



MGA Conference 2021

Trial results

Jon Myhill- MGA Agronomist



Weed control in maize 2020





2020 herbicide trials - Cheshire

- The site was very dry with uneven establishment of crop and weeds

- Main weeds present:
- Grasses (*Ryegrass*)
- Orache
- Clover
- Creeping buttercup
- Redshank



2020 Weed Control Results



Chemical	% weed control	Timing
Wing-P (Pendimethalin + Dimethenamid P)	82	Pre-emergence
Pendimethalin	55	
Dual Gold (s metolachlor)	58	
SIP31697 + Most Micro (pendimethalin)	36	

2019 Pre-em results:

chemical	%weed control	
Wing p	98	Pre - emergence
Pendimethalin	90	
Dual Gold	88	

2020 Weed Control Results



Chemical	% weed control	Timing
Bromoxynil + MaisTer	12 -Grass	Post emergence
Bromoxynil + MaisTer + oil	100	
Nicosulfuron + Callisto	100	
Peak + Callisto	76 - Grass	
SIP31697	78- Grass	
Wing-P/Bromoxynil	60	Pre + Post emergence
Pendimethalin/Bromoxynil	95	
Pendimethalin/Nicosulfuron+ Callisto	100	
Wing-P/Nicosulfuron+ Callisto	99	
Most Micro/SIP31697	99	

Star rating for Polygonum spp and Others



Where there are more important weeds such as Orache, Fat hen and nightshade which tend to be a problem in almost all situations the point score is doubled (highlighted in yellow)

Example trade name	Active ingredient	Knotgrass	Redshank	Pale Persicaria	Black Bindweed	Others	star score
Stomp	Pendimethalin	****	*	-	*	7	13
Wing P	Pendimethalin + Dimethenamid P	****	****	****	****	10	26
Dual gold	s metolachlor	*		*	*	4	7
Camix	S metalochlor+ Mesotrione	*	****	****	***	12	24
Butryflow	bromoxynil		***	***	****	21	31
Callisto	mesotrione	**	**	****	**	12	22
Milagro	nicosulfuron	*	**	**	**	6	13
MaisTer	Foramsulfuron + Iodosulfuron	****	****	****	**	11	25

Star ratings for important weed species



		Black Nightshade	Orache	Fat Hen	Cleavers	Annual Nettle	Groundsel	star score
Stomp	pendimethalin	***	****	****	*	****	-	27
Wing P	Pendimethalin + Dimethenamid P	****	****	****	*	***	**	30
Dual gold	s metolachlor	**	**	****				16
Camix	S metalochlor+ Mesotrione	****	****	****		****	****	32
Butryflow	bromoxynil	****	****	****	***		****	31
Callisto	mesotrione	****	****	****	*	****	****	33
Milagro	nicosulfuron	**	**	**	**	-	****	18
MaisTer	Foramsulfuron+ Iodosulfuron	****	****	****	****	****	****	36

Star ratings for occasional problem weeds



		Mayweed	Chickweed	Sowthistle	Pansy	OSR	Poppy	star score
Stomp	Pendimethalin	**	****	****	****	**	****	20
Wing P	Pendimethalin + Dimethenamid P	****	****	***	***	****	***	21
Dual gold	s metolachlor	****	***	****	*	*	*	14
Camix	S metalochlor+ Mesotrione	****	****	*	****	****		17
Calaris	mesotrione + terbuthylazine	****	****	-	****	****	-	16
Butryflow	bromoxynil	***	*	****	*	***		12
Callisto	mesotrione	**	****	-	**	****	-	12
Milagro	nicosulfuron	****	****		****	**	-	14
MaisTer	Foramsulfuron+ Iodosulfuron	****	****	****	**	****		18

Star ratings for Grass weed control



		Blackgrass	Wild Oats	Volunteer Cereals	Rye Grass	Annual MG	Barnyard grass	millet	star score
Stomp	pendimethalin	**	*	-	*	****			10
Wing P	Pendimethalin + DimethenamidP	**	**			***	***		12
Dual gold	s metolachlor	*	*	*	***	****	***	*	15
Camix	S metalochlor+ Mesotrione	**			***	**	****		14
Callisto	mesotrione					**	*	**	5
Milagro	nicosulfuron	***	***	**	****	****	**	*	23
MaisTer	Foramsulfuron+ Iodosulfuron	****	****	****	****	****	****	****	32

'Value' of maize herbicides



Product	Approx cost/ ha	Total stars	Pence/ star
Pendimethalin	15	70	21
Dual gold	27	52	52
Wing p	52	89	58
Camix	54	87	62
Calaris	29	82	35
Bromoxynil	15	74	20
MaisTer	45	111	41
Milagro	22	67	33

Herbicide update - Bromoxynil



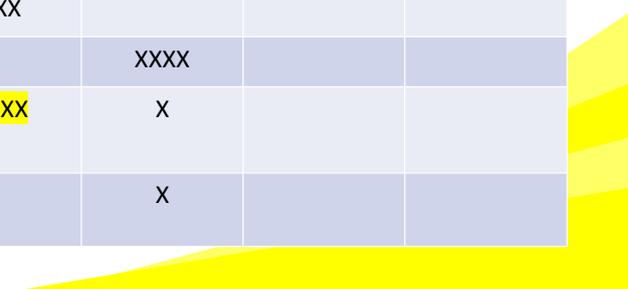
- Dates now confirmed for revocation:
 - Sales and distribution 17th March 2021
 - Disposal, storage and use of stock (on farm) 17th September 2021
- Main selling points were:
 - No following crop restrictions
 - Good weed spectrum for maize – Orache, Fat Hen, Black Bindweed, Black Nightshade etc.



