



MAIZE TRIALS 2019

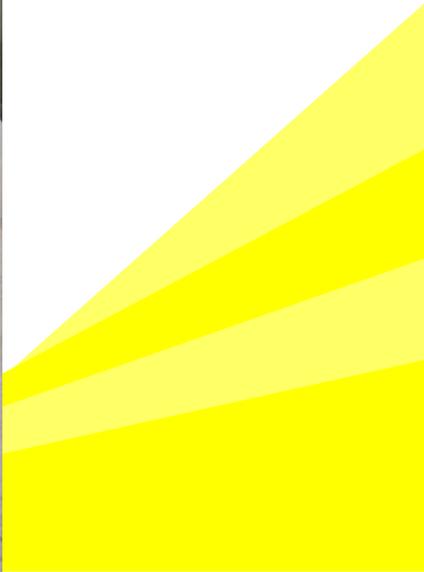


- MGA Seed treatment trial – CERC, Harper Adams University
100 seeds
Field trial
- MGA Depth of drilling trial
- MGA Grass undersowing trial
- MGA Eyespot Trial – S Wales
- MGA Cover crop Trial - Norfolk

MGA Maize seed treatment trial 2019



- Non renewal of Methiocarb (Mesurol) approval creates a threat to successful maize establishment
- Repeat of 2018 MGA trial
- 100 seeds placed on soil surface and counted every day
- 2020 seed dressings – some seeds treated with mesurol and applied before 3rd Jan
- Korit (ziram ai) identified as best alternative by breeders.
 - Registered poison works by vapour release
 - Care for seed handling at drilling – must use PPE
 - Approved for use until 30 April 2021
 - Bird repellent only
- If you require insecticide due to grassland pests use Force 20



MGA Maize seed treatment trial 2019



Sonido dressed seed

Photo courtesy of Phil Campion Agrovista

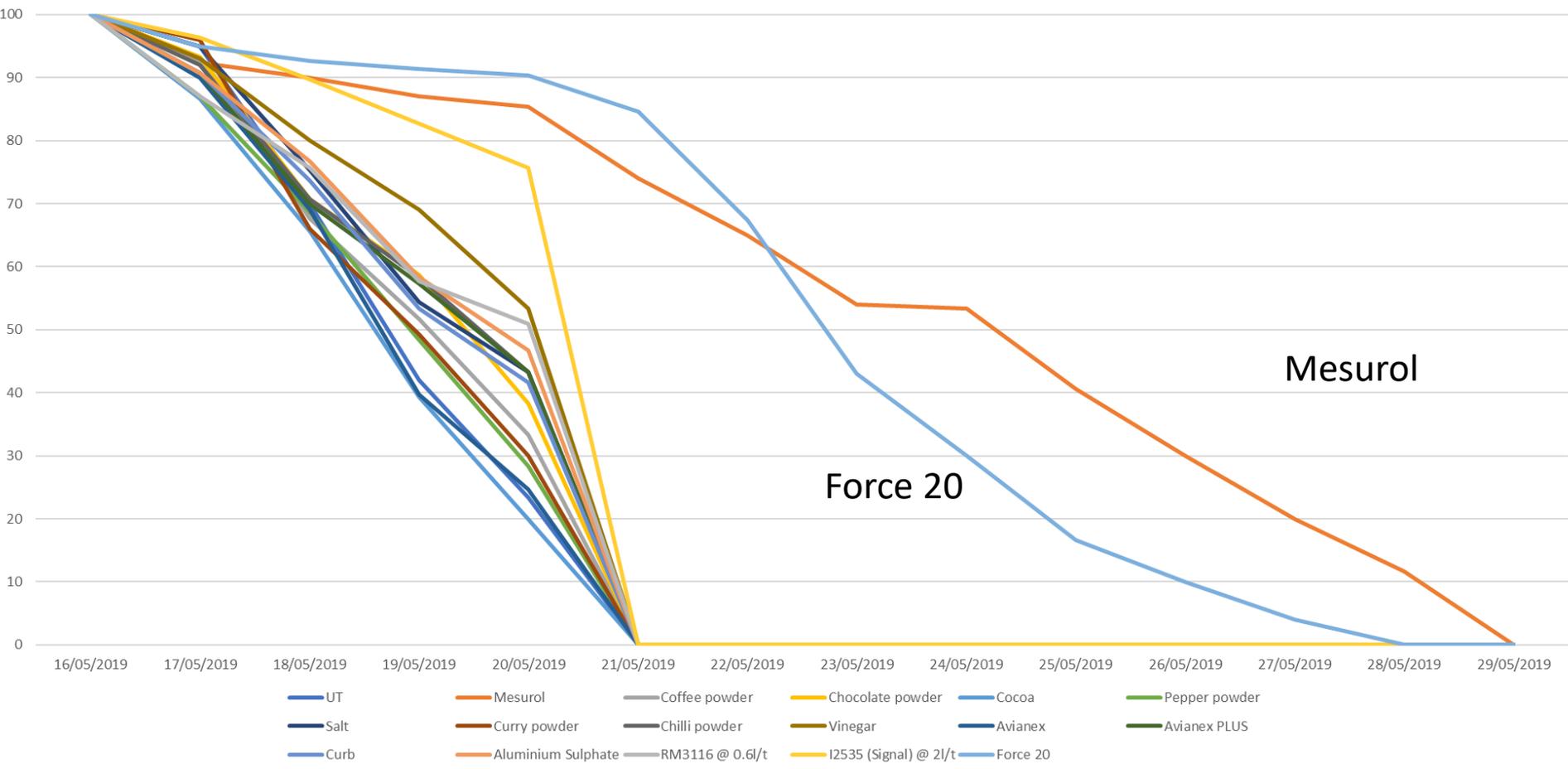


Sonido + Korit

MGA Maize seed treatment trial 2019



MGA 100 seeds placed on soil surface and counted every day
Harper Adams University 2019



Mesurol

Force 20

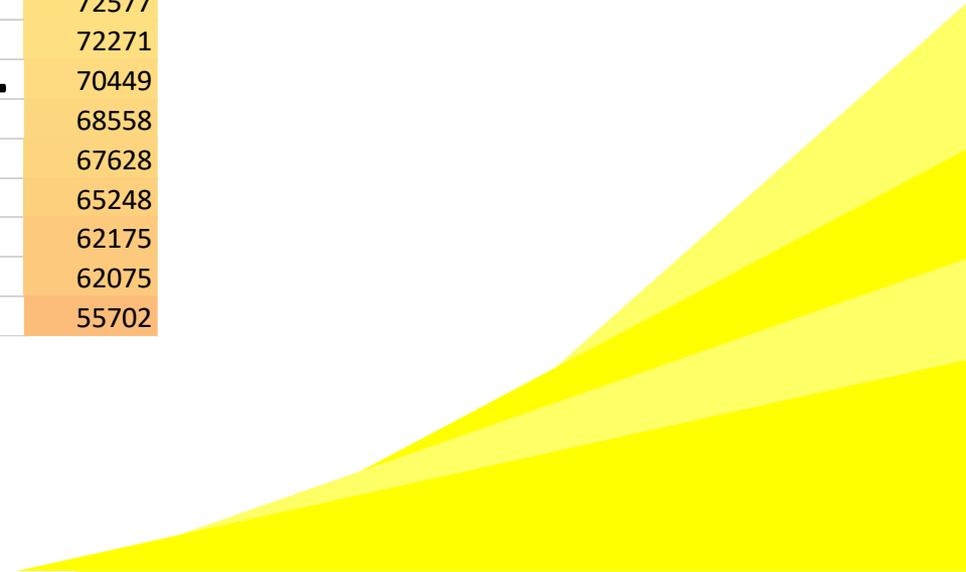


MGA Maize seed treatment trial 2019



	Population established			Mean
	Rep 1	Rep 2	Rep 3	
Mesurool	89362	101418	93633	94804
UT	82963	65957	70922	73281
I2535 (Signal) @ 2l/t	79259	96454	78652	84788
Chilli powder	87407	102128	62411	83982
Curb soil applied	85926	84397	79401	83241
Cocoa	82979	59574	96629	79727
RM3116 @ 0.6l/t	99259	88652	46442	78118
Salt	88889	65248	77903	77347
Chocolate powder	77037	70922	74906	74288
Coffee powder	100000	80142	37589	72577
Curb	100000	67376	49438	72271
Vinegar	86525	93617	31206	70449
Force 20	56738	60284	88652	68558
Avianex PLUS	84444	103546	14894	67628
Aluminium Sulphate	106383	73759	15603	65248
Avianex	63830	87234	35461	62175
Pepper powder	76296	78014	31915	62075
Curry powder	83688	drill error	27715	55702

