



Department of
Agriculture and Food



GRDC
Grains
Research &
Development
Corporation





NATIONAL TRIALLING
SYSTEM

2010 NATIONAL HYOLA® TRIALLING SYSTEM POPULATION & GENERATION AGRONOMY TRIAL RESULTS

- Summary of 2009 Hyola® Sowing rate trials
- Summary of 2009 Hyola® Generation trials
- 2010 Hyola® Target Population Trial Results
- 2010 Hyola® Generation Trial Results

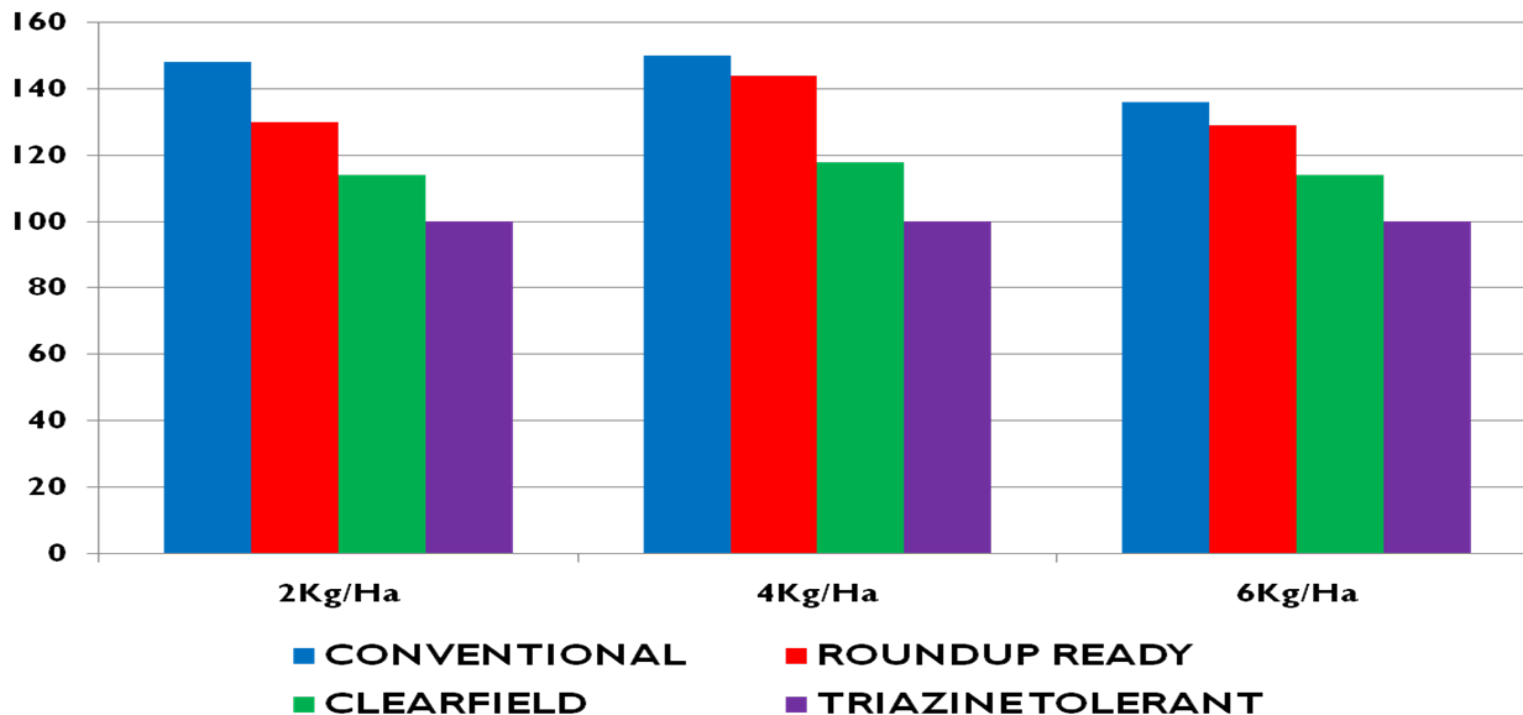
High Yielding Oilseed Local Agronomy





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2009 HYOLA NATIONAL CNV/CL/TT /RR RESULTS MEAN GROSS RETURN \$/HA HT % vs SOWING RATE



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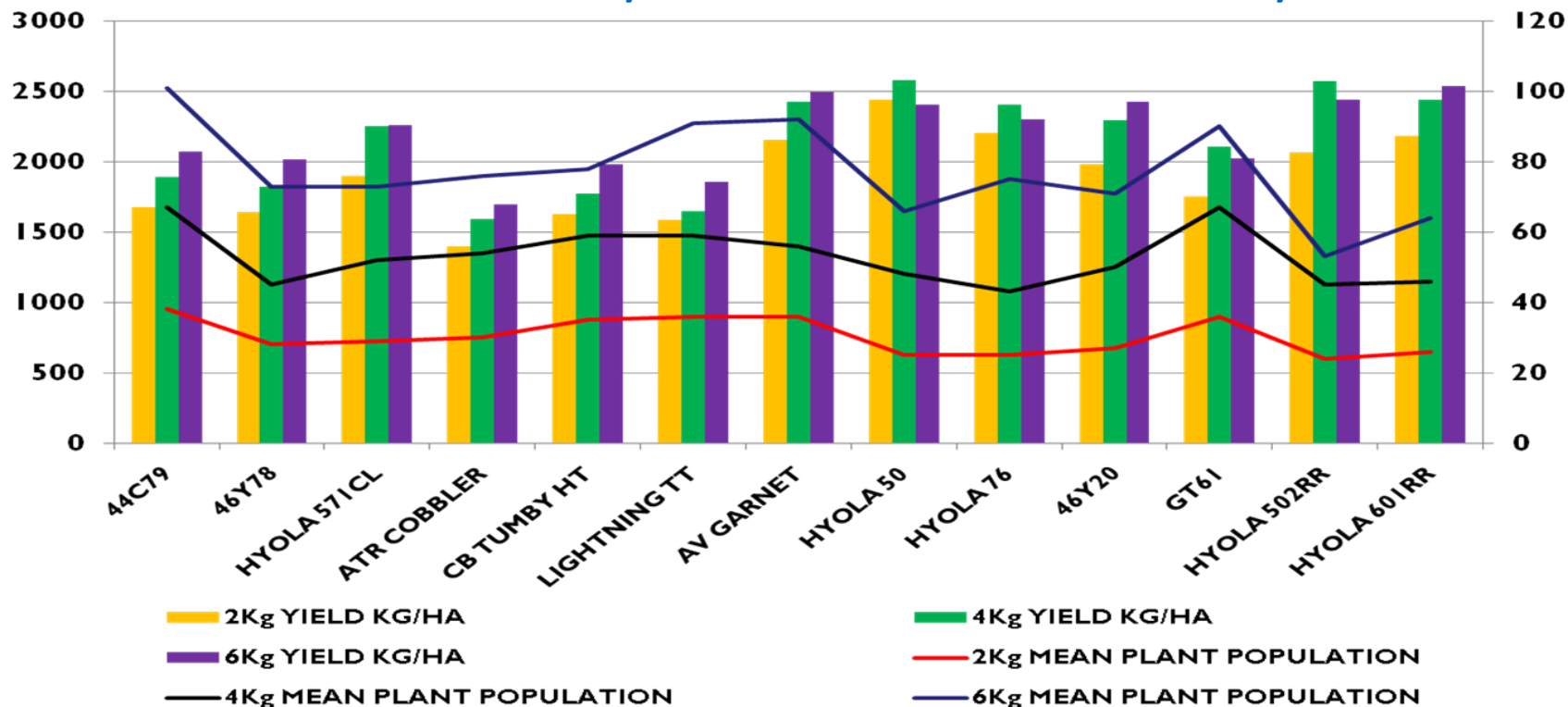
PACIFIC SEEDS
AUSTRALIA'S HYBRID CANOLA SPECIALISTS



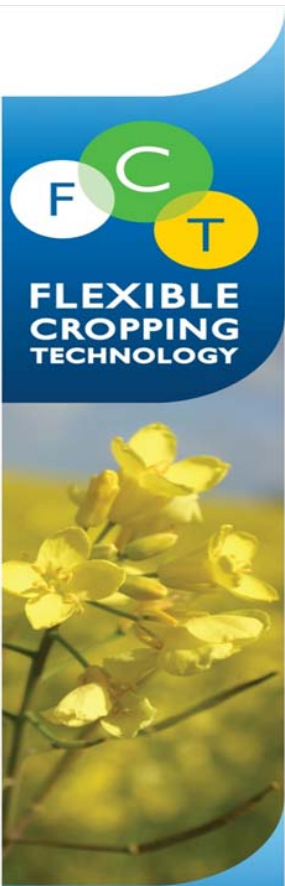
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2009 HYOLA NATIONAL CNV/CL/TT/RR RESULTS – 6 SITES

VARIETY MEAN YIELD KG/HA VS MEAN PLANT POPULATION / M2



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Hyola HYBRIDS

ULTIMATE CANOLA PERFORMANCE

OPTIMUM PLANT POPULATION RECOMMENDATIONS

CANOLA VARIETY BREEDING	LOW TO MEDIUM 250 - 400mm 1.5-2 MT/HA	MEDIUM TO HIGH 400 - 600mm+ 2- 4 MT/HA
HYBRID TECHNOLOGY	25-40 PLANTS/M2	40-60 PLANTS/M2
OPEN POLLINATED	30-50 PLANTS/M2	50-75 PLANTS/M2

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Defining economic optimum plant densities of open pollinated and hybrid canola in WA

