



Hybrid vs OP canola: which one wins where?

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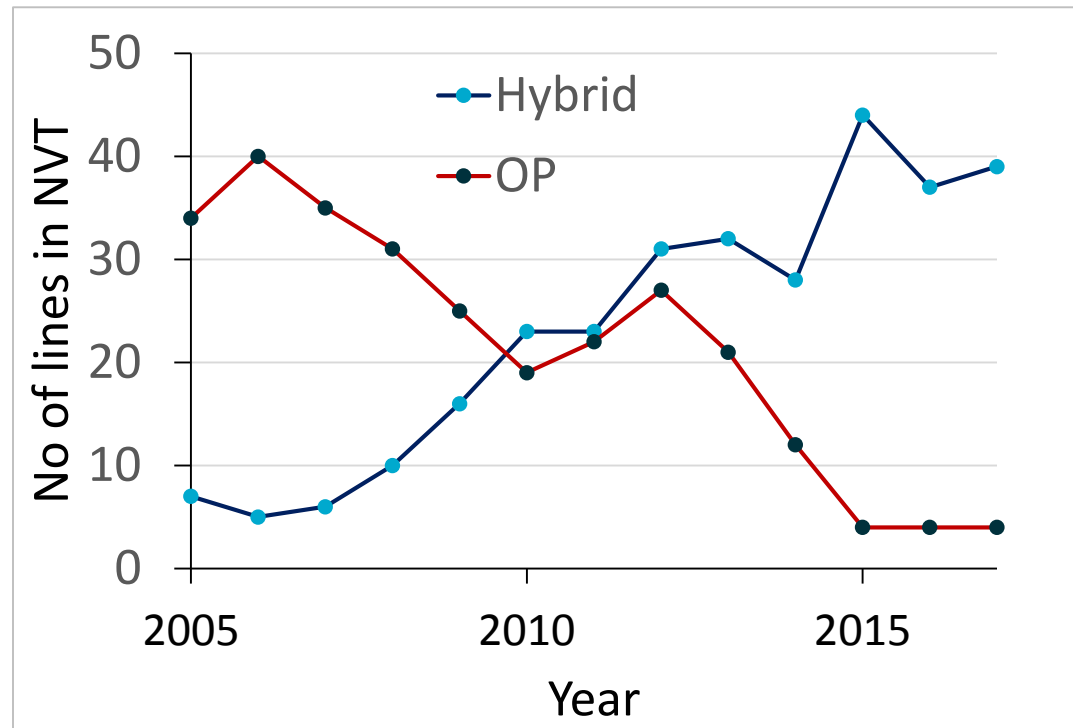


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Background

- Canola area: 1.8 – 2 mil ha
- Production: 3-4 mil T annually.
- OP TT dominates.
 - WA: 75-80% OP TT
 - Eastern states: 70%
- Breeding
 - Shifting towards hybrids;
 - OPs drop off.
 - Competing for 30% of market.
- Disconnection between breeders and growers.