Large hedge



MGA Maize seed treatment trial 2019

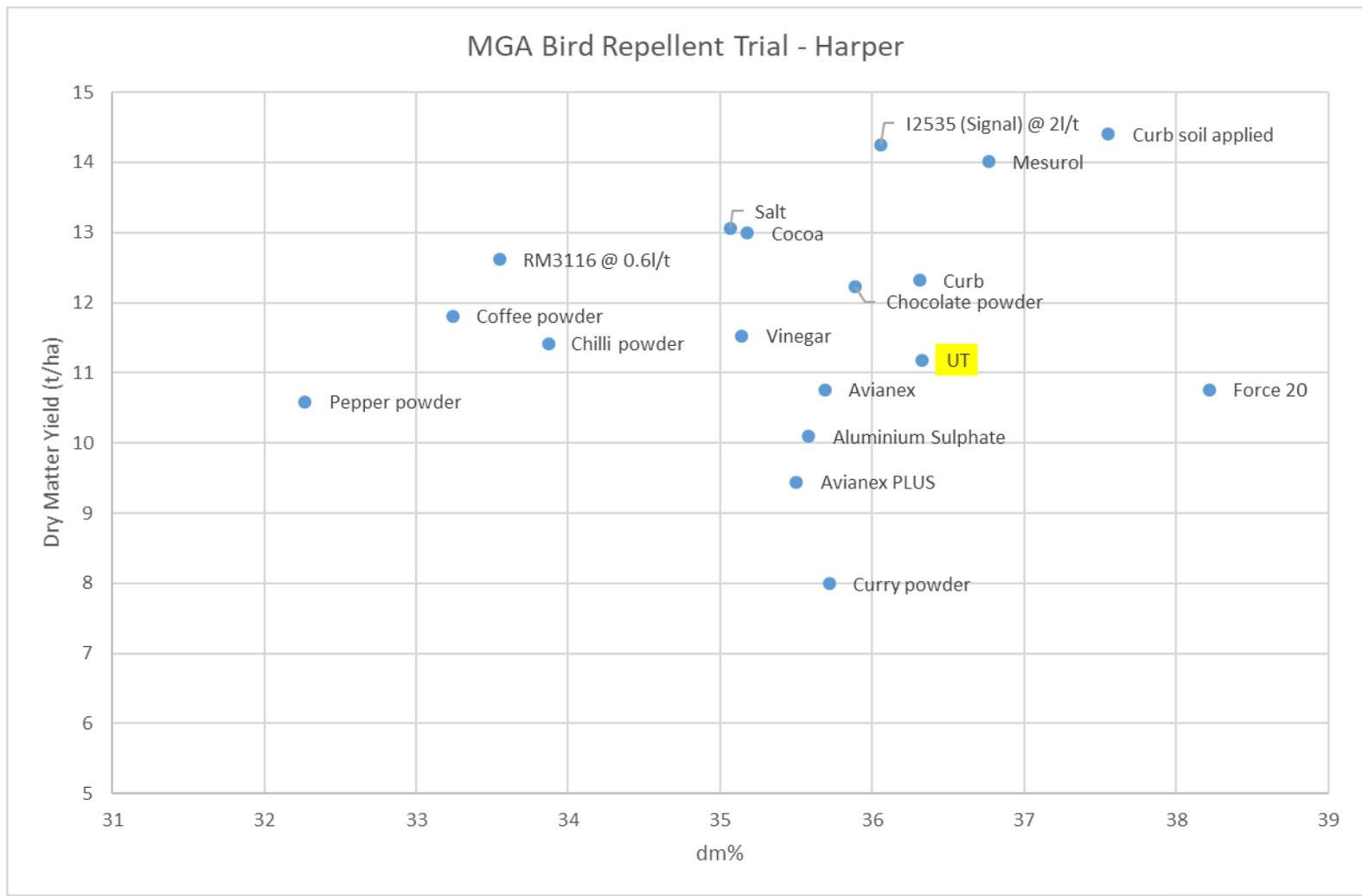


MGA Maize seed treatment trial 2019

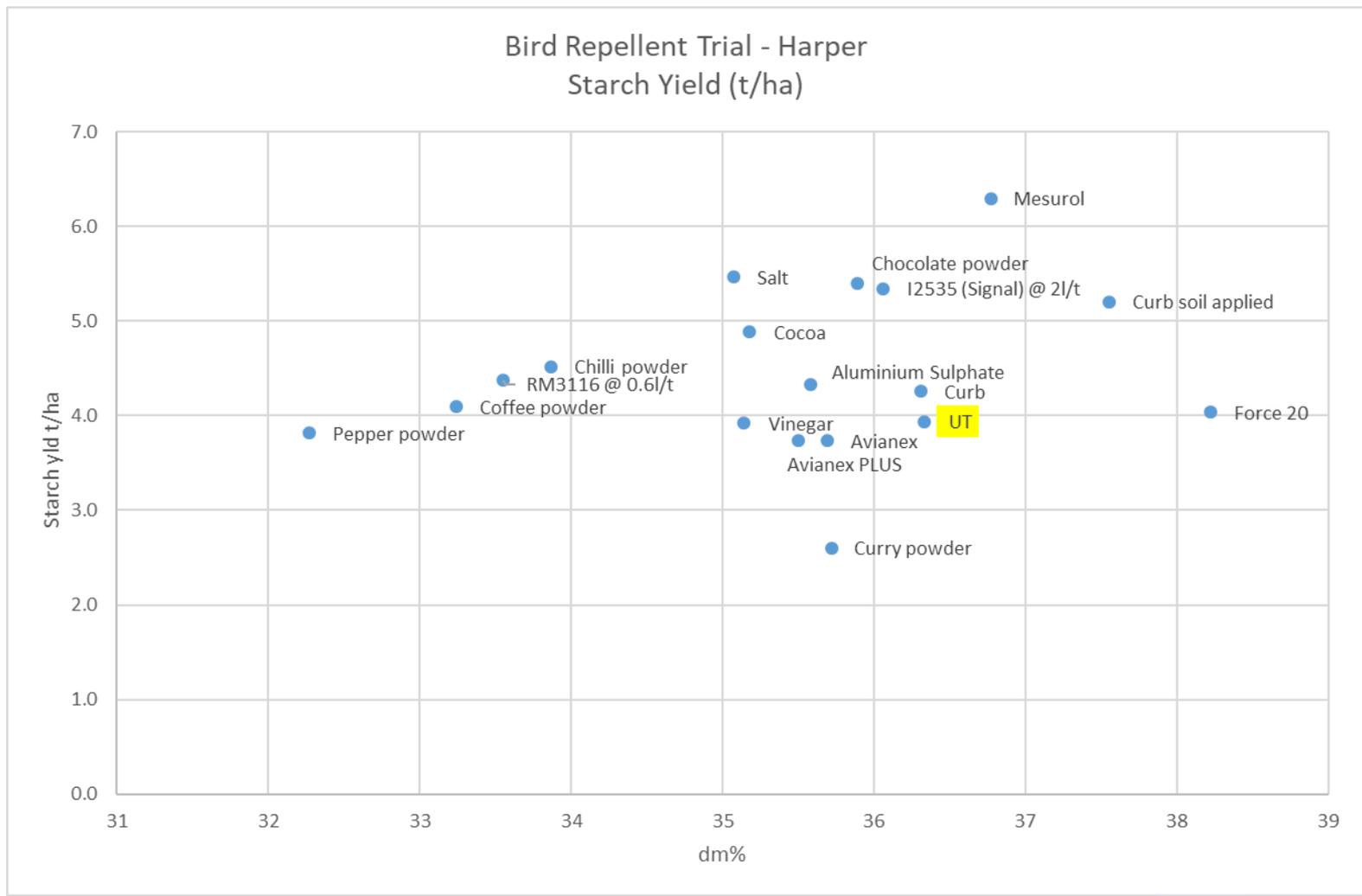


	Mean Pop	DM%	Fresh Yld	DM Yield	Starch %	ME	CWD	Starch Yield	ME Yield
MesuroI	94804	36.8	38.1	14.0	45.0	12.7	62.2	6.3	177
UT	73281	36.3	30.9	11.2	35.2	11.6	58.1	3.9	130
I2535 (Signal) @ 2l/t	84788	36.1	39.5	14.3	37.5	12.0	59.6	5.3	170
Chilli powder	83982	33.9	33.9	11.4	39.6	12.0	59.0	4.5	137
Curb soil applied	83241	37.6	38.2	14.4	36.2	11.6	56.2	5.2	167
Cocoa	79727	35.2	36.9	13.0	37.6	12.3	63.2	4.9	159
RM3116 @ 0.6l/t	78118	33.6	37.3	12.6	34.7	11.6	58.3	4.4	146
Salt	77347	35.1	37.3	13.1	41.9	12.3	59.9	5.5	160
Chocolate powder	74288	35.9	34.1	12.2	44.2	12.6	63.3	5.4	155
Coffee powder	72577	33.2	35.4	11.8	34.7	11.4	55.6	4.1	135
Curb	72271	36.3	34.2	12.3	34.6	11.6	57.6	4.3	142
Vinegar	70449	35.1	32.7	11.5	34.0	11.1	53.2	3.9	128
Force 20	68558	38.2	27.8	10.8	37.5	11.8	58.5	4.0	127
Avianex PLUS	67628	35.5	26.3	9.4	39.6	11.7	55.8	3.7	111
Aluminium Sulphate	65248	35.6	28.1	10.1	42.9	12.1	57.0	4.3	122
Avianex	62175	35.7	30.2	10.8	34.7	11.8	59.3	3.7	127
Pepper powder	62075	32.3	32.4	10.6	36.1	11.5	55.7	3.8	122
Curry powder	55702	35.7	22.4	8.0	32.6	11.1	54.9	2.6	88