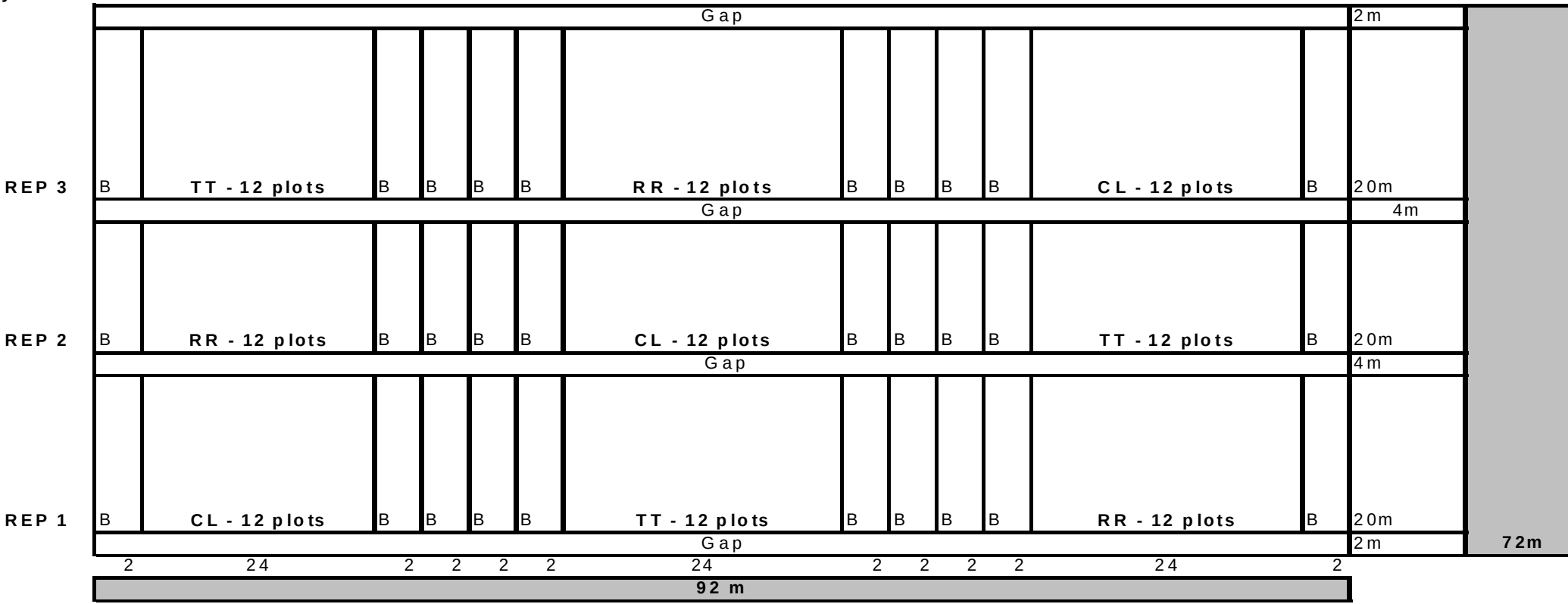
Mark Seymour



- Introduce how the trials were done
- Summarise results
- Consider weed control
- Where yield comes from?
- Wrap it up

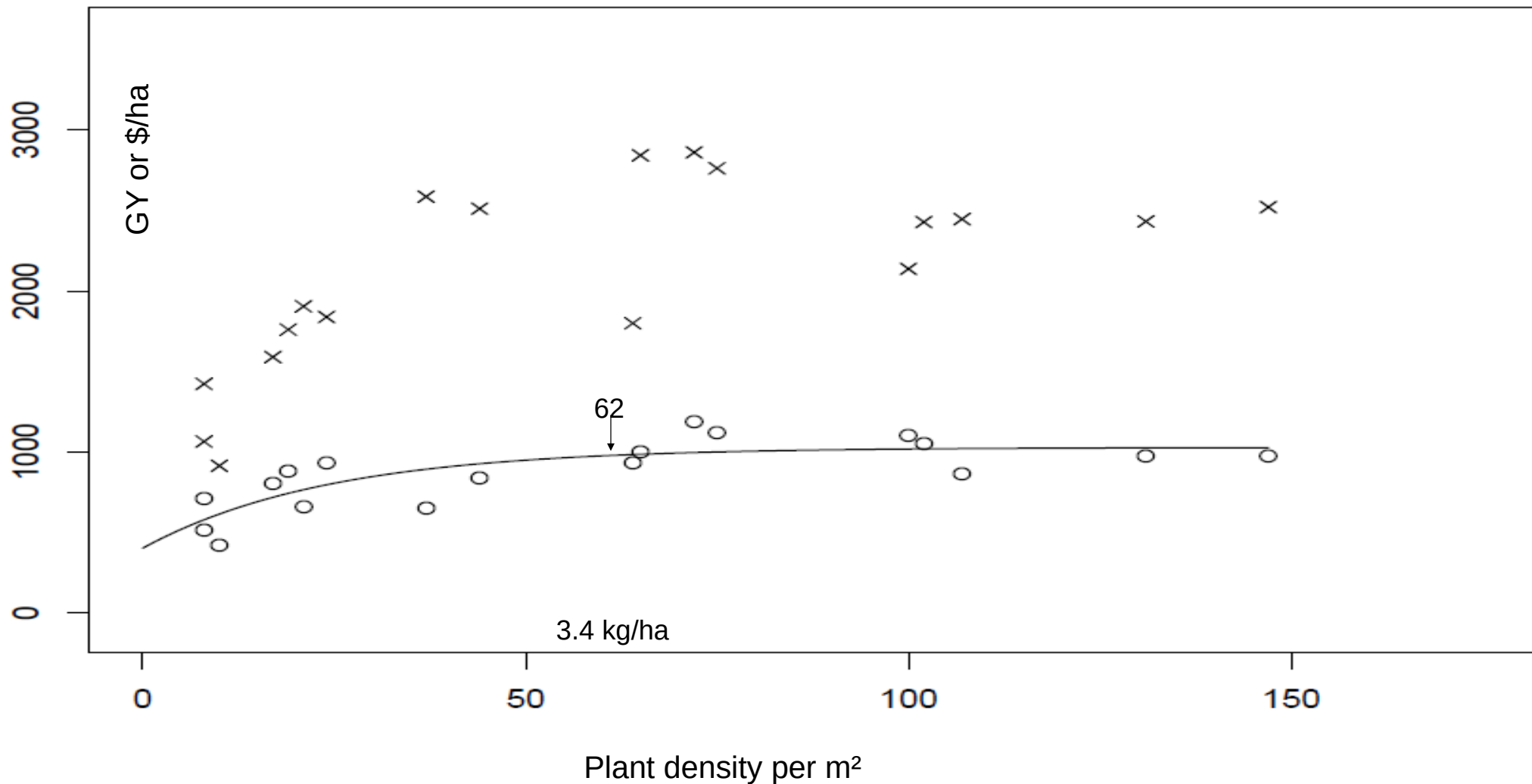
- 5 Sites in 2010:
 - Eradu, Mingenew, Cunderdin, Darkan and Gibson
- TT, CL and RR blocks
- Hybrid and open-pollinated cultivars
- 6 densities
 - 10, 20, 40, 80, 120 and 160 plants/m²
 - Seed rate
 - 0.4 to 8 kg/ha for OP
 - 0.8 to 13 kg/ha for hybrid

ety



Gibson CL OP

Get \$2 for \$1 spent



\$ based on:

	Seed Size (mg)	Seed (\$/kg)	Grain \$/t [#]	Herbicide costs (\$/ha) [^]	Herbicide comments
TT OP	3.04	9	550.0	46.50	2 x 1.1 kg Atrazine/ha + Grass herbicide
TT Hybrid	4.14	24	545.0	46.50	“ “
CL OP	3.04	9	550.0	66.00	600 mL Intervix/ha + Grass Herbicide.
CL Hybrid	5.97	20	550.0	66.00	“ “
RR OP	3.46	17*	536.8	28.20	Difference between Roundup and Sprayseed at seeding. 2 x 0.9 L Roundup Ready/ha. No grass herbicide.
RR Hybrid	5.27	23*	536.8	28.20	

*Includes \$3/kg Technical Use Agreement (TUA);# \$550/t minus End Point Royalties (EPR) not adjusted for oil bonus/deduction; ^ as per Planfarm Herbicide Guide (2010).

Table 2: Economic optimum density (ECopt, plants/m²) and standard error of the optimum density (se) for 6 canola varieties at 5 sites in 2010

Site		CL Open	CL Hybrid	TT Open	TT Hybrid	RR Open	RR Hybrid
Cunderdin	Density	21	15	*	21	11	16
	se	6	4	*	7	26	8
Darkan	Density	64	33	13	26	21	22
	se	49	11	8	9	12	6
Eradu	Density	31	19	17	22	22	26
	se	7	5	3	8	9	9
Mingenew	Density	30	17	16	25	22	11
	se	13	8	10	8	6	4
Gibson	Density	62	68	38	54	33	24
	se	18	16	8	18	14	5

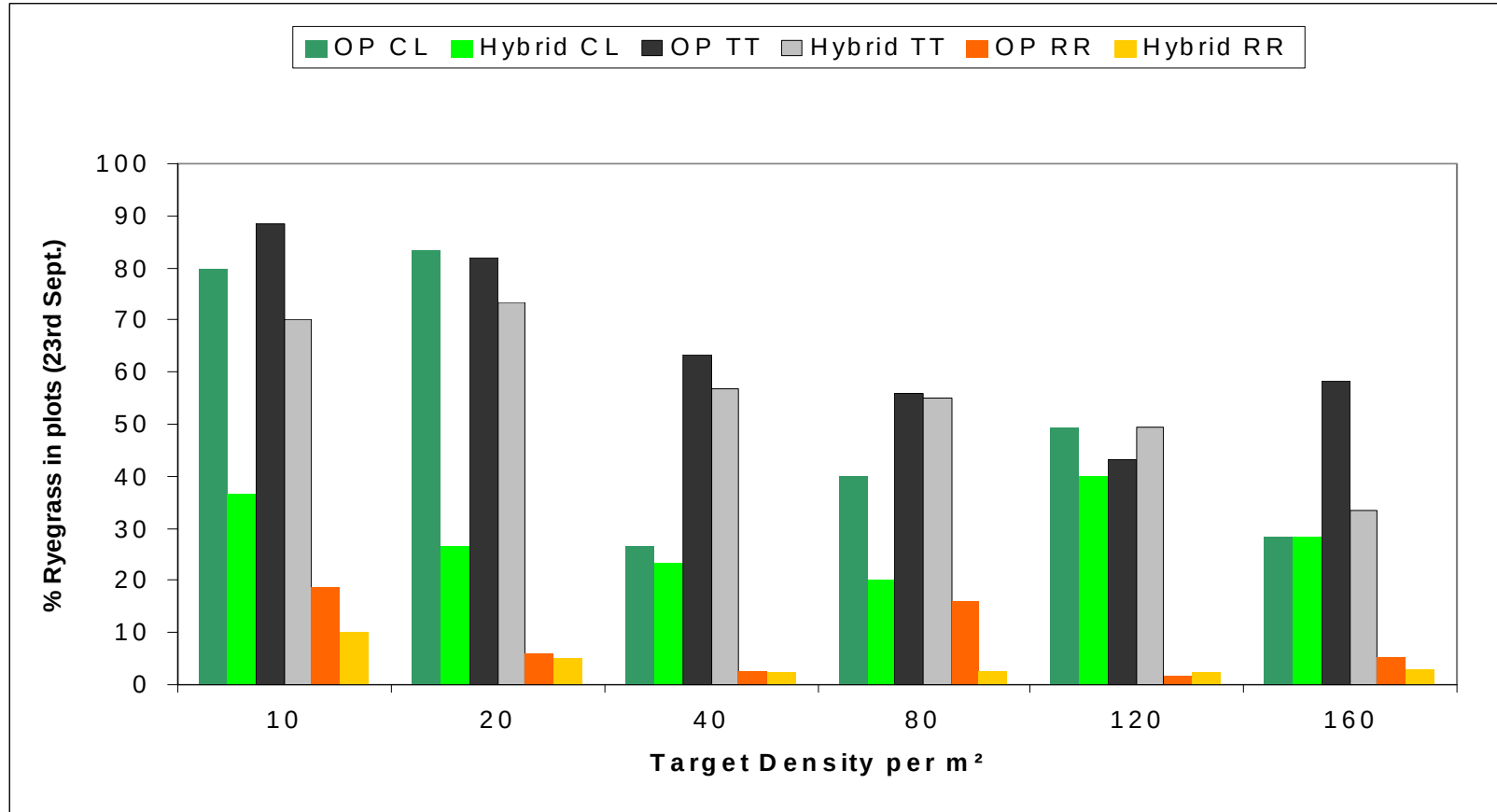


Gross Margin comparison 2010 density experiments (\$/ha at optimum density)