Post emergence herbicides spectrum for problem weeds



	Orache	Nightshade	Fat Hen	Mayweed	Cranesbill	Grasses
Nicosulfuron		XX	X	XX		XXXX
Callisto	XXXX	XXX	XXX	XX		
MaisTer		XXX	XXX	XXX	XX	XXXX
Camix		XX	XXX			
Peak		XXX		XXXX		
Bromoxynil	XXXX	XXX	XXXX	X		
Starane Hi-Load		XXX		X		



Options to replace Bromoxynil



- Mesotrione is the obvious replacement
- No direct replacement if mesotrione isn't an option

Weed	Herbicide	
	Pre-em	Post-em
Black Bindweed	Wing-P	Starane Hi-Load, Clayton Kibo
Black Nightshade	Wing-P, Pendimethalin	Mesotrione, MaisTer, Diva, Starane Hi-Load
Fat Hen	Wing-P, Pendimethalin	Mesotrione, MaisTer (small), Diva, Clayton Kibo, Leystar (no AD)
Orache	Wing-P	Mesotrione, Diva, Clayton Kibo

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Thank you for your time

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Fertiliser trials 2019 & 2020





Biostimulant and Placement fertiliser trials 2019

Soil Analysis 2019

LOCATION	PHOSPHATE	POTASSIUM	MAGNESIUM	PH
NORFOLK	1	0	1	7.6
LACKHAM	6	5	4	7.3
BROXTON	5	3	2	7.6



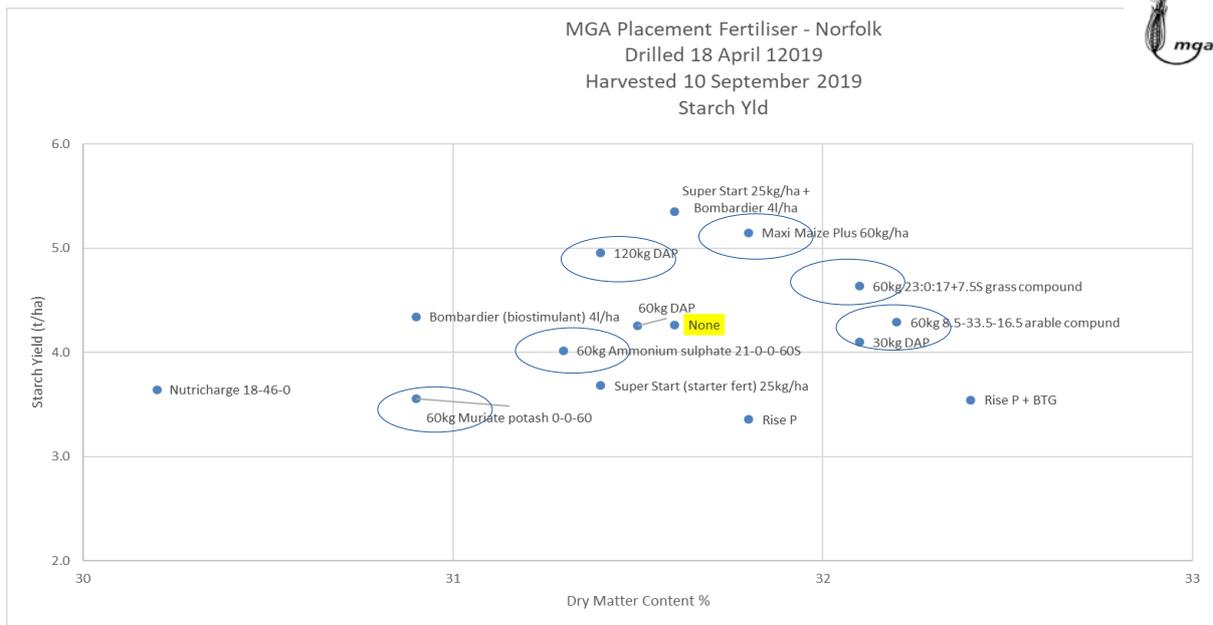
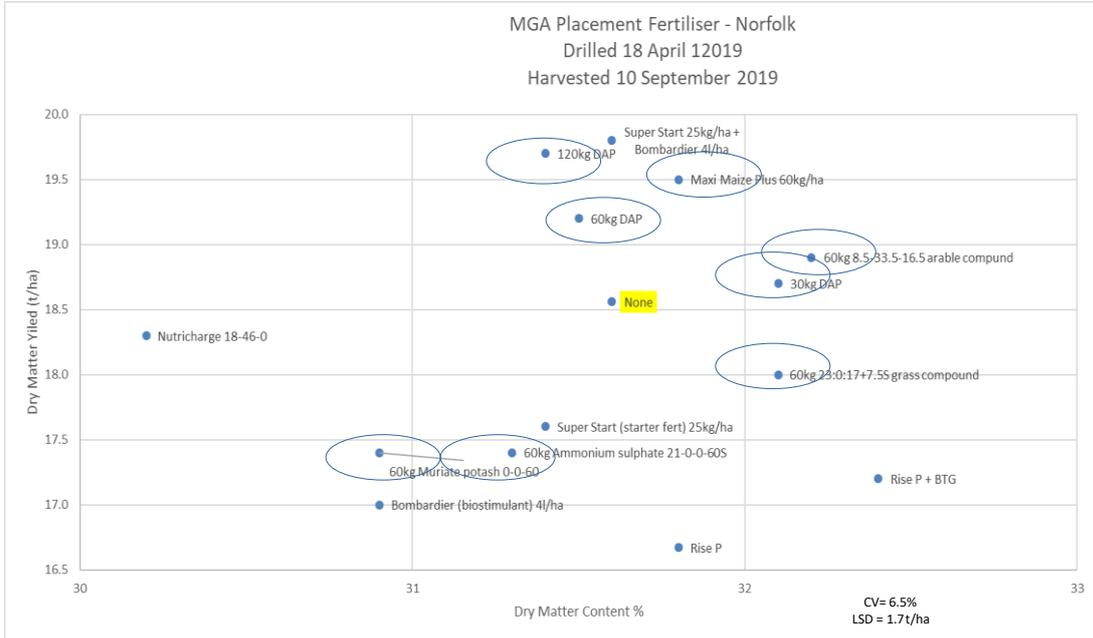
Fresh phosphate that can be applied