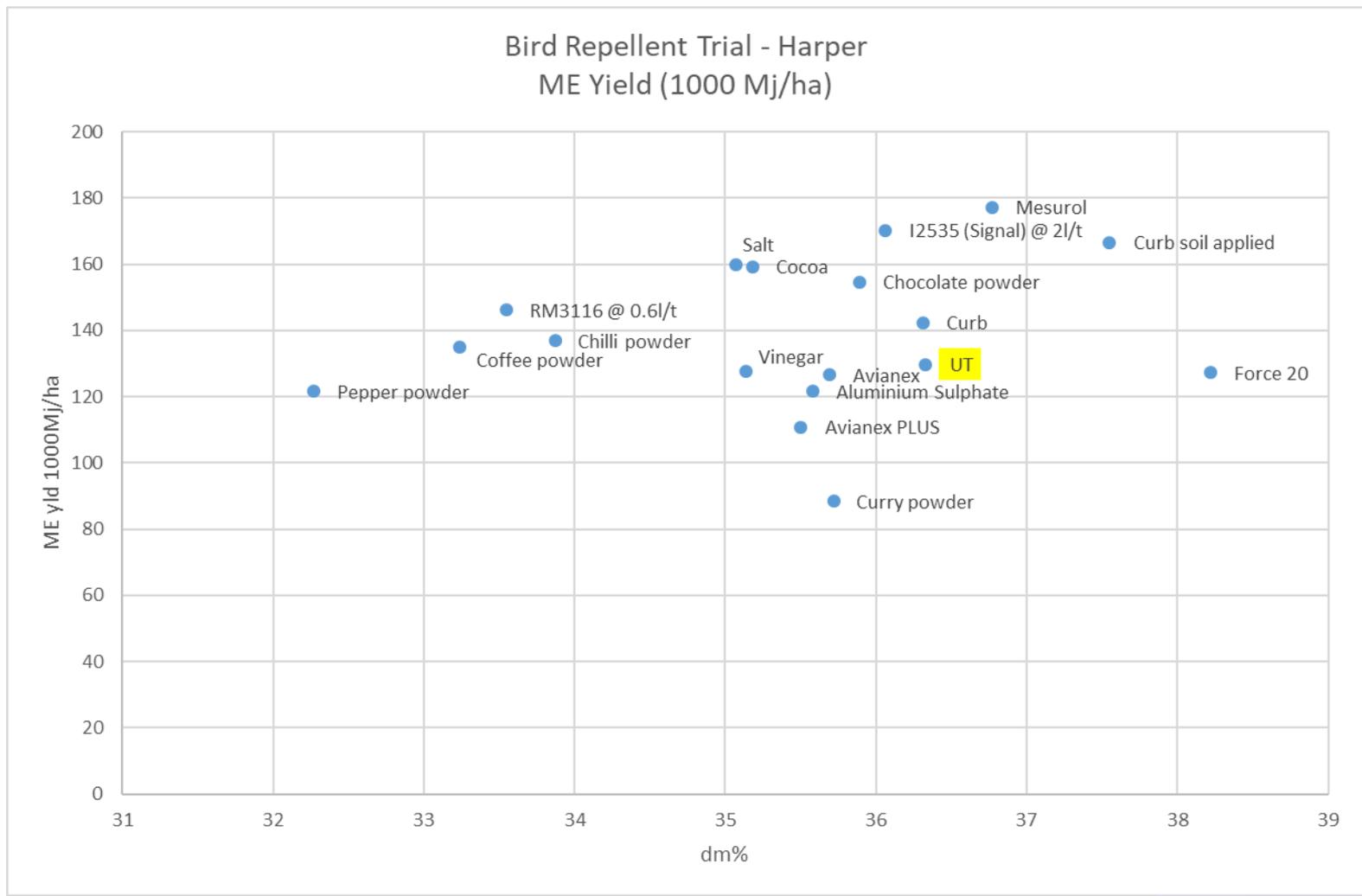
MGA Maize seed treatment trial 2019



MGA Maize seed treatment trial 2019



MGA Maize seed treatment trial 2019



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



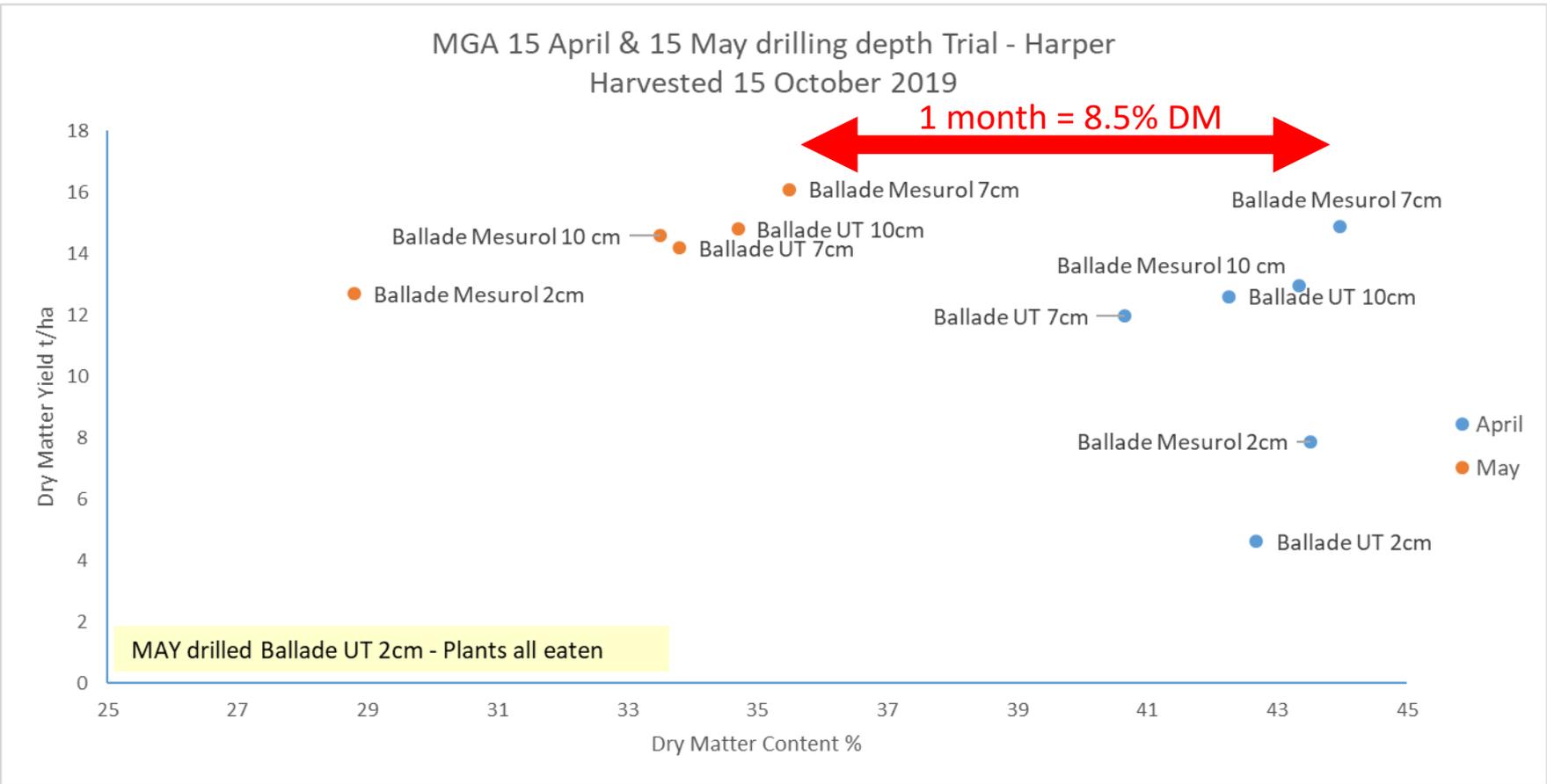
APRIL					MAY				
Plant population	Mean pop	rep 1	rep 2	rep 3	Plant population	Mean pop	rep 1	rep 2	rep 3
Ballade UT 2cm	22669	0	29710	38298	Ballade UT 2cm	956	0	0	2867
Ballade UT 7cm	103263	107092	93478	109220	Ballade UT 7cm	101751	104029	113768	87455
Ballade UT 10cm	112288	119149	99275	118440	Ballade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

MGA Maize drill depth treatment trial 2019