Herb and Seed	Cunderdin	Darkan	Eradu	Gibson	Mingenew	Mean
C L O P	-\$47	\$55	\$469	\$820	\$128	\$423
C L Hybrid	-\$66	\$153	\$449	\$1,111	\$175	\$502
T T O P	-\$78	-\$138	\$412	\$984	\$40	\$382
T T Hybrid	-\$65	\$3	\$453	\$1,094	\$67	\$448
R R O P	-\$63	\$66	\$491	\$1,245	\$396	\$545
R R Hybrid	-\$14	\$272	\$633	\$1,423	\$446	\$665
Mean	-\$57	\$64	\$476	\$1,097	\$202	\$494

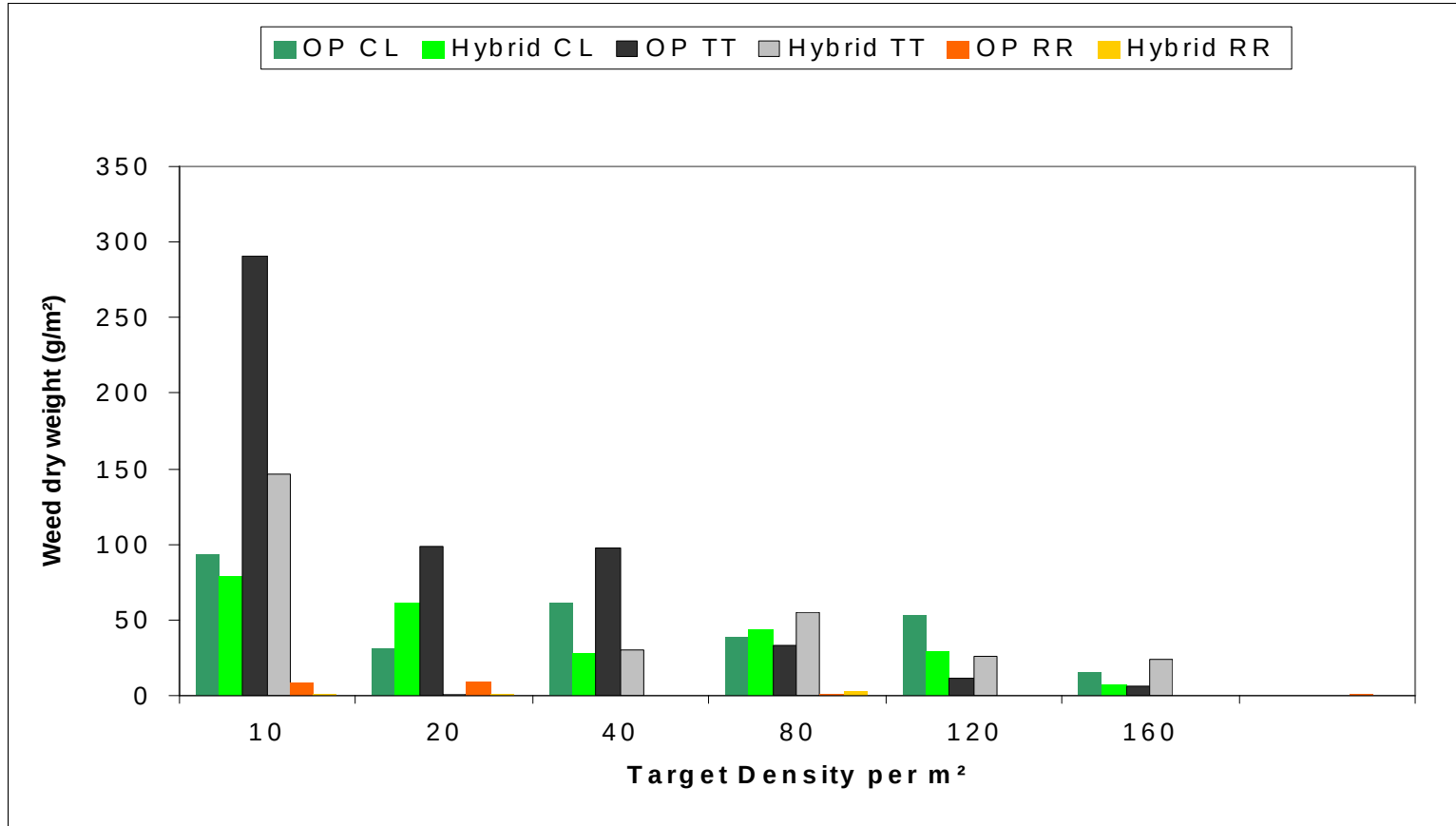
Other costs	\$120	140	140	160	130
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Ryegrass 10CH09 Mingeneu



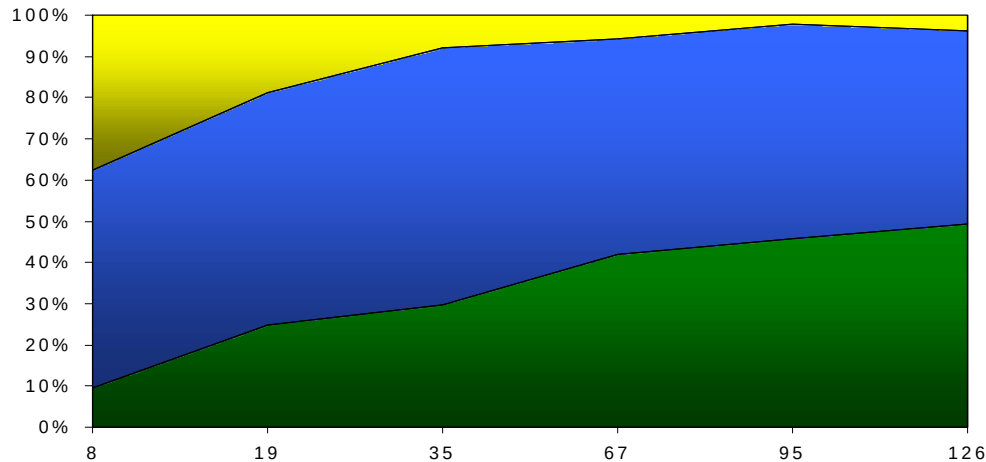
Low density and weeds

(10ED09 Gibson)



OP CL, 50% flowering 19th August

■ % yield from MS ■ % yield from Prim ■ % yield from Rest



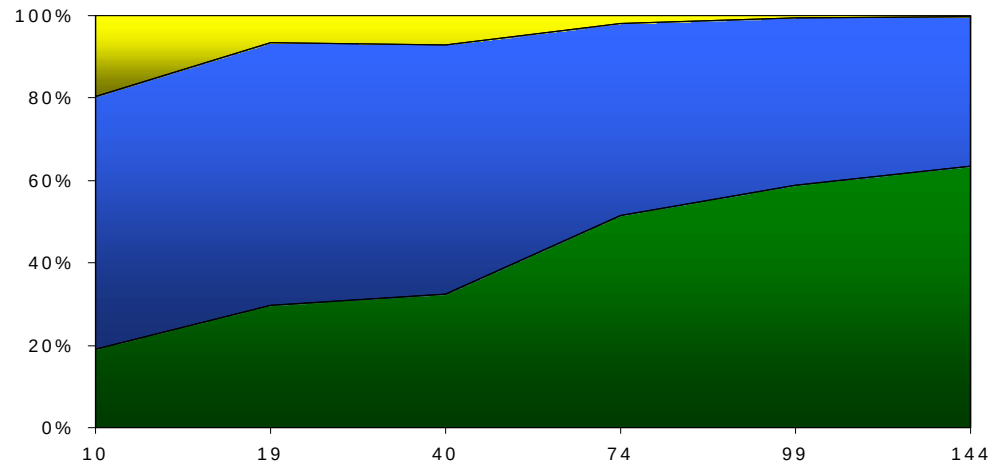
1.1 1.6 1.6 2.1 2.0 2.1

Where yield is formed

1.6 2.0 2.3 2.5 2.7 2.8

Hybrid CL, 50% flowering 21st August

■ % yield from MS ■ % yield from Prim ■ % yield from Rest







Comments

- Canola elastic, variable responses
- @ 30 plants/m² in 2010 seems ok
 - Unless yield potential > 2 t/ha
 - or weedy site and not using RR



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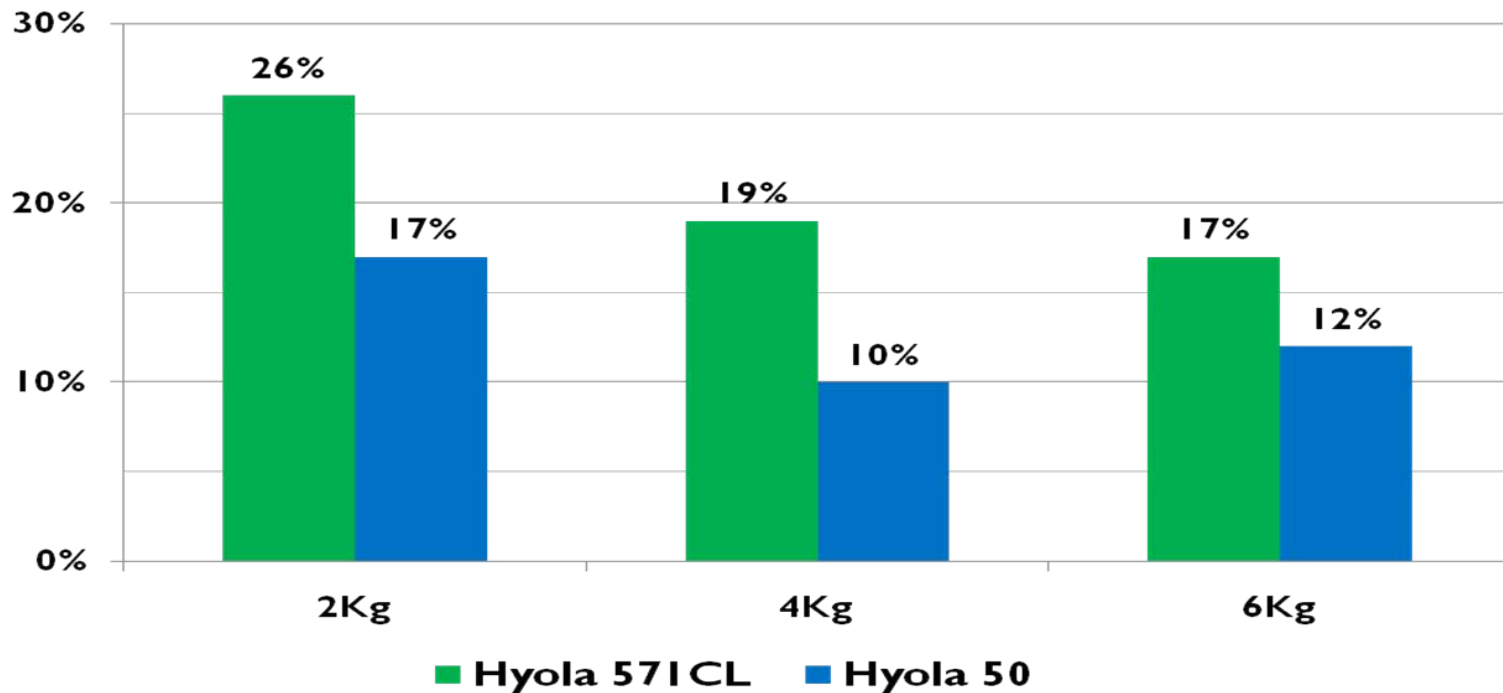
HYOLA 2009 AGRONOMY TRIALS HYBRID F1 vs RETAINED SEED RESULTS - SUMMARY