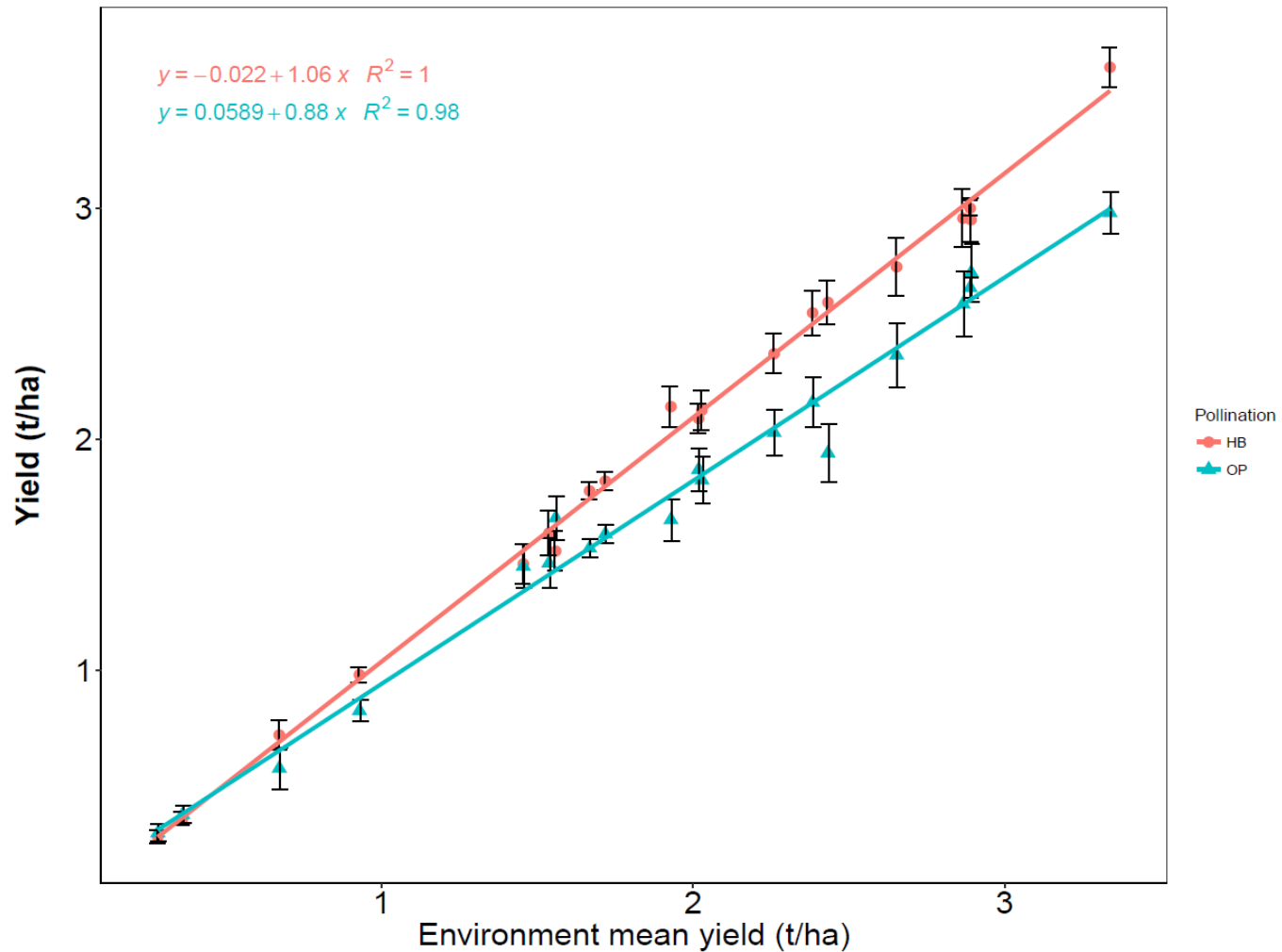
Aims

- What are the roles of hybrids and OPs?
- At what yield level farmers can grow hybrid canola profitably?
- Where should hybrid and OP canola be grown?

