MGA trials report 2015

Simon Draper

MGA trials -2015

- Effect of seed rate and row width on DM and starch yield
- Effect of starter fertiliser on yield and quality of maize silage
- Effect of oversowing cover crops on maize silage
- Weed control under plastic
- Weed control for maize
- Disease control in maize

Effect of seed rate and row width on DM and starch yield

Treatment	Row width (cm)	Seed rate (seeds/ha)	Plant no achieved (plants/ha)
1	75	80000	79333
2	75	100000	104000
3	75	120000	124667
4	50	80000	83000
5	50	100000	97000
6	50	120000	122000

Effect of seed rate and row width on DM and starch yield

Treatment	Row width (cm)	Plant height (cm)	Leaf number	Tasseling date
1	75	34.5	6.3	17 July
2	75	32	6	17 July
3	75	31.25	6	17 July
4	50	36.25	6.8	14 July
5	50	35.5	6.5	14 July
6	50	35	6	17 July

Effect of seed rate and row width on DM and starch yield

Treatment	Row width (cm)	Yield FW (t/ha)	DM (%)	DM yield (t/ha)
1	75	38.63	32.8	12.65
2	75	38.49	32.5	12.51
3	75	37.52	34.3	12.85
4	50	37.53	31	11.64
5	50	40.39	32	12.93
6	50	39.39	33.8	13.29

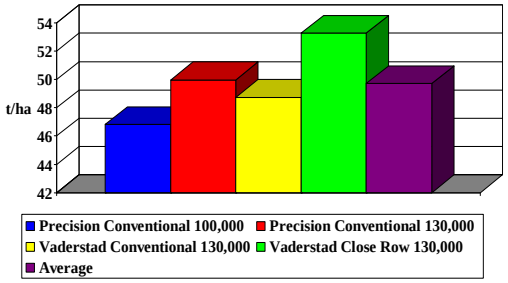
Effect of seed rate and row width on DM and starch yield

Treatment	Row width (cm)	% crude protein	% starch	Starch yield (t/ha)
1	75	8.7	37.1	4.69
2	75	8.6	35.3	4.41
3	75	8.2	32.4	4.16
4	50	9.3	37.9	4.41
5	50	9.2	37.6	4.86
6	50	8.8	37.3	4.95

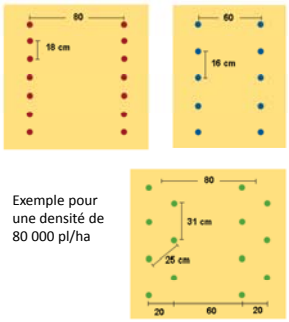
Effect of seed rate and row width - summary

variable	Row width	Plant number
Plant height	↑	↓
Leaf number	↑	↓
Tasseling date	↑	-
FW yield	↑	↓↑
%DM	↓	- ↑
DM yield	↑	↑
Crude Protein	↑	↓
% Starch	↑	↓
Starch yield	↑	↓↑

Fresh weight Yield Adjusted to 30% Dry Matter (t/ha) – Row Widths



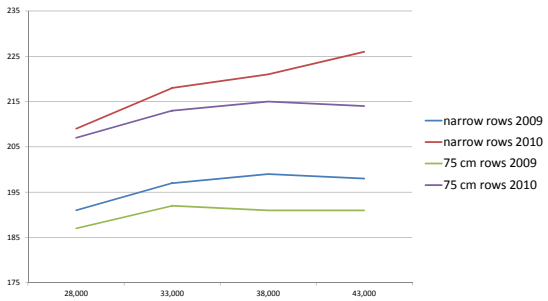
TWIN ROW Ex. : Monosem



Exemple pour une densité de 80 000 pl/ha

European Maize Committee
Dumfries (GB) 10th & 11th September 2012

American results – 60 trials 2 years (grain)



Effect of starter fertiliser on yield and quality

	Fert type	Analysis N:P:K	Rate/ha (kg)	NPK/HA
1	untreated			
2	MAP	11-52-0	30	3.3 :15.6: 0
3	MAP	11-52-0	60	6.6 :31.2: 0
4	DAP	18-46-0	60	10.8: 27.6: 0
5	AS	21 N 24S	60	12.6 N : 14.4 S
6	NPK compound	10-40-20	60	6.0 :24: 12

Effect of starter fertiliser on growth of maize

	Fert type	No leaf 11/6	Plant height	Tasseling date
1	untreated	6.3	31.25	17 july
2	MAP	6.0	32	17 july
3	MAP	6.0	32	17 july
4	DAP	6.8	36.25	14 july
5	AS	6.5	35.5	14 july
6	NPK compound	7	37.5	13 july