- F1 Hybrids - 10% higher plant establishment, higher visual biomass
- F2 - 10 day flowering variation in plant segregates, 25% sterility, 10% higher lodging, 30cm greater height variation, observed higher blackleg cankers
- Hyola 571CL and Hyola 50 Hybrid F1 yielded significantly higher than the F2 retained seed at all 8 sites across all sowing rates



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2009 NATIONAL HYOLA HYBRID F1 VS RETAINED F2 SEED
HYOLA 50 & HYOLA 57ICL AVERAGE %YIELD LOSS

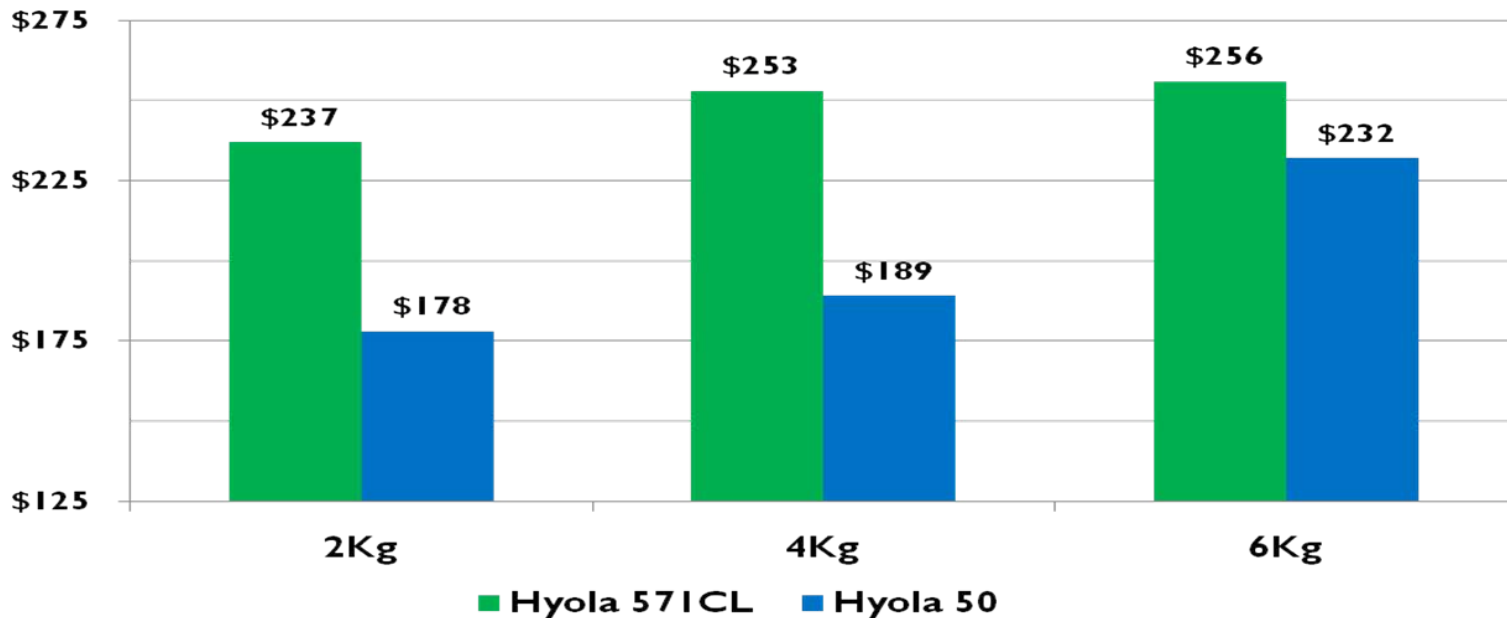


High Yielding Oilseed Local Agronomy



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2009 NATIONAL HYOLA HYBRID F1 VS RETAINED F2 SEED
HYOLA 50 & HYOLA 57ICL GROSS RETURN LOSS IN \$/Ha



\$/HA GROSS RETURN GENERATIONAL CANOLA COMPARISON BASED ON YIELD, \$400/MT,
HYBRIDS @ \$20/KG TREATED AND F2 GEN @ \$5/KG NON TREATED

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HYOLA 2010 TARGET POPULATION TRIAL DETAILS

Evaluate Hybrids vs OP canola - targetted populations of 25, 40, 55 and 70 plants per m² for hybrids and 40, 55, 70 and 90 plants per m² for OP varieties.

These populations were targeted by adjusting seed volume per packet taking into account seed count per kg and germination % and using an 80% survival rate.

Conventional – Hybrid vs OP – (4 sites)

Harvested Mean Trial Yields ranged from 1.16MT/ha to 3.86MT/Ha
SA sites included Cummins, Clare, Maitland and Bordertown

Clearfield – Hybrids– (14 sites)

Harvested Mean Trial Yields ranged from 0.90MT/ha to 3.86MT/Ha
SA sites - Cummins, Clare, Maitland and Bordertown
VIC sites - Beulah and Dookie

NSW sites – Temora, Barunga, Canowindra, Wallendbeen, Milbrulong, Corowa

V

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HYOLA 2010 TARGET POPULATION TRIAL DETAILS

Triazine Tolerant – Hybrid vs OP – (14 sites)

Harvested Mean Trial Yields ranged from 0.90MT/ha to 3.86MT/Ha

SA sites - Cummins, Clare, Maitland and Bordertown

VIC sites - Beulah and Dookie

NSW sites – Temora, Barooga, Canowindra, Wallendbeen, Milbrulong, Corowa

WA sites - Arthur River and Kojonup

Roundup Ready – Hybrids – (10 sites)

Harvested Mean Trial Yields ranged from 0.90MT/ha to 3.86MT/Ha

VIC sites - Beulah and Dookie

NSW sites – Temora, Barooga, Canowindra, Wallendbeen, Milbrulong, Corowa

WA sites - Arthur River and Kojonup

Full Individual Analysis data now available online or via email from Pacific Seeds

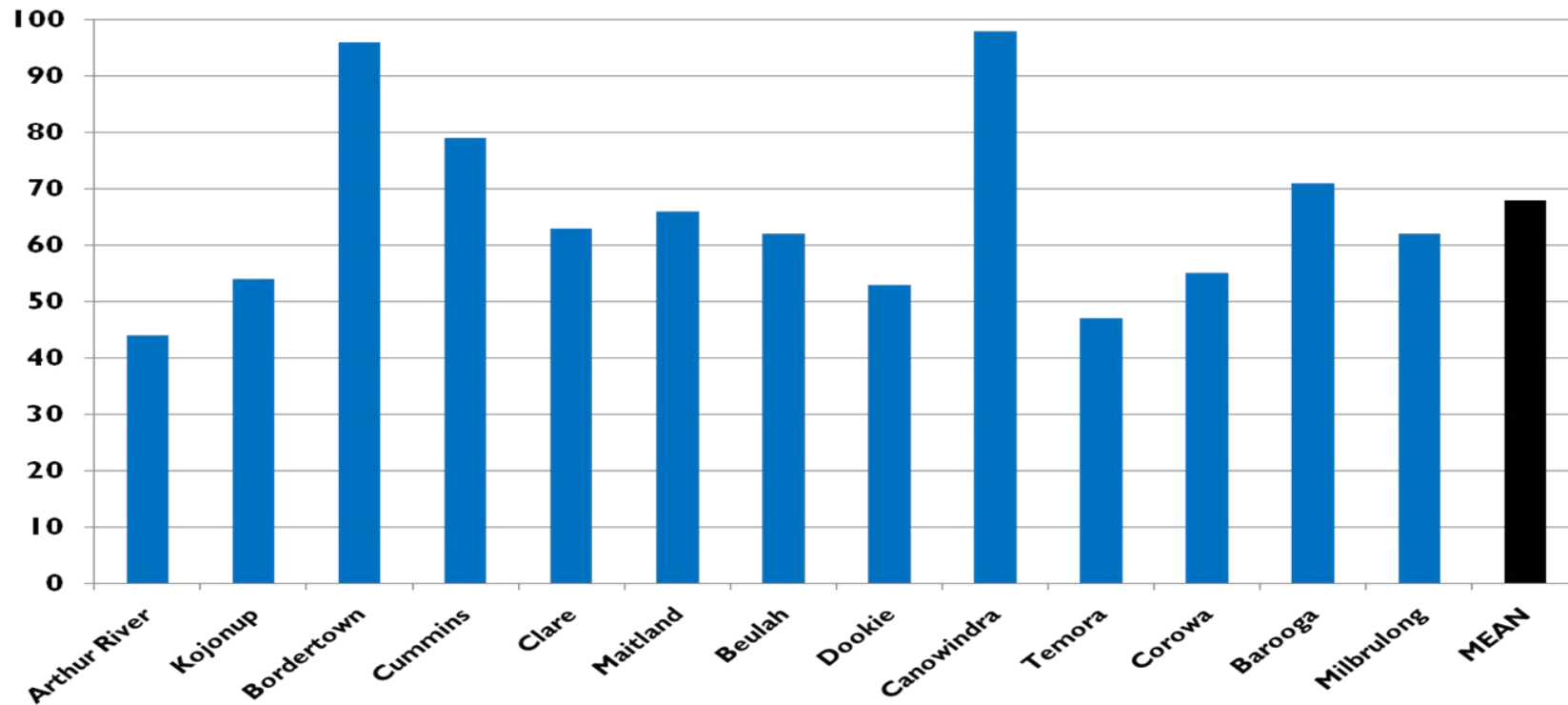
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2010 HYOLA POPULATION TRIAL SITE MEAN %
ESTABLISHMENT - CNV + RR + CL + TT TECHNOLOGIES