- Index 4 or more = 0kg/ha
- Index 3 = 20kg/ha
- Index 2 = 55kg/ha
- Index 1 = 85kg/ha

European maize meeting paper 2019:

Danish work 2003-2017:

Dry matter yield curve tops out at 20 to 25 kg of fresh phosphate per hectare



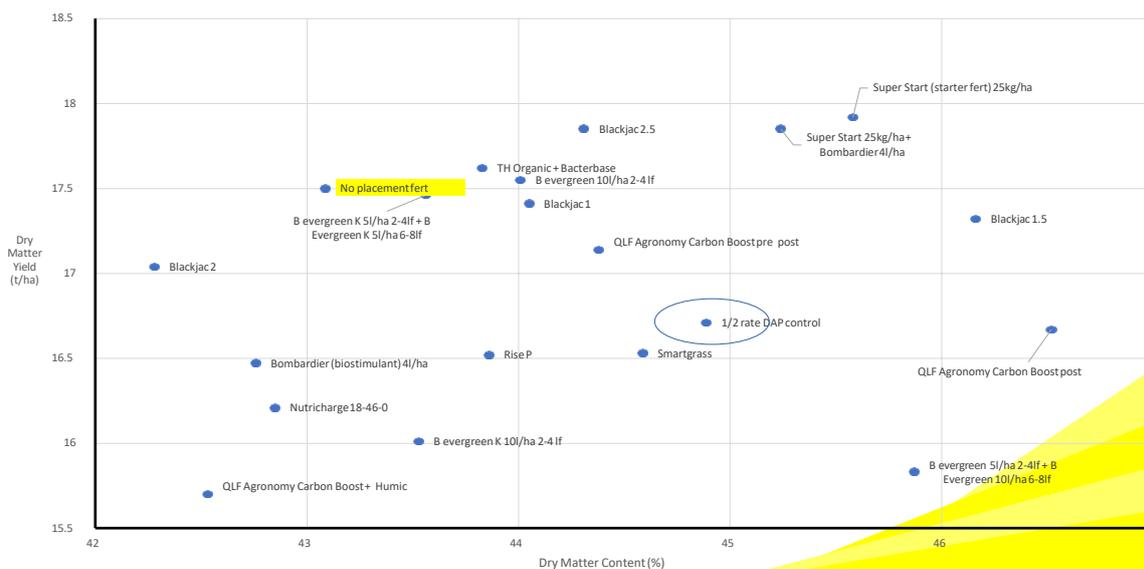
Product analysis



Product	Kg of N	Kg of P	Kg of K	MgO	Others	Trace elements	Humic Fluvic Acids	Bacteria
125kg of DAP	22.5	57.5	0	0	0	0		
62kg of DAP	11.25	28.5	0	0	0	0		
Maxi-Maize Plus 60 kg	11.78	25	0	0.3	0.6 CaO	Wolfrax Zn Bo Cu		
Superstart granules 25kg	2.5	8.75	0	0.5	1.25 S	0.5 Zn		
Bombardier 4 litres/ha	some	none					Yes + fermented sugar	
Rise P	none	none						Bacillus (IT45amyI)
QLF Agronomy Carbon Boost	4%	0%	4%					

- Index 4 or more = 0kg/ha
- Index 3 = 20
- Index 2 = 55
- Index 1 = 85

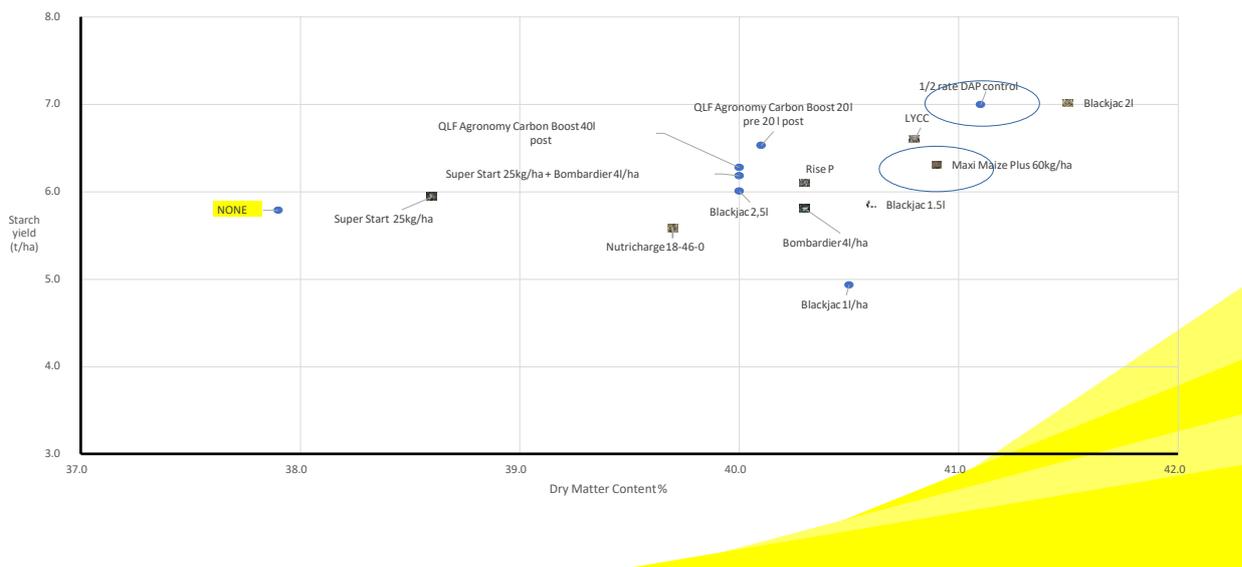
MGA Biostimulant Trial - Broxton
Harvest 25 October 2019