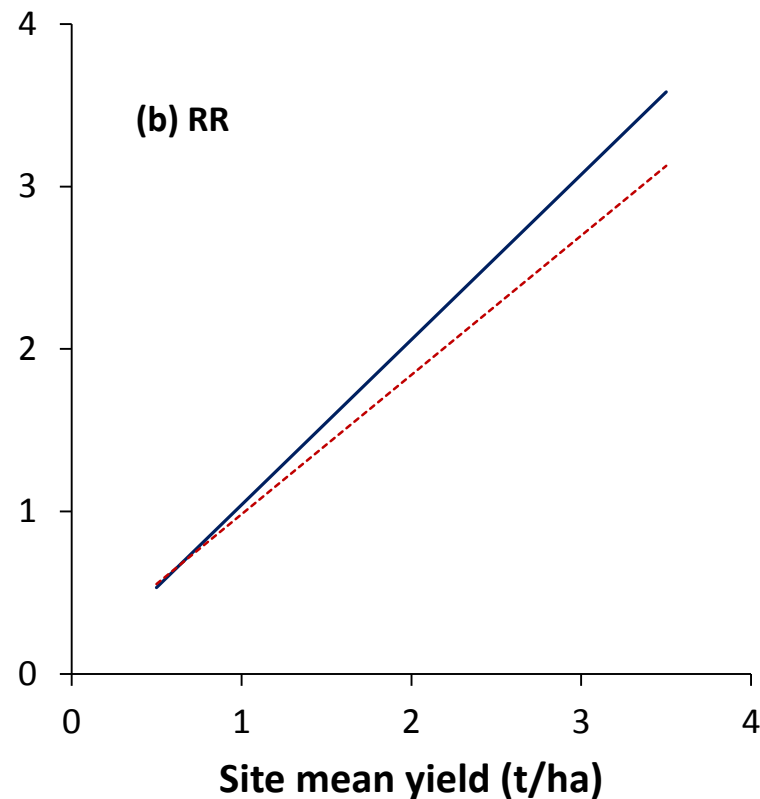
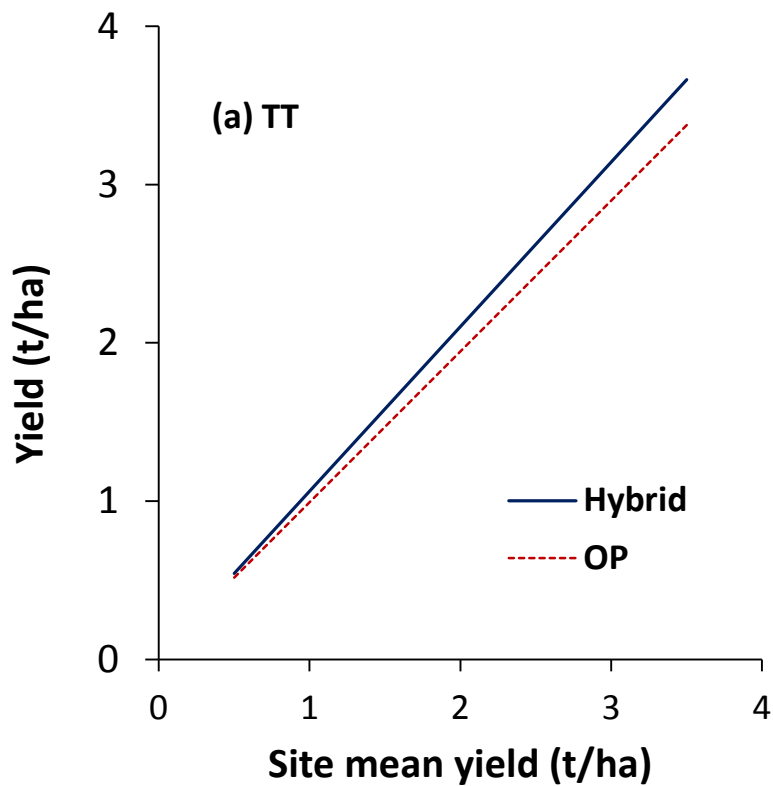
The experiments

Site	Year	Treatments	Hybrids	OPs
Merredin	2014	N (low vs high N)	12	7
Merredin	2015	TOS (April vs May)	14	6
Merredin	2016	TOS (April vs May)	22	6
Cunderdin	2013	N (low vs high N)	11	10
Cunderdin	2014	N (low vs high N)	12	7
Kojonup	2013	N (low vs high N)	11	10
Kojonup	2014	N (low vs high N)	12	7
Kojonup	2015	Water	14	6
Kojonup	2016	TOS (Apr vs May)	22	6
Kojonup	2017	TOS (May vs June)	28	9

Yield response of hybrid and OP to environment



Responses of hybrids and OPs to E – NVT trials



Profitability

- $Profit = (Yield * Price - Cost) * risk$
- $Cost = Seed\ cost + Variable\ cost\ (N) + Fixed\ cost$
- Comparison with OP TT
 - $Yield_{OPTT} * P - Cost_{OPTT} = Yield_{HB} * P - Cost_{HB}$
 - $Yield_{break-even}$

Fixed and variable cost

Table 4. Economic analysis assumptions. Grain price (\$/t) and input costs (\$/ha) for hybrid and OP canola classified by herbicide tolerance groups