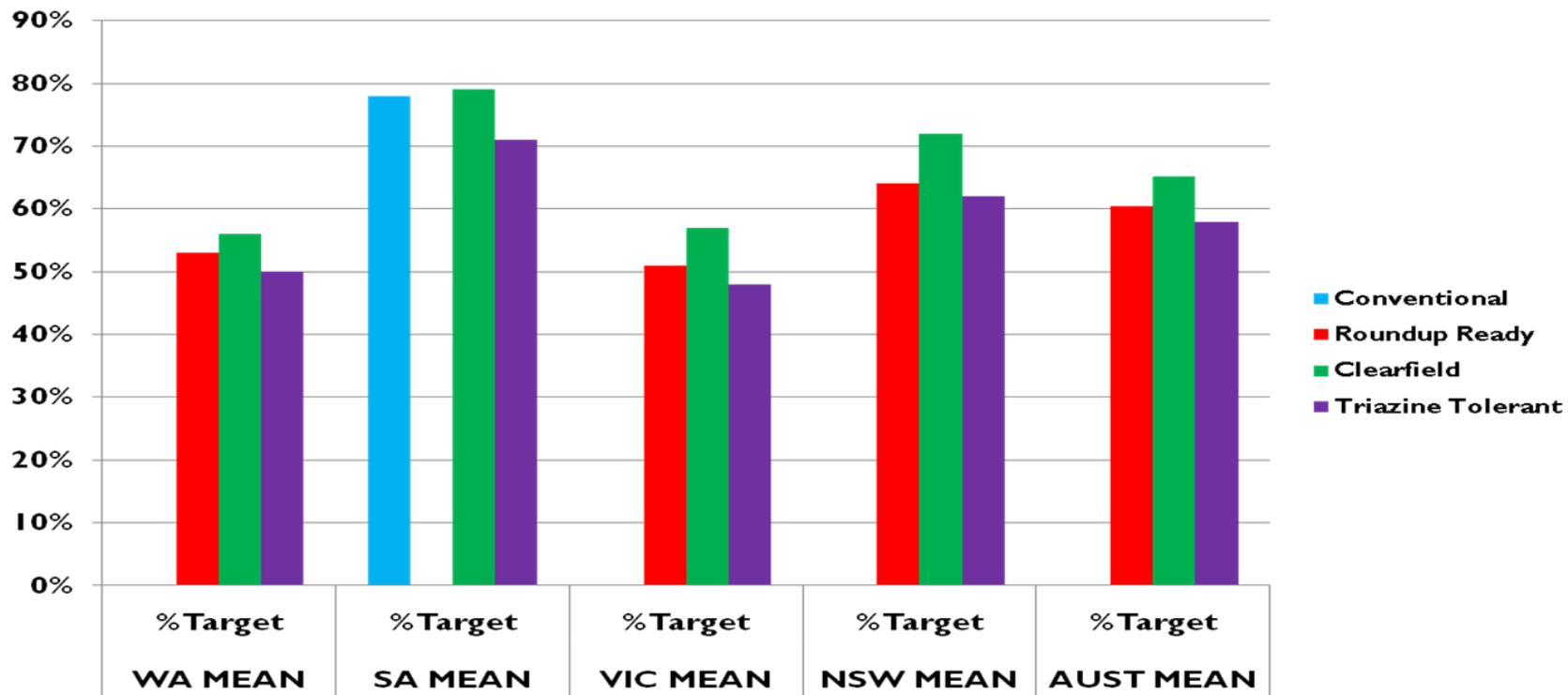
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HYOLA 2010 NATIONAL TRIALS MEAN % OF HT TARGET POPULATION ESTABLISHMENT



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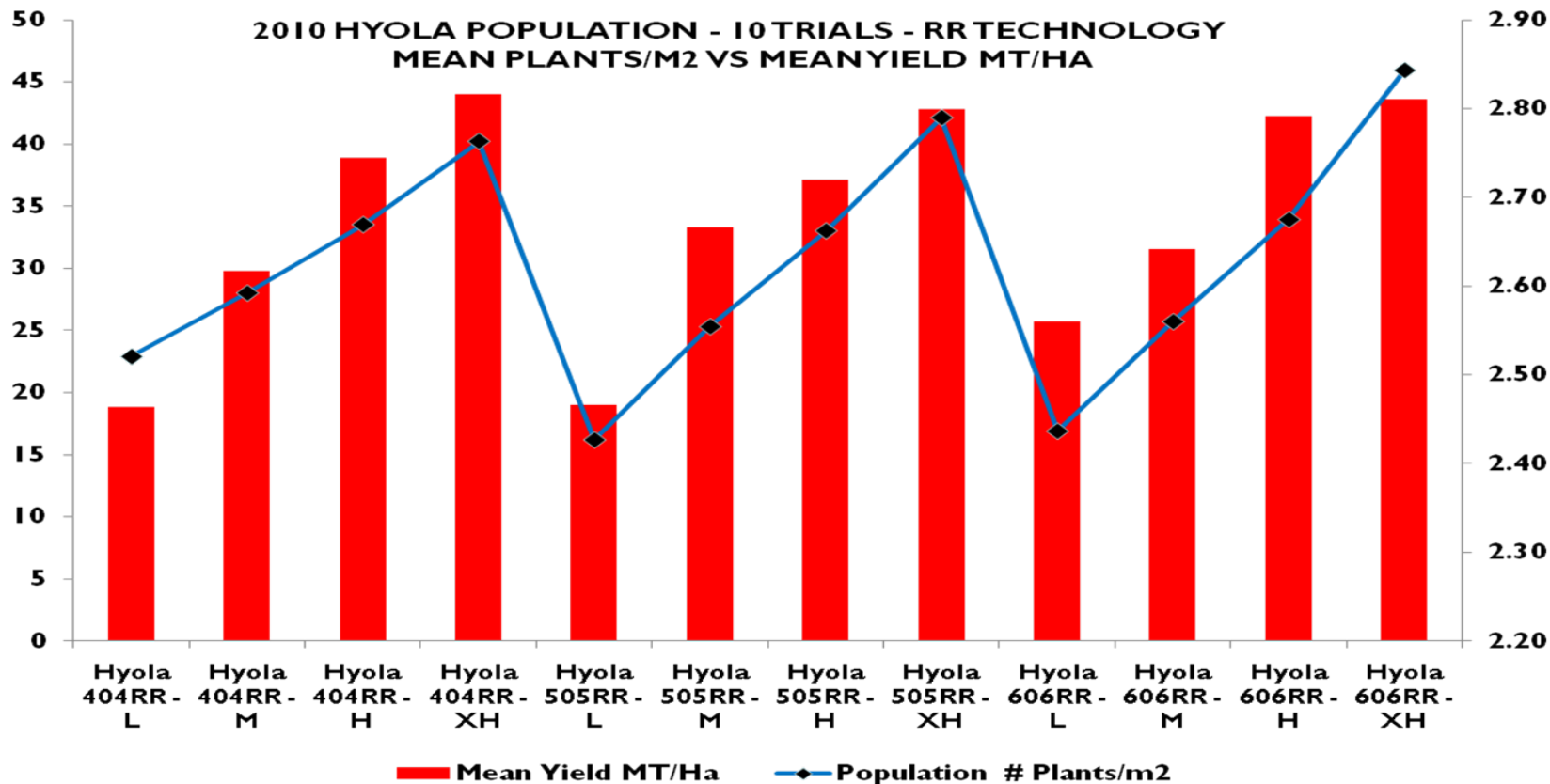
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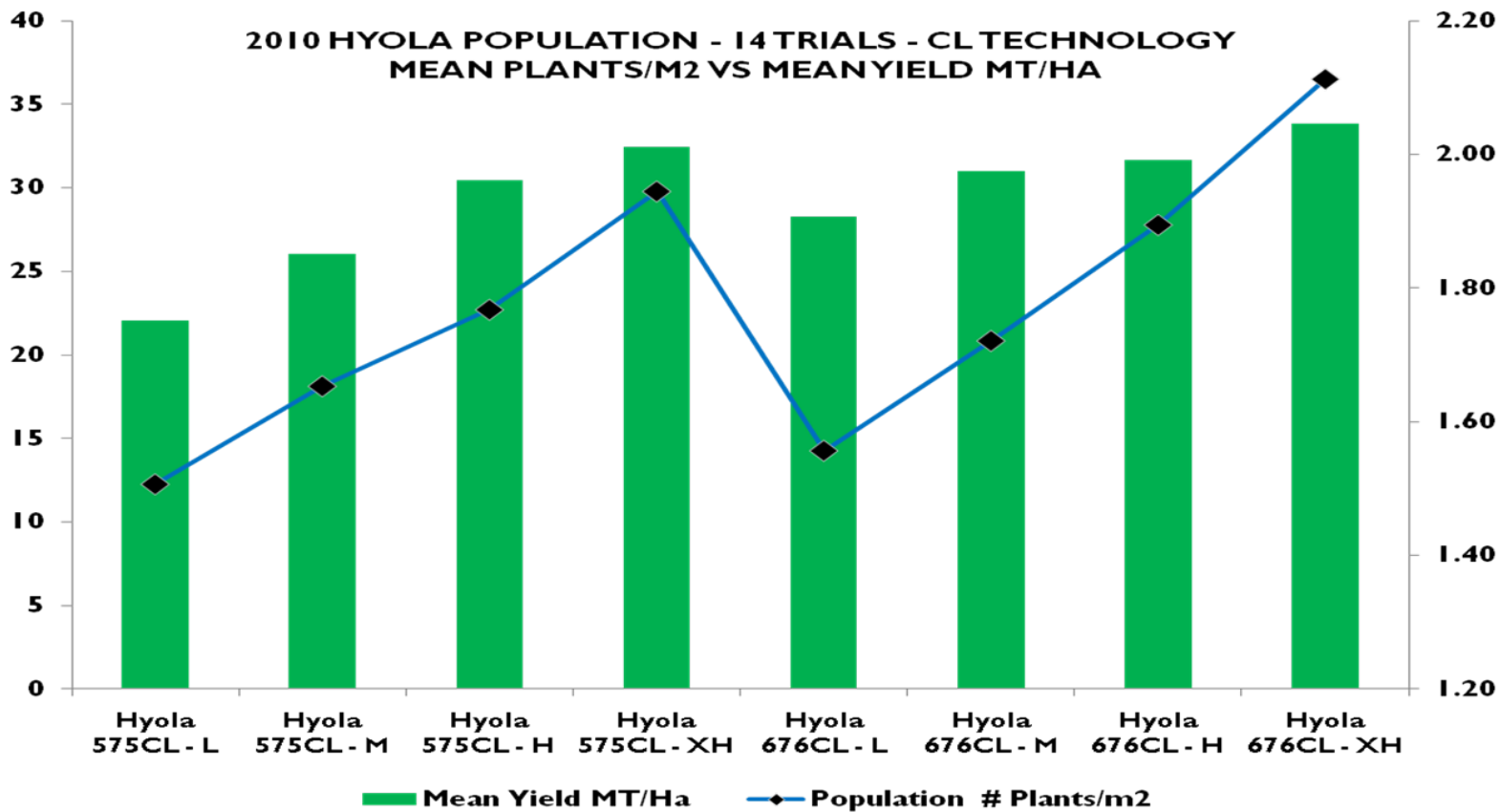


