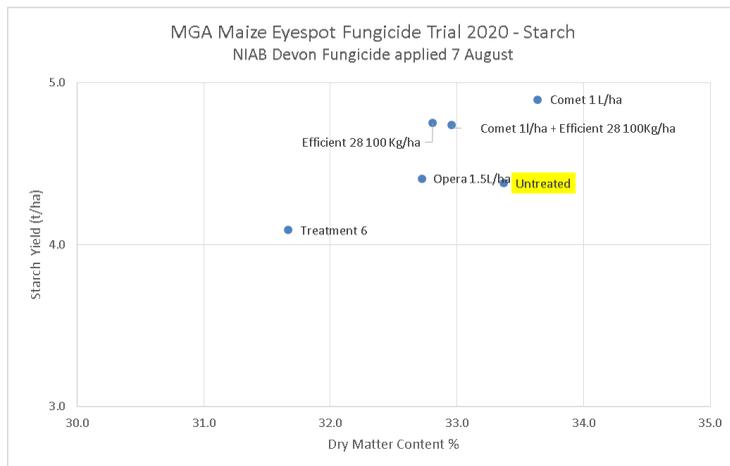




Eyespot – NIAB Devon 2020

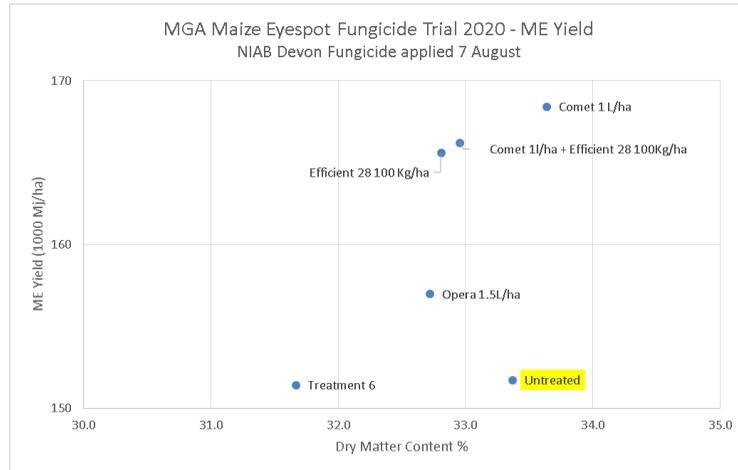


Eyespot – NIAB Devon 2020





Eyespot – NIAB Devon 2020



take home message:

Where eyespot is a risk the application of 1l/ha Comet should be applied

Keeping the leaf greener may result in slightly lower dry matter

Healthy leaves are better for the cows?