MGA Biostimulant Trial - Lackham, Wiltshire Drilled 30
 April 2019
 Harvested 18 September 2019



MGA Biostimulant Trial - Lackham, Wiltshire Drilled 30
 April 2019
 Harvested 18 September 2019



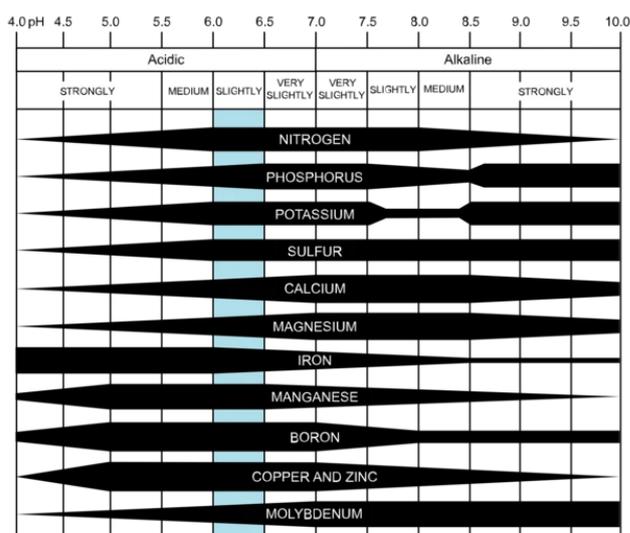


Biostimulant and Placement fertiliser trials 2020

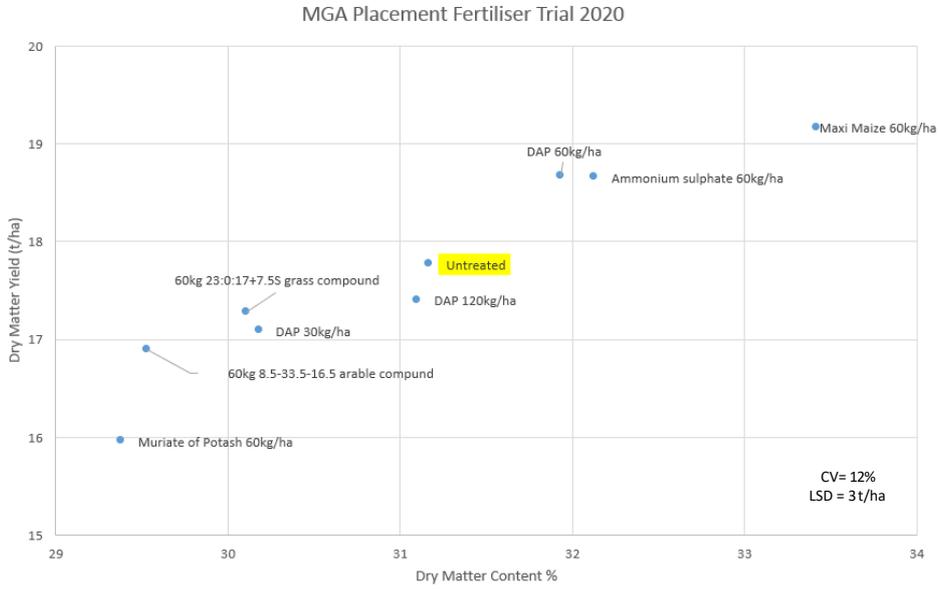
Soil Analysis 2020

LOCATION	PHOSPHATE	POTASSIUM	MAGNESIUM	PH
HARPER	4	1	2	6.5
LACKHAM	3	4	3	7.8