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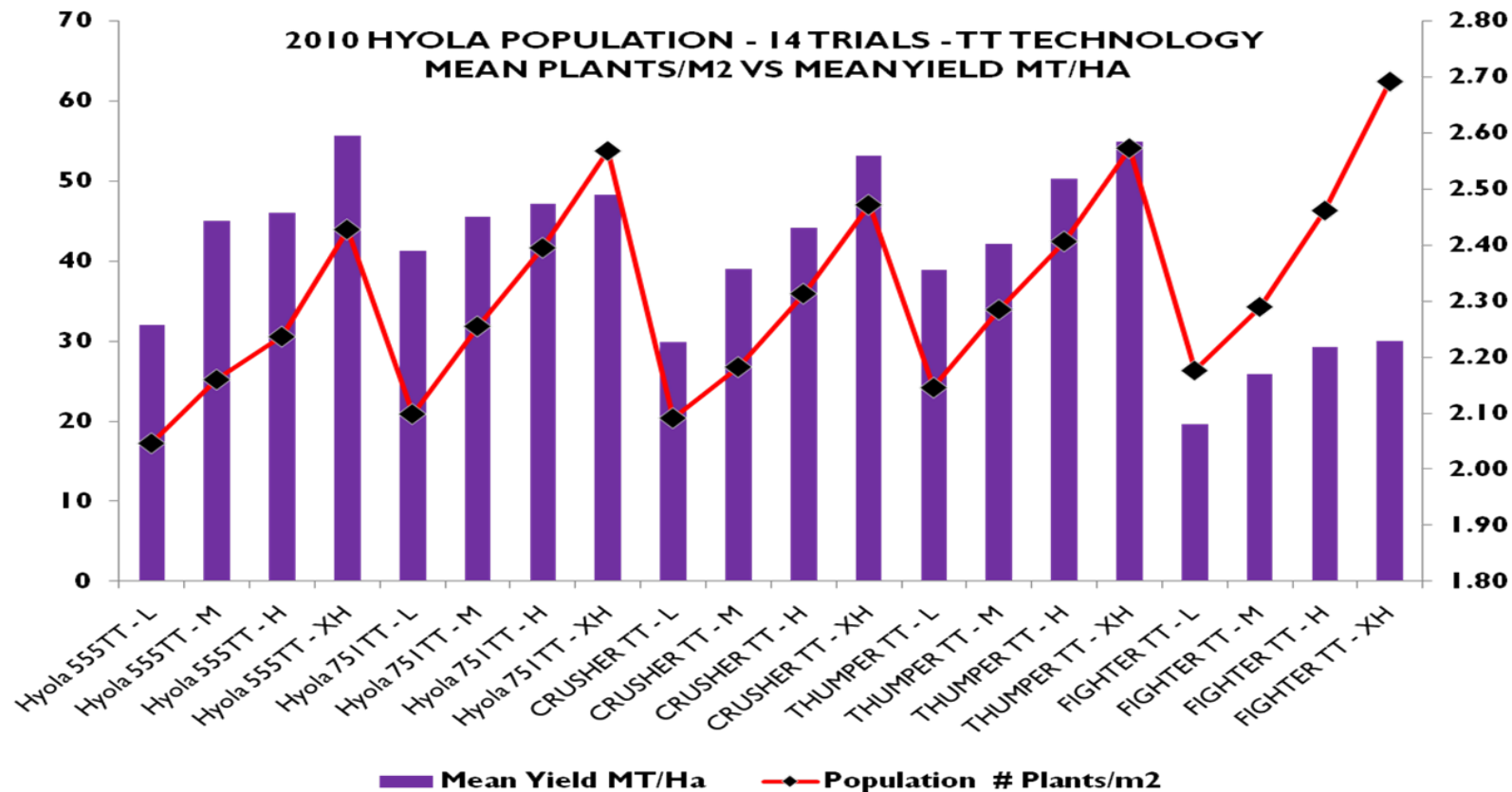
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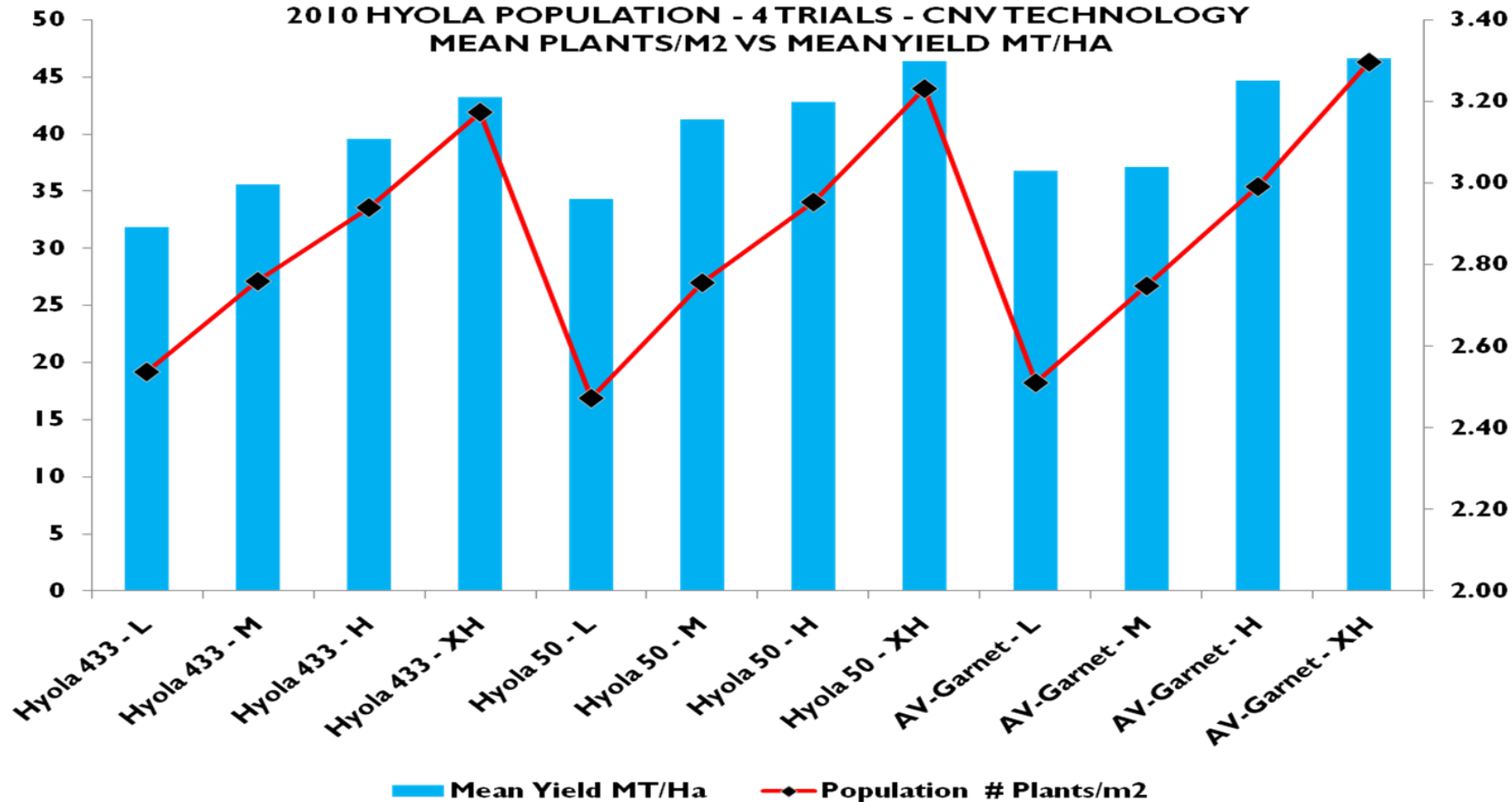
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2010 HYOLA POPULATION - 4 TRIALS - CNV TECHNOLOGY
MEAN PLANTS/M2 VS MEANYIELD MT/HA





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Hyola HYBRIDS

ULTIMATE CANOLA PERFORMANCE

OPTIMUM PLANT POPULATION RECOMMENDATIONS

CANOLA VARIETY BREEDING	LOW TO MEDIUM-LOW 200 - 300mm GSR 0.5-1.5 MT/HA	MEDIUM-LOW TO MEDIUM-HIGH 300 - 450mm GSR 1.5-2.5 MT/HA	MEDIUM-HIGH TO VERY HIGH 450 - 600mm+ GSR 2.5- 4.0 MT/HA
HYBRID TECHNOLOGY	10 - 25 PLANTS/m2	25 - 40 PLANTS/m2	40 - 60 PLANTS/m2
OPEN POLLINATED	15 - 30 PLANTS/m2	30 - 50 PLANTS/m2	50 - 75 PLANTS/m2

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2010 NATIONAL HYOLA TRIALLING SYSTEM HYBRID F1 VS F2 GENERATION TRIAL RESULTS



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HYOLA 2009 HARVESTED AGRONOMY TRIAL DETAILS HYBRID vs RETAINED SEED EVALUATIONS

3 Herbicide Technologies being evaluated in 15 replicated trials in 4 states.

Harvested Mean Trial Yields ranged from 0.833MT/ha to 3.605MT/ha
Conventional, Clearfield and Triazine Tolerant - F1 vs F2 (15 sites)
Hyola 433, Hyola 50, Hyola 575CL, Hyola 676CL, Hyola 555TT, Hyola 751TT