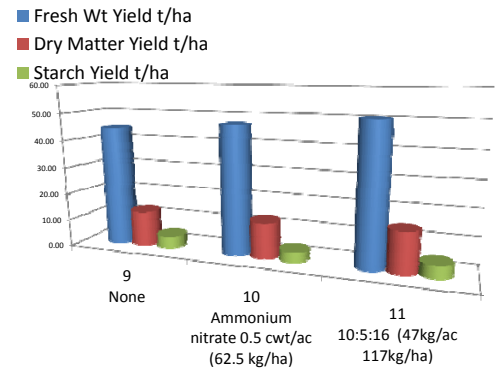
Effect of starter fertiliser on yield of maize

	Fert type	Fresh wt yield	%DM	DM yield	
1	untreated	37.29	27	10.81	d
2	MAP	37.34	31	11.58	c
3	MAP	37.21	30.5	11.35	c
4	DAP	38.74	31.5	12.21	b
5	AS	38.26	32	12.24	b
6	NPK compound	39.27	33	13.06	a

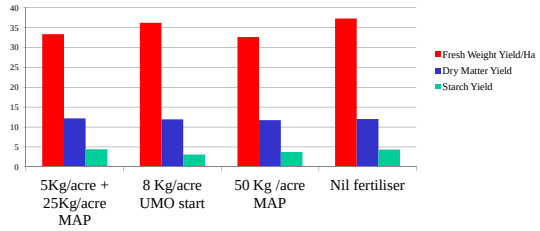
Effect of starter fertiliser on yield of maize

	Fert type	Protein%	% Starch	Starch yield
1	untreated	8.7	31.8	3.43
2	MAP	9.1	32.4	3.75
3	MAP	9.2	32.2	3.65
4	DAP	9.3	**36.7**	**4.48**
5	AS	9	**36.2**	**4.43**
6	NPK compound	9.4	**36.4**	**4.75**

Catchment Sensitive Farming – OTTERY 2010



Catchment Sensitive Farming - Tregony Benefit of starter fertiliser 2010



Effect of undersowing on the growth and yield of maize

	Treatment	Seed rate	Time of sowing
1	Untreated		
2	Ryegrass	15 kg/ha	6-8 leaf stage, broadcast
3	Ryegrass	30 kg/ha	6-8 leaf stage, broadcast
4	Ryegrass	15 kg/ha	2-4 leaf stage drilled
5	Ryegrass	30 kg/ha	2-4 leaf stage drilled
6	Chicory	5 kg/ha	6-8 leaf stage, broadcast

Effect of undersowing on the growth and yield of maize

	Treatment	Seed rate (kg/ha)	Ground Cover 11/6	Ground cover 13/7	Ground cover 5/11	Tasseling date
1	Untreated					
2	Ryegrass (6-8)	15		7.5	27.5	17 July
3	Ryegrass (6-8)	30		20	61.3	17 July
4	Ryegrass (2-4)	15	12.5	45	56.3	17 July
5	Ryegrass (2-4)	30	21.3	55	68.8	17 July
6	Chicory (6-8)	5		20	31.3	17 July

Effect of undersowing on the growth and yield of maize

	Treatment	Seed rate (kg/ha)	Fresh wt yield t/ha	% DM	DM yield t/ha
1	Untreated		37.29	29.3	10.91
2	Ryegrass (6-8)	15	33.13	27.8	9.19
3	Ryegrass (6-8)	30	32.94	28	9.23
4	Ryegrass (2-4)	15	27.14	28.3	7.68
5	Ryegrass (2-4)	30	23.36	26.5	6.2
6	Chicory (6-8)	5	29.34	27.3	7.98

Weed control for maize sown under plastic

- Objective : to determine the best approach to weed control on large weeds where maize is grown under plastic
- Weed control applied after plastic removed
- Weed control following no pre-em

Weed control for maize under plastic

	Treatment	Rate/ha
1	untreated	
2	Stomp 400	3.3
3	Wing P	4
4	Calaris	1.5
5	Templar	0.75
6	Stomp + Butryflow	0.5 + 0.75

% Weed control for maize under plastic

	Treatment	Fat hen	Fumitory	Annual meadow grass	knot grass	Average
1	untreated					
2	Stomp 400	0	2.8	0	2.8	1
3	Wing P	1.5	5.5	0	4	3
4	Calaris	90	84	74	55	76
5	Templar	6	6	0	2.8	4
6	Stomp + Butryflow	81	65	0	80	57

Weed control in maize

- Adopt a two spray programme:
- Pre emergence + early post
- Where grass weeds are the main problem:
- Early post + late post
- Where blackgrass is the main problem consider a 3 spray programme.

Disease control in maize –yield results in the absence of disease

	Yield t/ha
Untreated	59.02 a (100.0%)
Opera 1.5 L/ha	53.80 a (91.2%)
Comet 1.0 L/ha	60.62 a (102.7%)
Quilt Xcel 1.0 L/ha	62.33 a (105.6%)
Quilt Xcel 1.0 L/ha + Yara Vita Croplift 5.0 Kg/ha	57.74 a (97.8%)
Soleil 1.2 L/ha	62.73 a (106.3%)