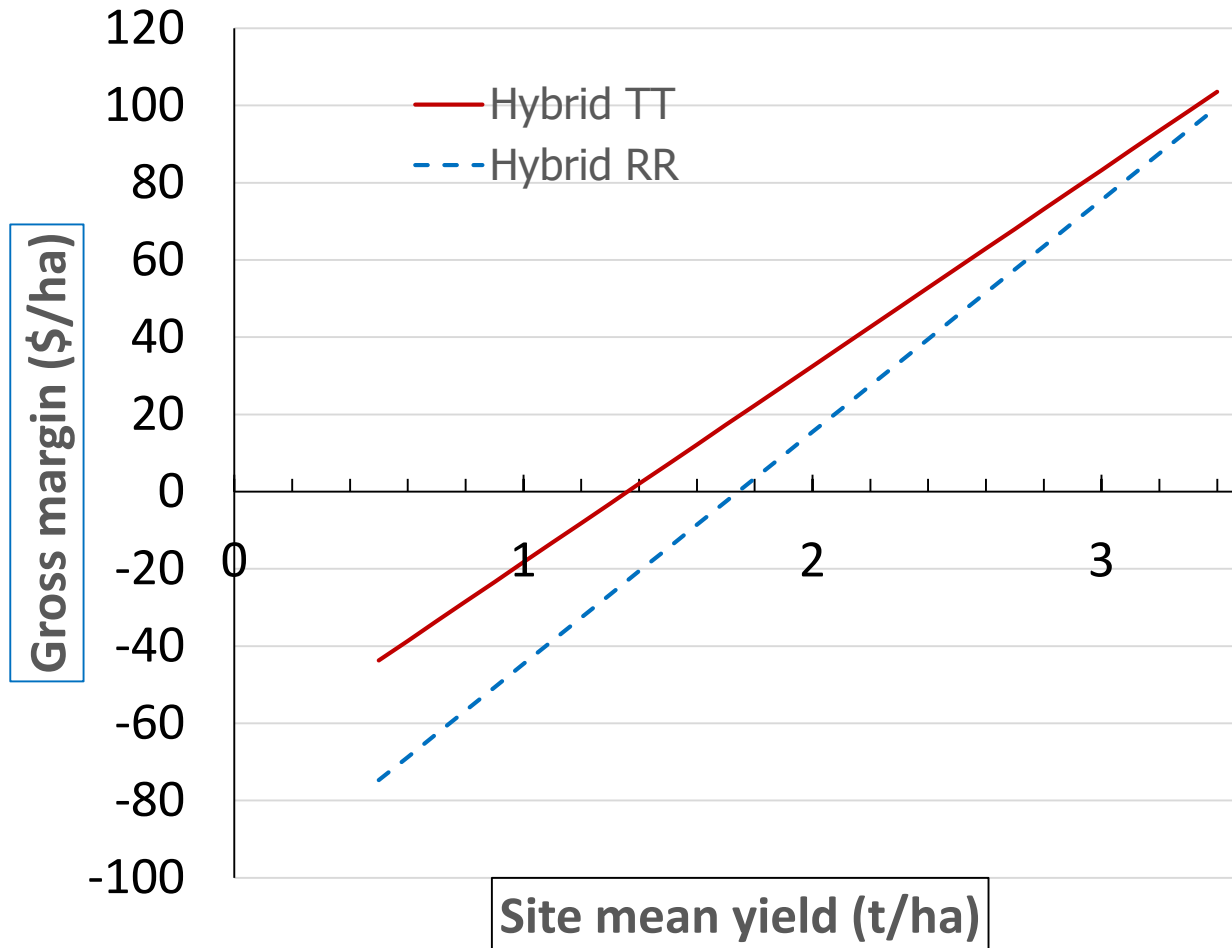
Note that N is assumed to cost \$1/kg. The cost of N fertiliser varies with yield and is not included in the Table

Parameter	RR	TT	CL	CV
Seed (OP) (\$/ha) ^A	79	8	8	8
Seed (hybrid) (\$/ha) ^A	79	68	68	68
Herbicide (\$/ha)	54	63	95	64
Insecticide and fungicide (\$/ha)	17	17	17	17
Fixed cost (\$/ha) ^B	149	149	149	149
Grain price (\$/t)	509	523	523	523