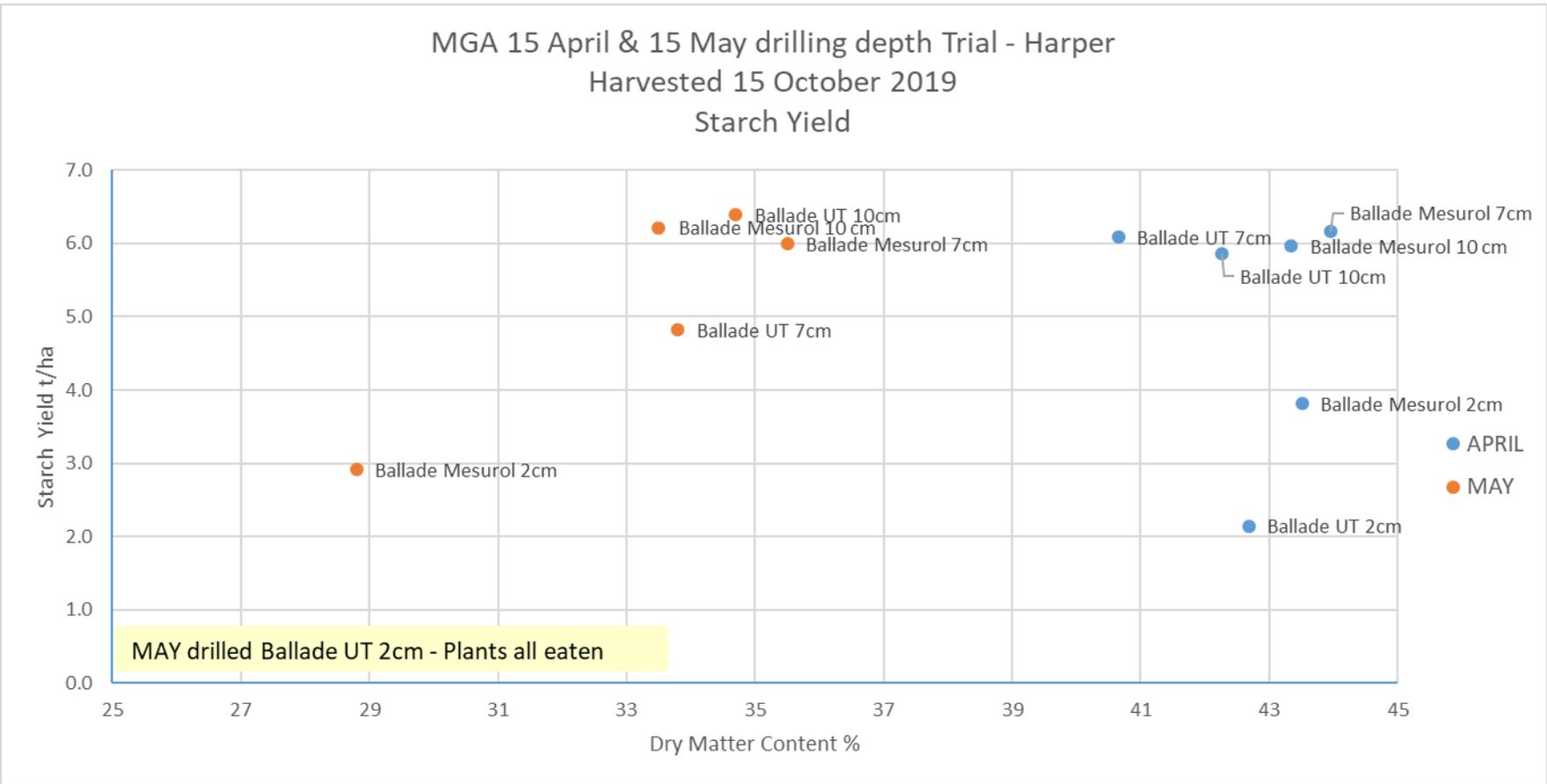


APRIL								
	Mean pop	DM%	DMYLD	Starch	ME	CWD	Starch yld	ME Yield
Ballade UT 2cm	22669	42.7	4.6	46.3	12.7	63.1	2.1	59
Ballade UT 7cm	103263	40.7	12.0	50.8	13.2	64.8	6.1	158
Ballade UT 10cm	112288	42.3	12.6	46.4	12.6	60.9	5.9	159
Ballade Mesurol 2cm	76190	43.5	7.9	48.4	13.0	64.1	3.8	102
Ballade Mesurol 7cm	118332	44.0	14.9	41.4	12.0	58.7	6.2	179
Ballade Mesurol 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 Mesurol 2cm	97955	28.8	12.7	23.0	10.7	55.2	2.9	135
Ballade Mesurol 7cm	115919	35.5	16.1	37.2	11.7	57.8	6.0	188
Ballade Mesurol 10 cm	115169	33.5	14.6	42.5	12.3	60.0	6.2	179