SA sites - Cummins, Clare, Maitland and Bordertown

VIC sites - Kaniva, Greenlake and Dookie

NSW sites - Barooga, Wallendbeen, Corowa, Temora, Milbrulong, Canowindra

WA Sites – Arthur River and Kojonup

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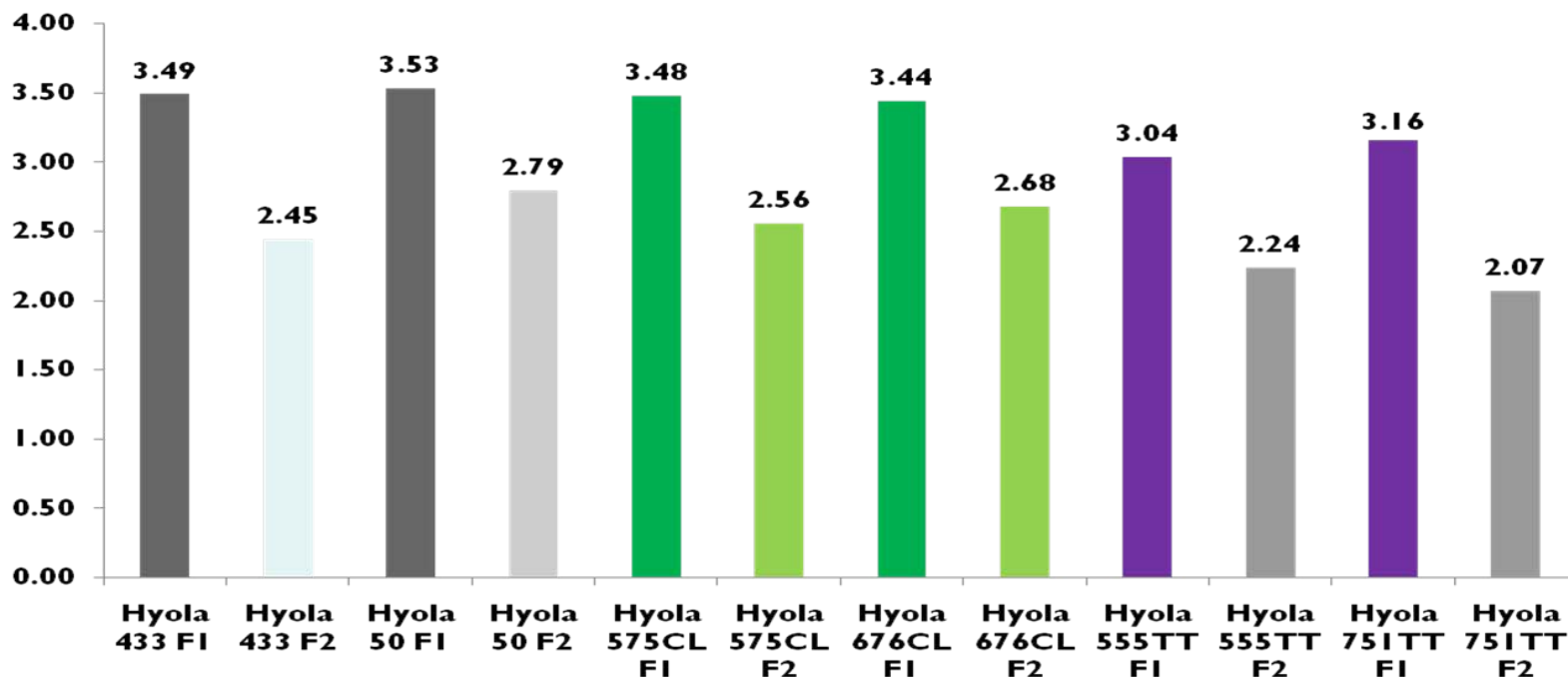






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NEW SOUTH WALES HYOLA GENERATION - 6 TRIALS MEANYIELD MT/HA FI VS F2

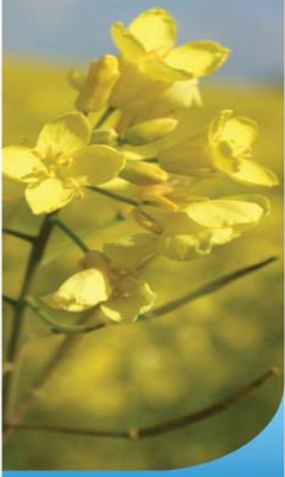


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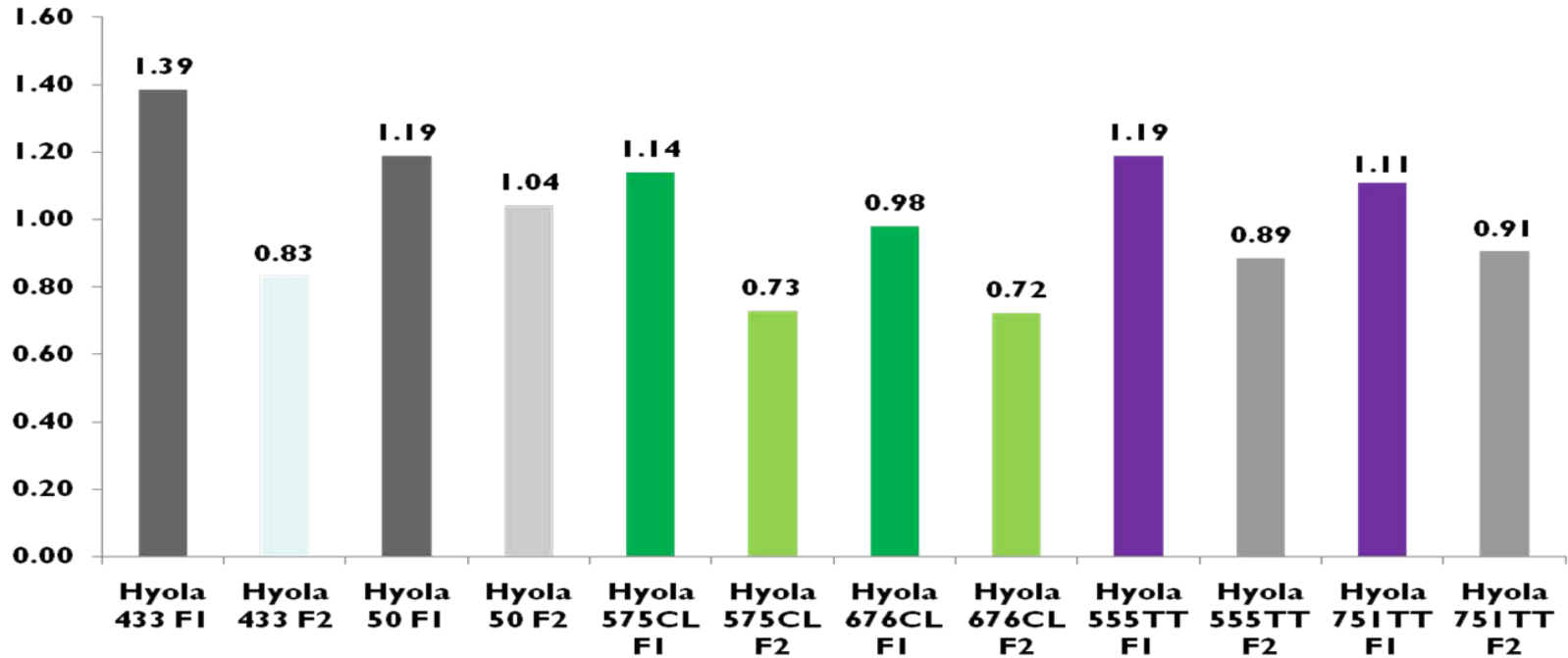


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WESTERN AUSTRALIAN HYOLA GENERATION 2 TRIALS - MEAN YIELD MT/HA FI VS F2



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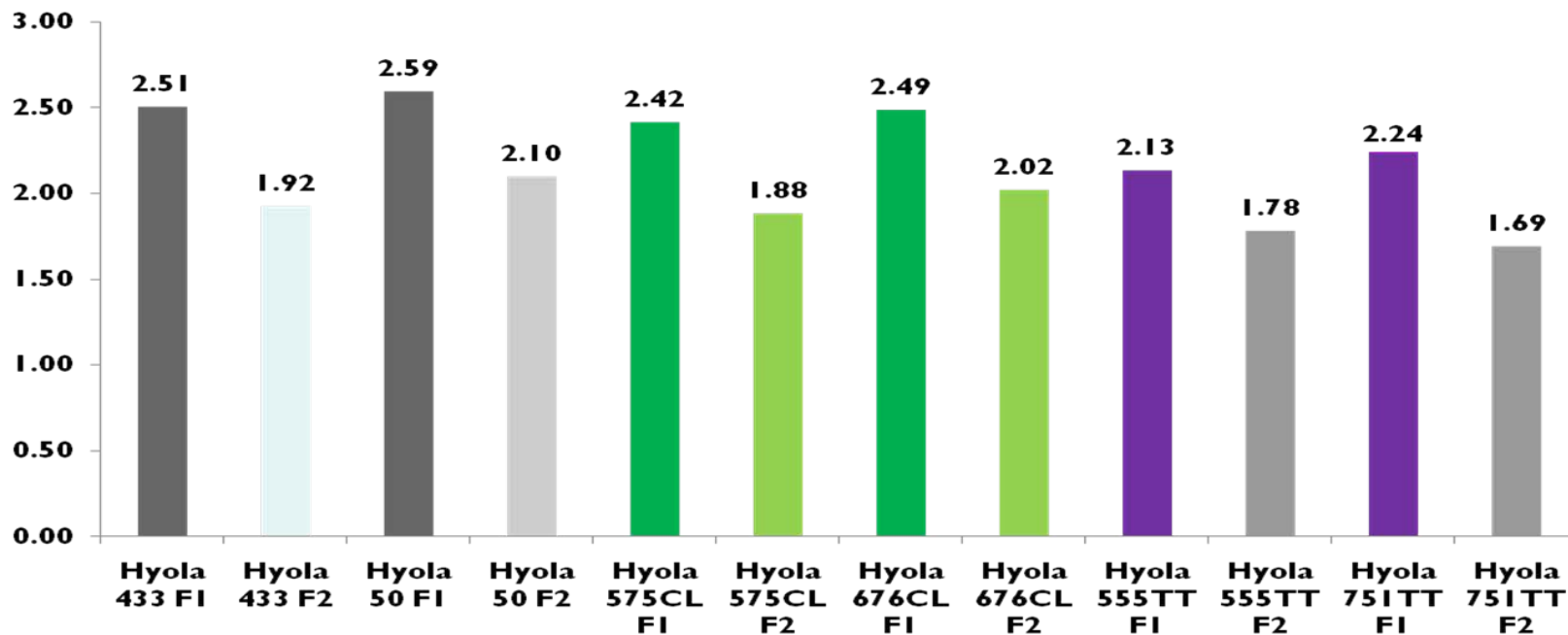
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SOUTH AUSTRALIAN HYOLA GENERATION - 4 TRIALS MEANYIELD MT/HA FI VS F2