BROXTON	6	3	1	5.9

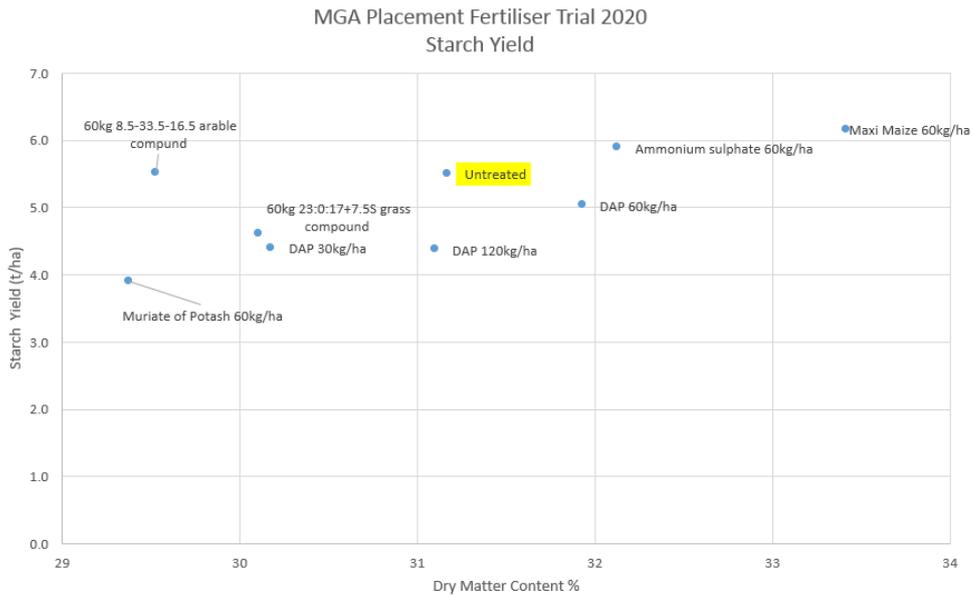
pH and nutrient lock-up



Harper placement fertiliser trial – Dry matter yield



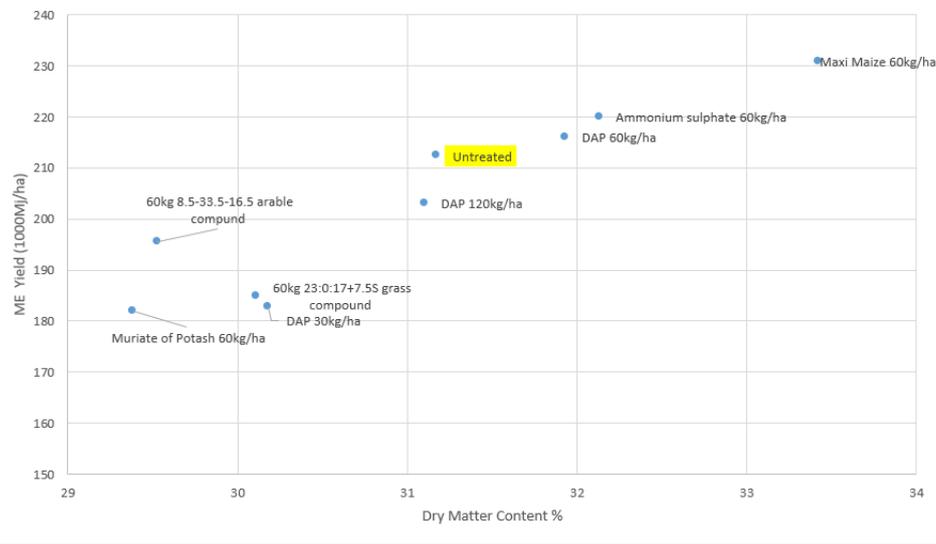
Harper placement fertiliser trial- Starch yield



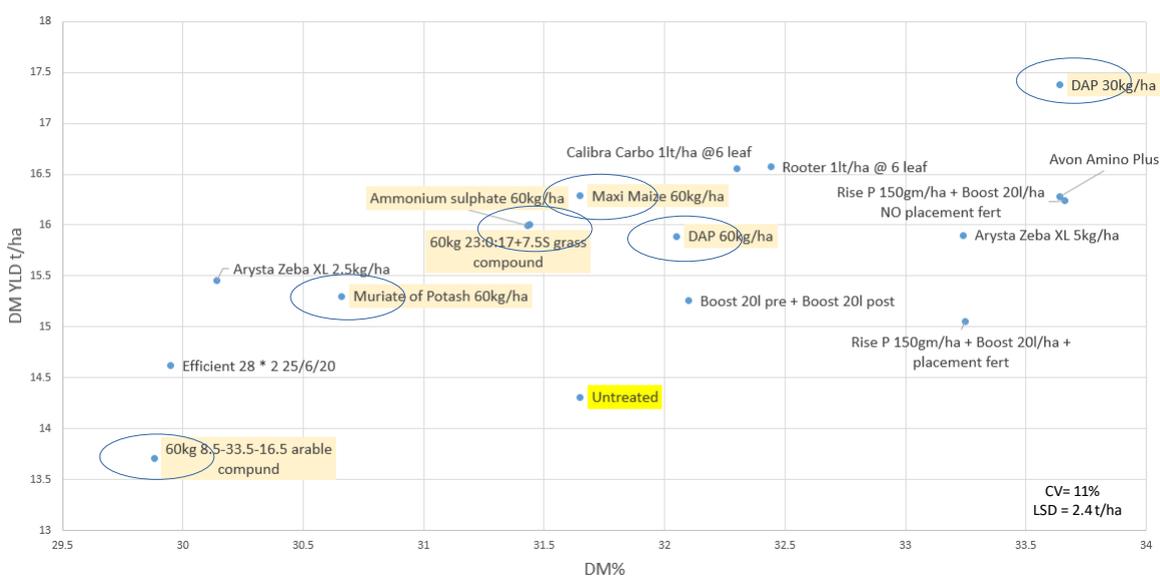
Harper placement fertiliser trial- ME yield



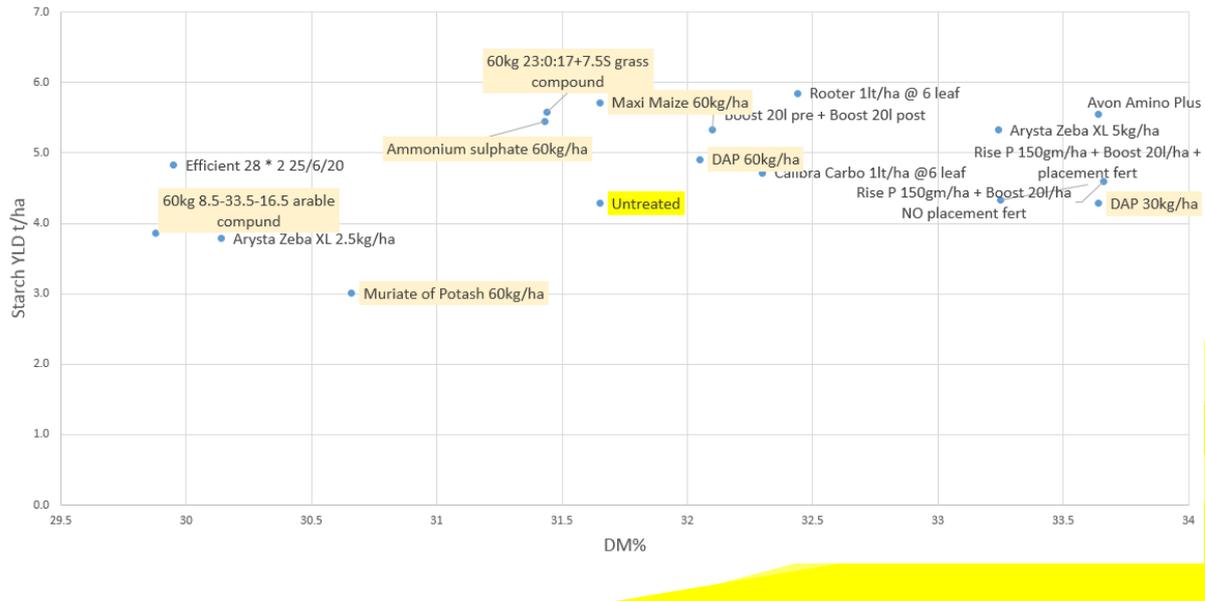
MGA Placement Fertiliser Trial 2020
ME Yield (1000Mj/ha)