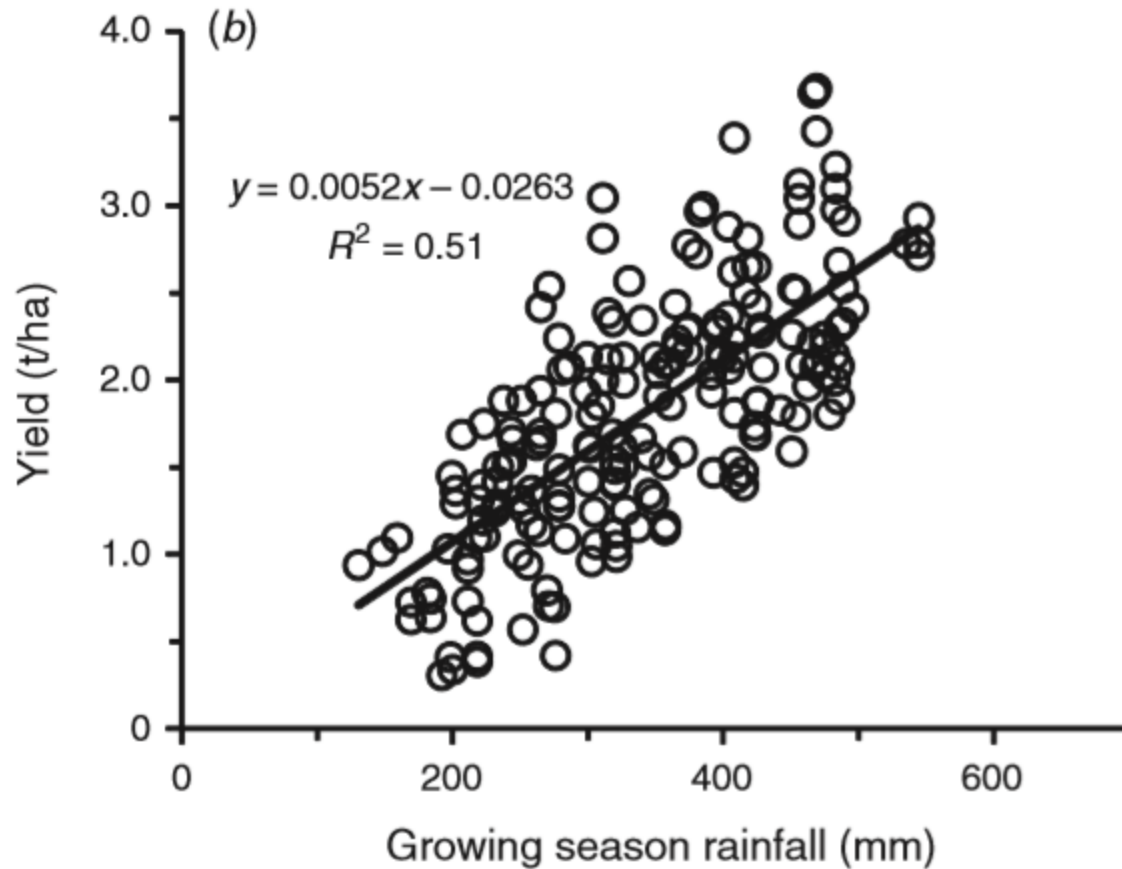
^ASeeding rate was assumed at 2.5 kg/ha for hybrid and RR canola and 4 kg/ha for OP canola.

^BFixed costs include allowance for seeding, spraying, swathing, harvesting, labour, freight grains, insurance and interest.