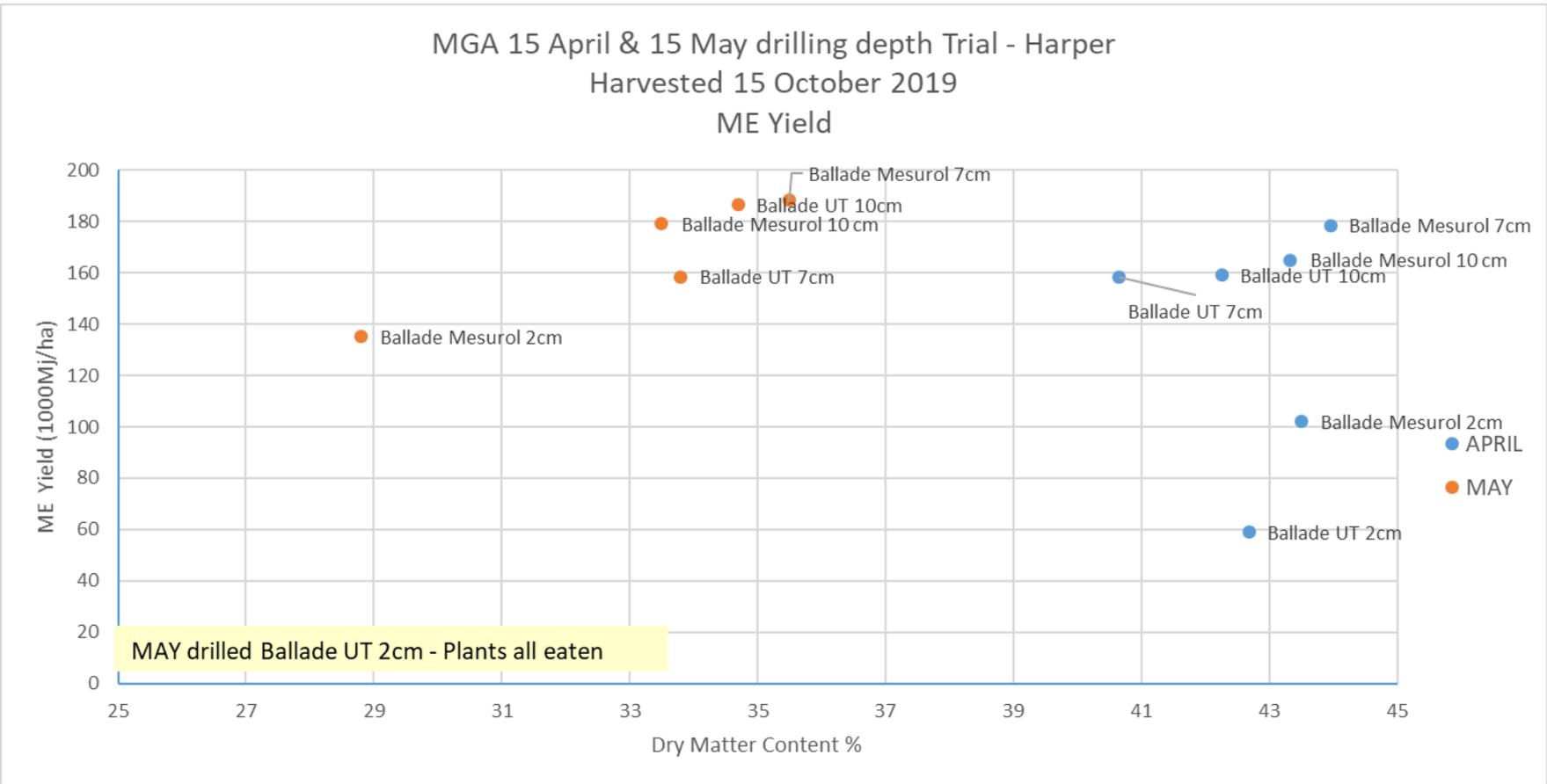
MGA Maize drill depth treatment trial 2019



MGA Maize drill depth treatment trial 2019



MGA Maize drill depth treatment trial 2019



MGA undersowing grass trial 2019



- Grass drilled, harrowed in or surface broadcast
- 3 different seed rates
- At maize drilling or 6 weeks later when maize 20 cm tall
- Chicory and grass + Vetch also tried
- No pre em herbicide or nicosulfuron based herbicide used

MGA undersowing grass trial 2019



10kg/ha drilled



10kg/ha harrowed

10kg/ha broadcast



MGA undersowing grass trial 2019

Grass seeded at Maize drilling



MGA Grass undersowing trial - Harper Adams University													
Maize drilled 15 May 2019													
Grass applied 16 May 2019													
Harvested 10 October 2019													
Treat.	Plant ht	Plant ht	DM%	Fresh Yield	Dry Yield t	Starch %	Digestibil	ME	CWD	Starch Yie	ME Yield	Grass cover	Grass cover
	12/07/2019	21/08/2019										02/09/2019	06/02/2020
Maize only	75	185	32.2	44.0	20.0	34.23	72.6	11.62	58.03	6.8	232	0	0
Grass 5kg Drill	70	170	32.0	32.1	13.7	41.87	78.1	12.49	62.82	5.7	171	5	5
Grass 10kg Drill	65	160	33.0	31.9	14.8	39.07	71.3	11.41	53.28	5.8	169	10	10
Grass 20kg Drill	57	140	30.9	21.7	8.9	36.74	71.5	11.44	54.57	3.3	102	90	85
Grass 5kg Broad	72	170	33.0	39.9	18.5	34.95	70.5	11.28	54.74	6.5	209	20	15
Grass 10 kg Broad	73	180	35.7	38.0	18.1	35.53	73.8	11.80	59.11	6.4	213	90	85
Grass 20kg Broad	73	180	33.8	36.1	17.2	32.87	67.9	10.86	52.86	5.6	187	80	80
Grass 5kg Harrow	72	170	29.5	35.6	14.8	38.97	73.9	11.83	57.33	5.8	175	85	80
Grass 10kg Harrow	77	190	33.0	43.5	20.2	36.02	71.4	11.43	55.16	7.3	231	65	40
Grass 20kg Harrow	78	190	28.5	41.3	16.6	36.81	72.1	11.53	56.09	6.1	191	85	80
Grass 10kg + Vetch 10kg Drill	67	160	30.8	27.8	12.0	39.46	76.2	12.19	61.70	4.8	147	85	80
Chicory 2.5kg Drill	78	190	31.0	36.3	15.9	30.39	66.1	10.58	51.76	4.8	168	5	5

MGA undersowing grass trial 2019

Grass seeded at Maize drilling



1st week of July maize suffering where grass seed drilled at same time as maize.