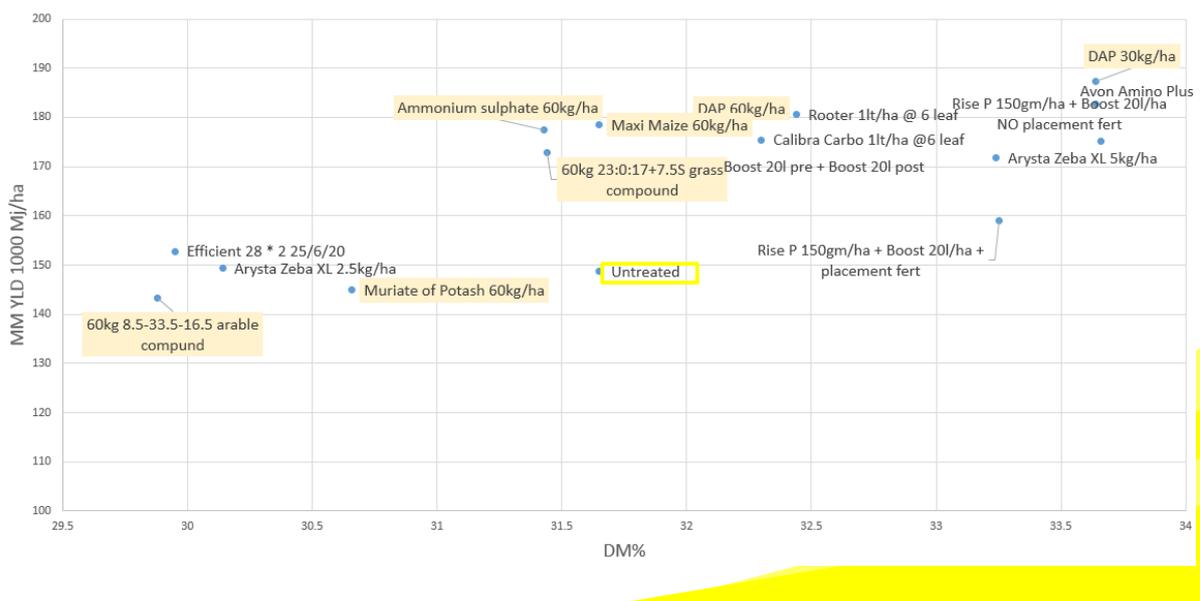
Lackham biostimulant & placement fert trial- Dry matter yield



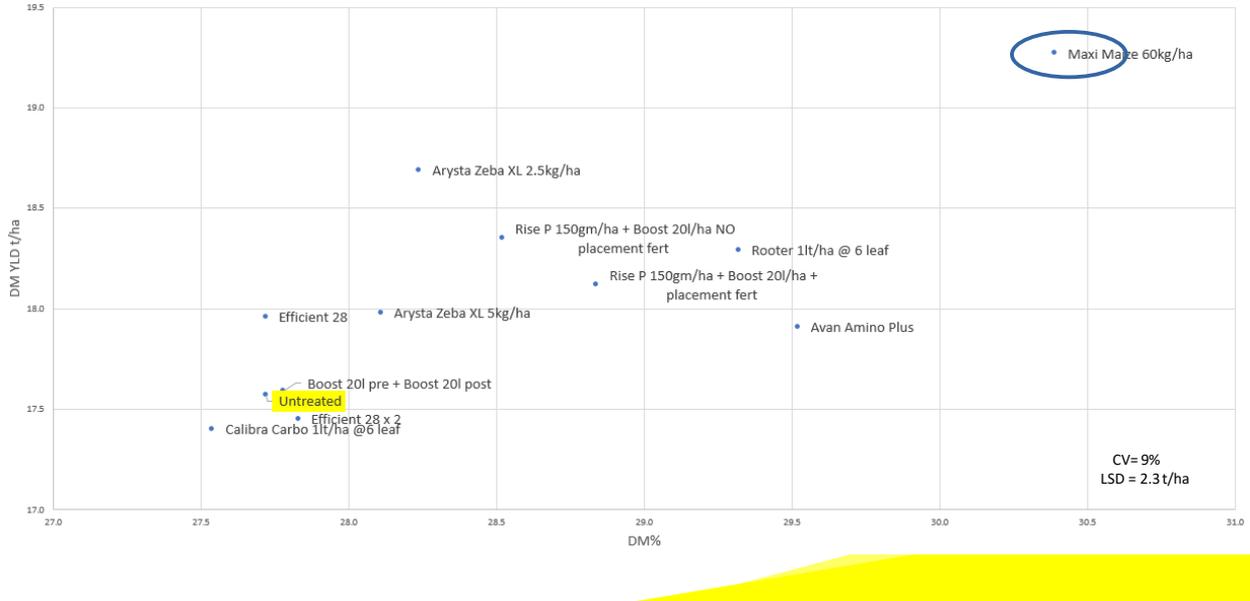
Lackham biostimulant & placement fert trial- Starch Yield