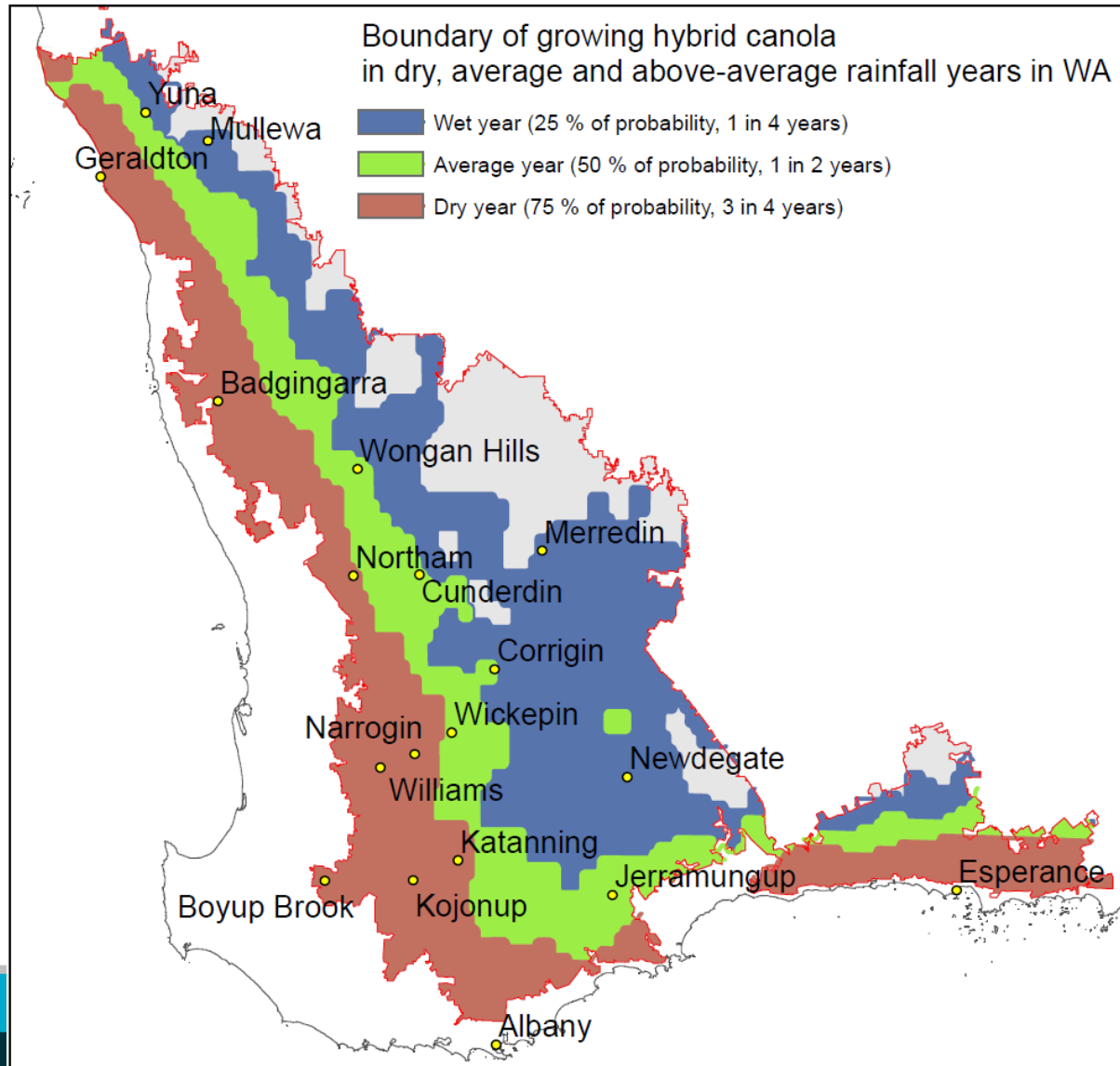
Break-even yield - compared to OP TT



Yield and the growing season rainfall



Where to grow hybrid canola?



Conclusion

- Both hybrids and OPs play different roles in Australia canola industry
 - OPs: produce similar yield to hybrids in the low yielding environment. It has lower cost and is more profitable in the low rainfall zone.
 - Hybrids: provide the potential to produce high yield and greater profit in the high rainfall area.
- The break-even for hybrid TT is $> 1.3\text{t/ha}$ and hybrid RR is 1.7t/ha .
 - When yield potential is greater than these break-even yield, growers can switch from OPs to hybrids and make a profit from higher yield of hybrids.
- Canola industry would be well served by
 - **Continuation of the availability of OP-TT varieties** for low rainfall area
 - **Hybrids for high rainfall area.**

Acknowledgements

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