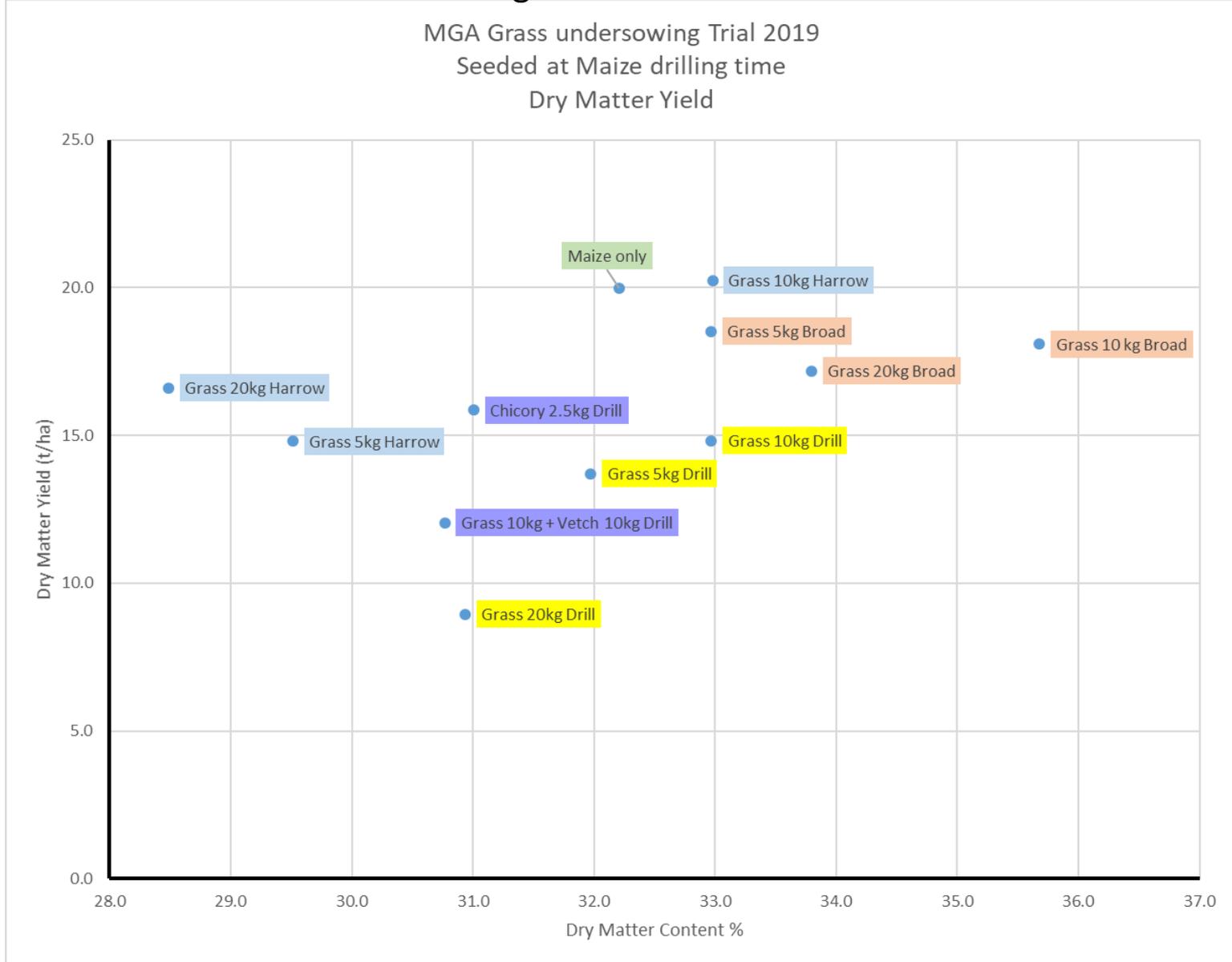
Chicory much less competitive



MGA undersowing grass trial 2019



Grass seeded at Maize drilling



MGA undersowing grass trial 2019

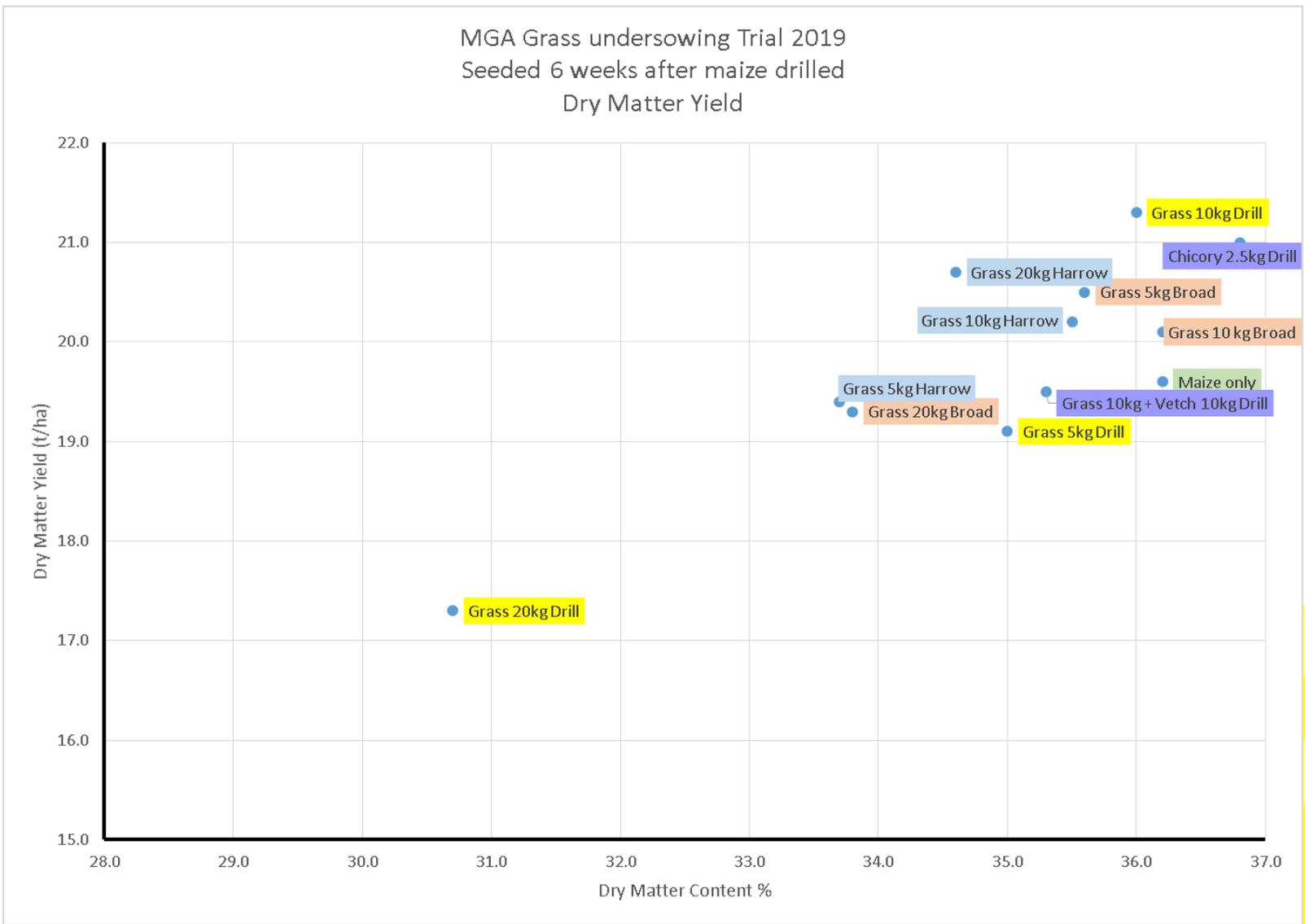
Grass seeded 6 weeks after Maize drilling