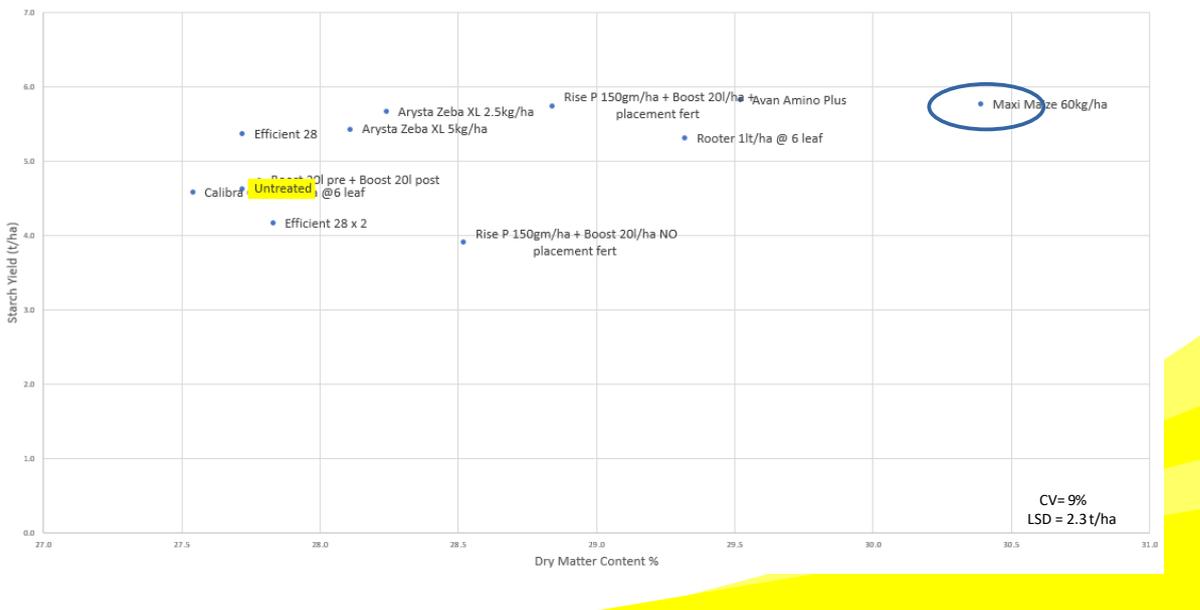
Lackham biostimulant & placement fert trial- ME yield



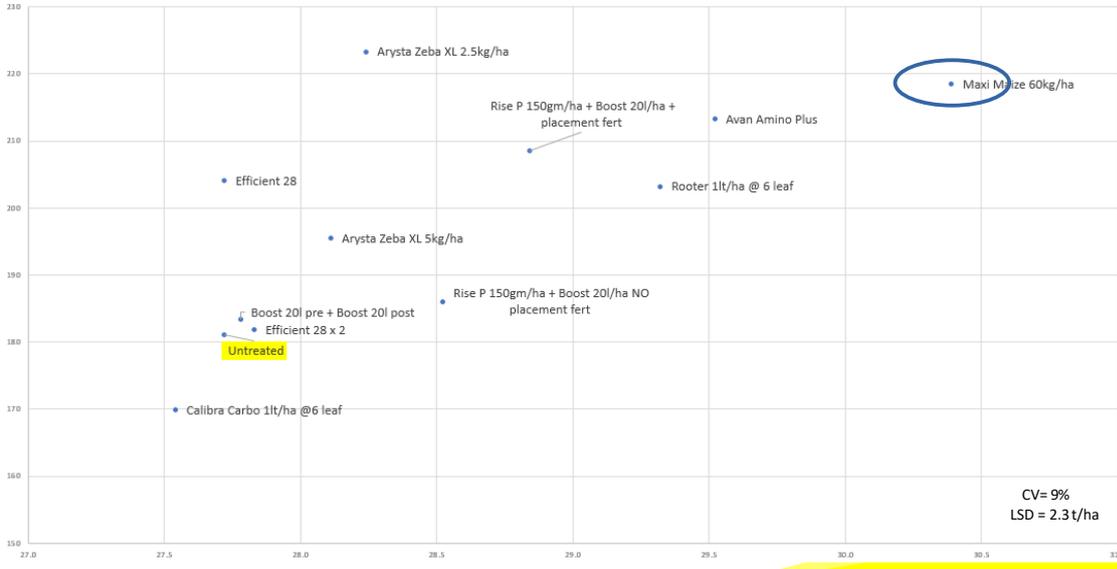
Broxton biostimulant trial- Dry matter yield