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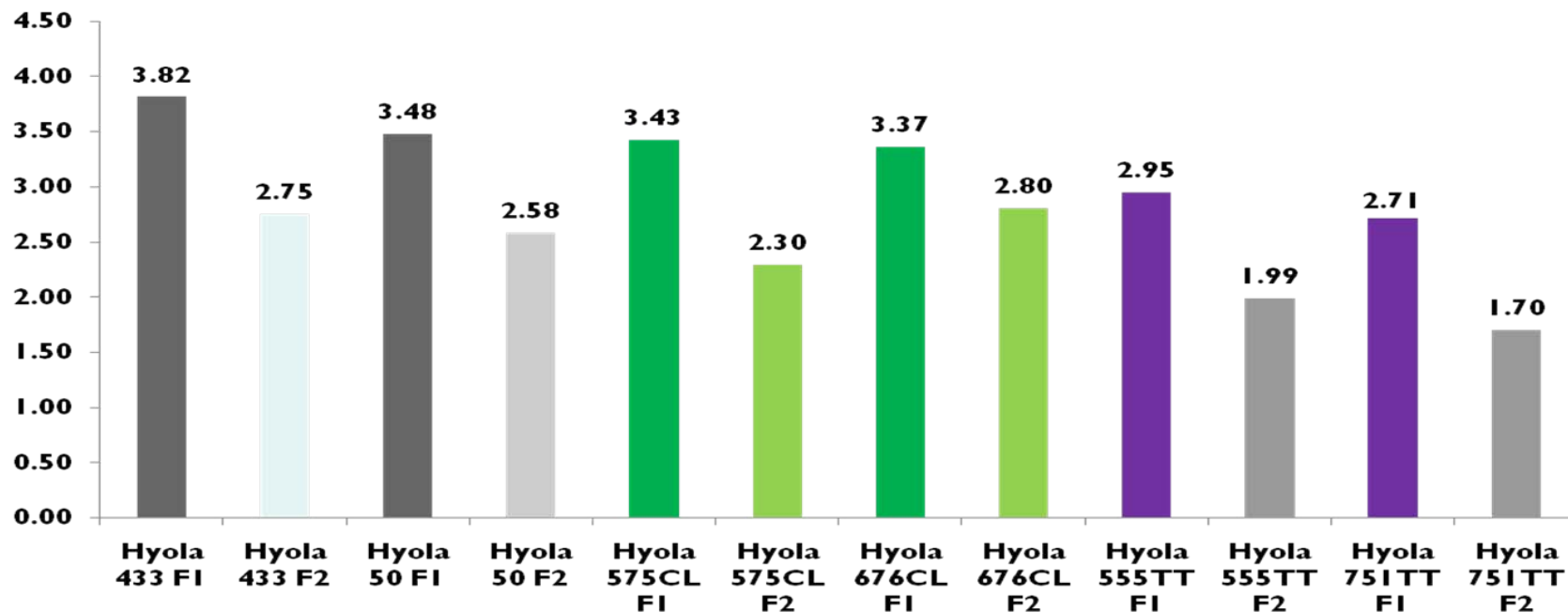
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VICTORIAN HYOLA GENERATION - 3 TRIALS MEANYIELD MT/HA FI VS F2



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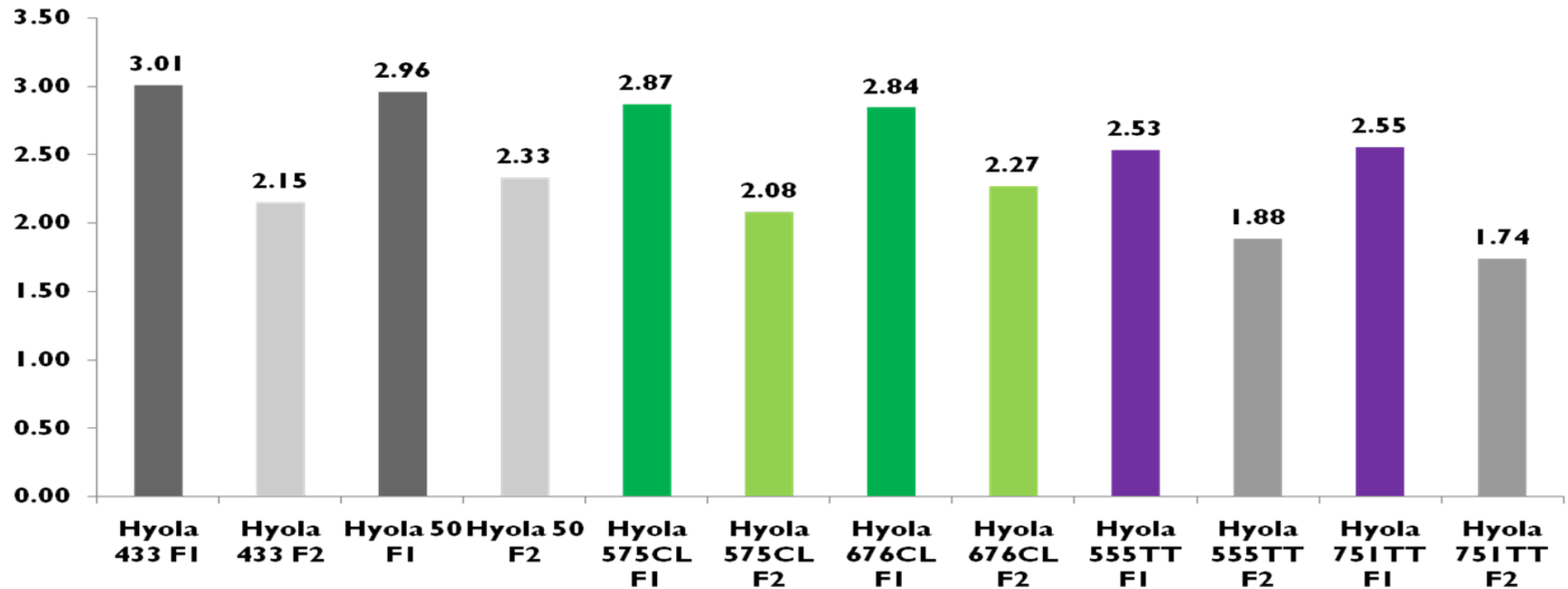
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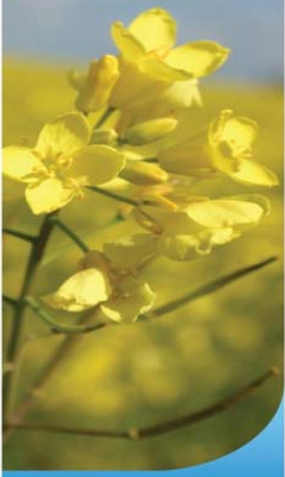
NATIONAL HYOLA GENERATION - 15 TRIALS MEANYIELD MT/HA FI VS F2



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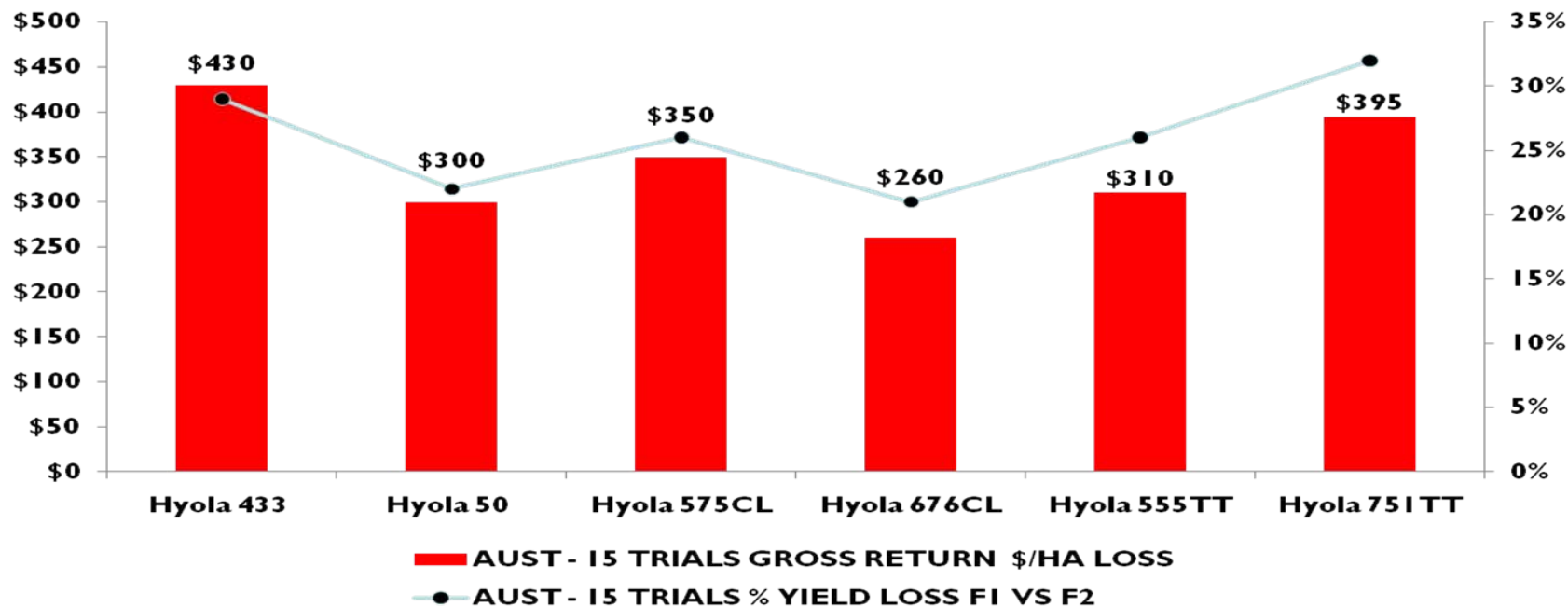


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NATIONAL HYOLA GENERATION - 15 TRIALS - FI VS F2 %YIELD LOSS & GROSS RETURN \$/HA LOSS



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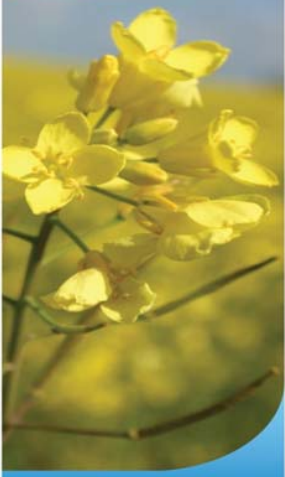
THANK YOU



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AUSTRALIA'S HYBRID CANOLA SPECIALISTS



Seed rates used

	1000 seed wt,g	10	20	40	80	120	160
ATR Cobbler	3.042	0.42	0.85	1.69	3.38	5.07	6.76
CB Mallee	4.136	0.57	1.15	2.30	4.60	6.89	9.19
44C79	3.04	0.42	0.84	1.69	3.38	5.07	6.76
45Y82	5.966	0.83	1.66	3.31	6.63	9.94	13.26
GT Scorpion	3.46	0.48	0.96	1.92	3.84	5.77	7.69
Hyola 502	5.27	0.73	1.46	2.93	5.86	8.78	11.71

2010 Canola Density Trials