MGA Grass undersowing trial - Harper Adams University													
Maize drilled 15 May 2019													
Grass applied 26 June 2019													
Harvested 10 October 2019													
Treat.	Plant ht	Plant ht	DM%	Fresh Yield	Dry Yield †	Starch %	Digestibili	ME	CWD	Starch Yie	ME Yield	Grass covg	Grass covg
	12/07/2019	21/08/2019										02/09/2019	06/02/2020
Maize only	93	206	36.2	38.9	19.6	38.46	74.4	11.90	57.53	7.5	233		
Grass 5kg Drill	93	206	35.0	39.4	19.1	32.86	71.8	11.48	58.57	6.3	219	16.3	6.3
Grass 10kg Drill	97	214	36.0	42.6	21.3	39.44	74.0	11.84	58.11	8.4	252	31.3	18.8
Grass 20kg Drill	92	201	30.7	40.5	17.3	34.81	70.7	11.31	54.24	6.0	196	32.5	22.5
Grass 5kg Broad	93	205	35.6	41.3	20.5	28.05	67.9	10.86	55.78	5.8	223	7.5	3.8
Grass 10 kg Broad	91	201	36.2	39.9	20.1	42.17	77.6	12.41	61.59	8.5	249	8.8	3.8
Grass 20kg Broad	93	204	33.8	41.3	19.3	37.97	74.7	11.95	59.17	7.3	231	31.3	11.3
Grass 5kg Harrow	95	211	33.7	41.5	19.4	29.77	68.5	10.96	54.19	5.8	213	16.3	6.3
Grass 10kg Harrow	97	214	35.5	41.2	20.2	40.63	75.5	12.08	58.34	8.2	244	22.5	12.5
Grass 20kg Harrow	92	201	34.6	42.9	20.7	34.65	70.0	11.20	54.21	7.2	232	37.5	12.5
Grass 10kg + Vetch 10kg Drill	90	198	35.3	39.8	19.5	40.51	76.1	12.18	59.07	7.9	238	21.3	10.0
Chicory 2.5kg Drill	94	208	36.8	41.1	21.0	43.21	78.1	12.49	61.62	9.1	262	6.3	1.3

MGA undersowing grass trial 2019

Grass seeded 6 weeks after Maize drilling



MGA undersowing grass trial 2019



2.5kg/ha Chicory
15 May



10kg/ha Grass
15 May



10kg/ha Grass
26 June

MGA undersowing grass trial 2019



- If wanting to seed at maize drilling time then broadcast seed, but you will lose 5t/ha fresh yield
- If seeding 6 weeks after maize drilling then need to drill at 10kg/ha or harrow seed in at 10-20kg/ha. BUT dependent on weather conditions at time of sowing.

MGA Maize Eyespot trial 2019 - Carmarthen



Treatments applied 14th July 2019

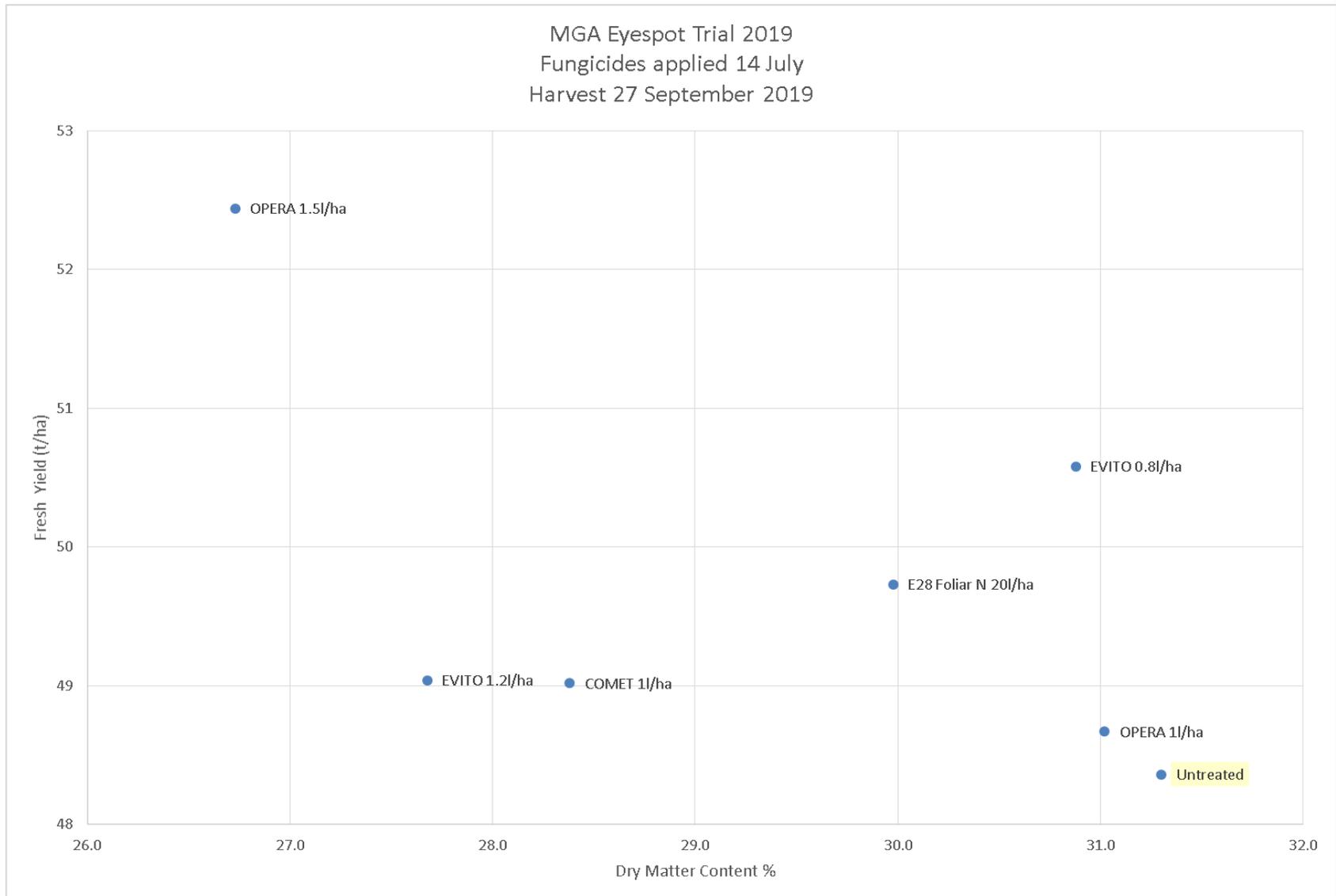
No eyespot recorded in trial at harvest

No control of Northern leaf blight

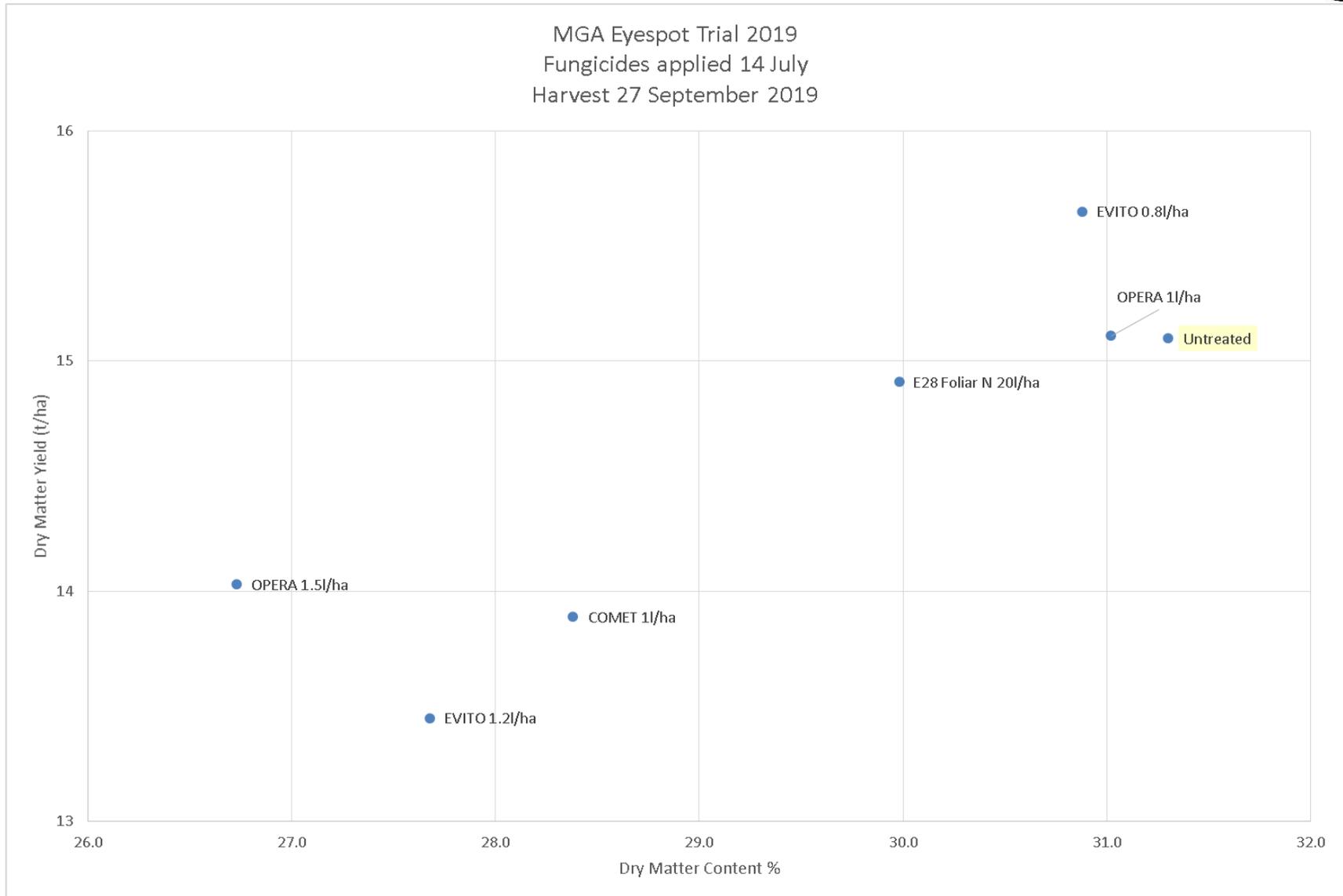
Fungicides retained green leaf and resulted in lower dry matters