Broxton biostimulant trial- Starch yield



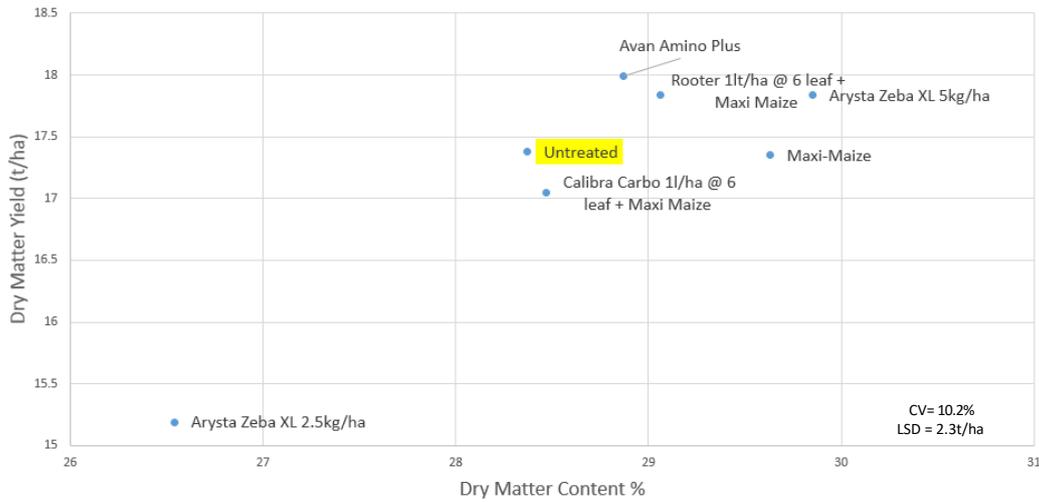
Broxton biostimulant trial- ME yield



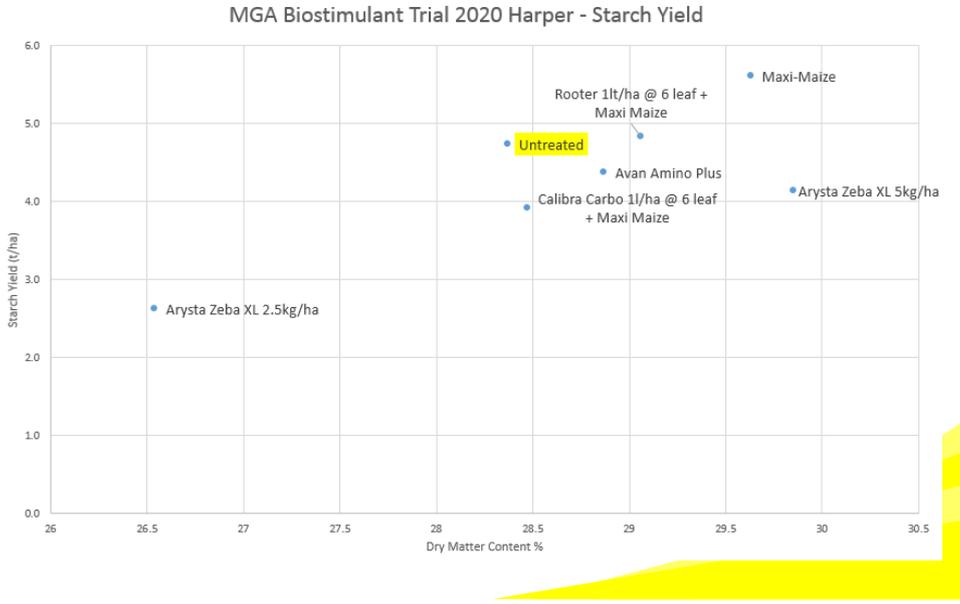
Harper biostimulant trial- Dry matter yield



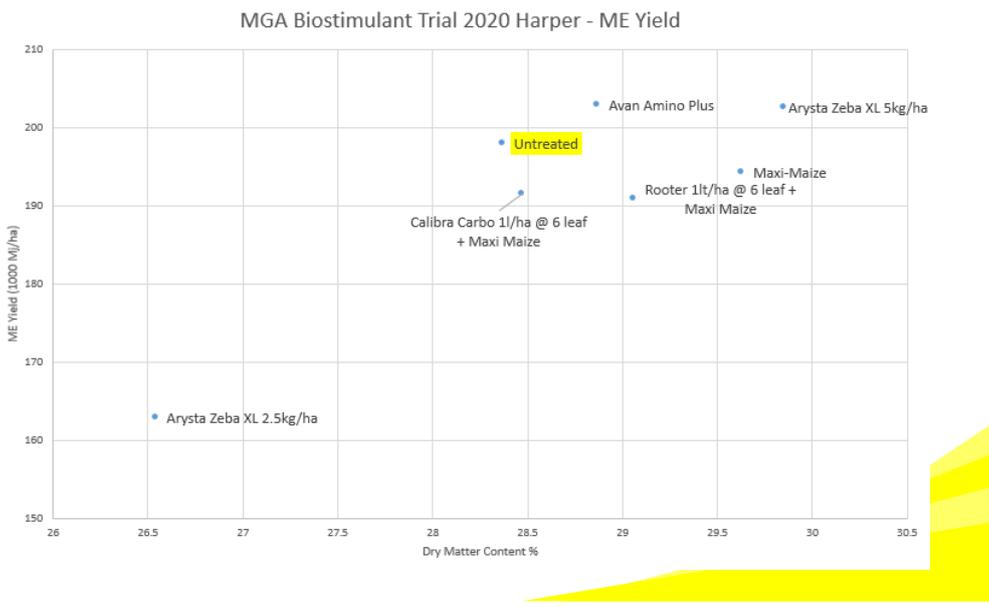
MGA Biostimulant Trail 2020 Harper



Harper biostimulant trial- Starch yield



Harper biostimulant trial- ME yield



Farming rules for water:



Rule	Proving and checking compliance
<p>Organic and manufactured fertiliser management, storage and management</p> <p>1a) Application of organic manures and manufactured fertilisers to cultivated land must be planned in advance to meet soil and crop nutrient needs and does not exceed these levels</p>	<p>Compare farm fertiliser records with crop nutrient requirements. Farmers can demonstrate compliance after visit by providing soil test results, cropping plans and evidence of nutrient application.</p>
<p>1b) Soil testing must be carried out for Phosphorus, Potassium, Magnesium, pH and Nitrogen levels at least every 5 years, for cultivated land.</p>	

Planning for 2021 Crop - Starter fertiliser analysis



Product	Kg of N	Kg of P	Kg of K	MgO	Others	Trace elements
120kg/ha of DAP	21.6	55	0	0	0	0
30kg/ha of DAP	5.5	14	0	0	0	0
Maxi-Maize Plus 60kg/ha	11.8	25	0	0.3	0.6 CaO	Wolftrax Zn Bo Cu

- Index 4 or more = 0kg/ha
- Index 3 = 20
- Index 2 = 55
- Index 1 = 85



Conclusions

- Phosphate is needed near to maize roots to support growth
 - Maize fields often receive more phosphate than is required
 - Fully account for phosphate applied via organic manures
 - If you have an index of 4 or over your crops do not need phosphate
 - We will continue to trial phosphate and non phosphate alternatives
-
- Biostimulants are interesting... site specific
-
- *Need to be farming sustainably- can we reduce inputs?*



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Thank you for your time

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