Treatment		Northern Leaf Blight	Eyespot %	GREEN %	Population TH/ha
UT		8.0	0.3	70.8	72.4
COMET	1l/ha	5.5	0.2	78.3	72.9
EVITO	0.8l/ha	8.0	0.1	77.0	70.4
EVITO	1.2l/ha	7.8	0.6	78.0	70.4
OPERA	1.5l/ha	6.0	0.4	80.8	75.1
OPERA	1l/ha	8.2	0.0	76.7	70.2
Efficient 28	20l/ha	7.3	0.3	77.5	72.9

MGA Maize Eyespot trial 2019 - Carmarthen



MGA Maize Eyespot trial 2019 - Carmarthen



MGA Cover Crop Trial 2019-2020



MGA Cover Crop Trial 2019-2020

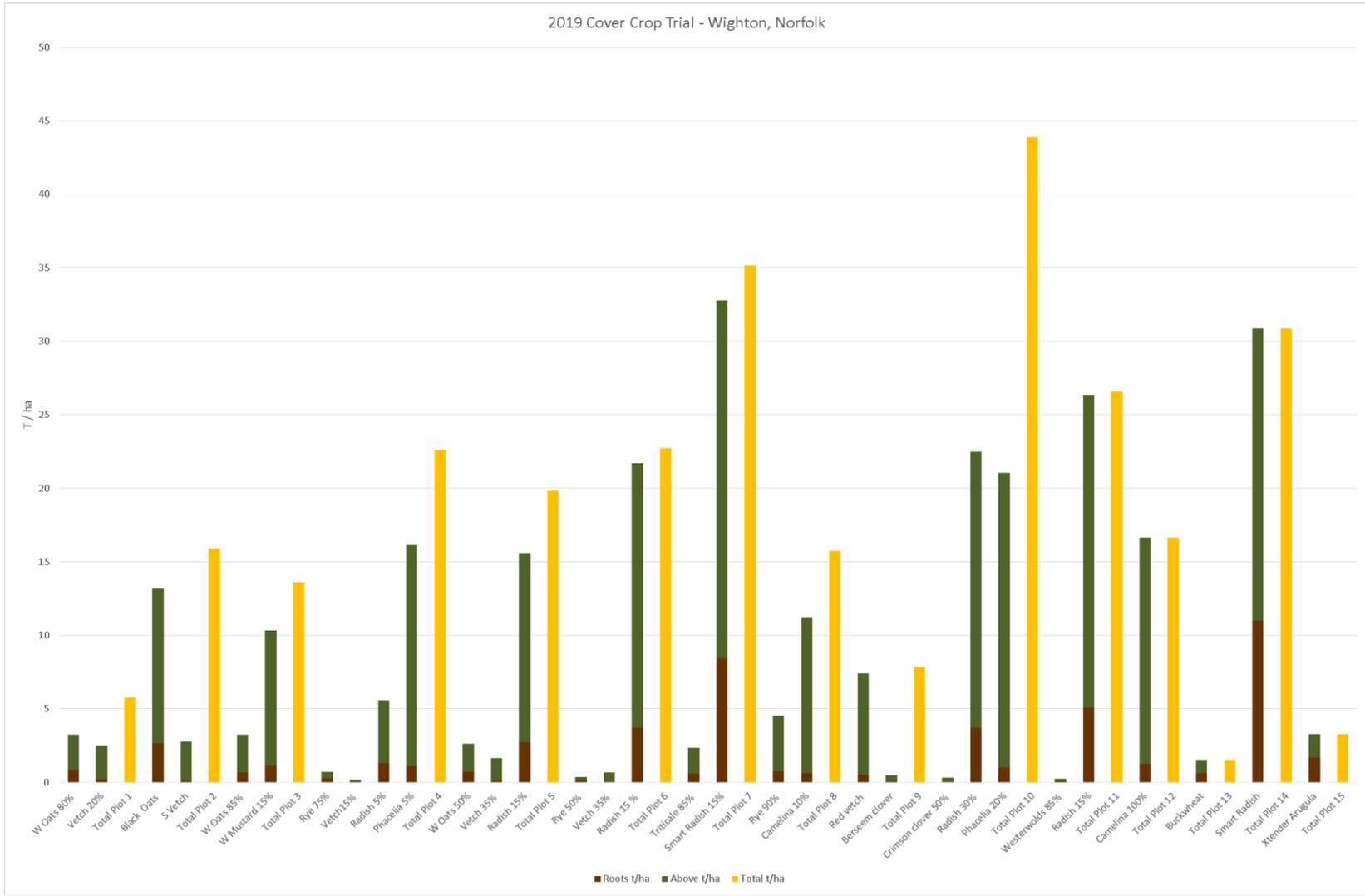


Norfolk MGA Cover Crop trials 2019		
	<u>MIXTURE</u>	Sow rate (kg/ha)
1	W Oats 80% / Vetch 20%	35
2	Black Oats / S Vetch	35
3	W Oats 85% / W Mustard 15%	35
4	Rye 75%/ Vetch15% / Radish 5%/ Phacelia 5%	35
5	W Oats 50%/ Vetch 35% / Radish 15%	35
6	Rye 50% / Vetch 35% / Radish 15 %	35
7	Triticale 85% / Smart Radish 15%	25
8	Rye 90% Camelina 10%	35
9	Red vetch / Berseem clover	25
10	Crimson clover 50% / Radish 30% / Phacelia 20%	12
11	Westerwolds 85% / Radish 15%	10
12	Camelina 100%	5
13	Buckwheat	5
14	Smart Radish	5
15	Xtender Arugula	2.5

MGA Cover Crop Trial 2019-2020



MGA Cover Crop Trial 2019-2020



MGA Cover Crop Trial 2019-2020



- ½ field Roundup 11 December, rest field end of February
- Try rolling in frost to non chemically destruct crops
- Maize direct drilled into residues in April
- Monitor Maize crop throughout growing season
- Assess if any species cause weed control issues in the maize crop