

Canola



How close can the rotation be?

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**Grains
Research &
Development
Corporation**

Canola disease survey 2009

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- A total of 97 samples were collected across canola growing regions of WA.
- 100 plants were collected per sample with the roots intact.
- Plants assessed for the incidence of
 - Sclerotinia stem rot (SSR)
 - Blackleg (BL)
 - Club root (CR from the northern Ag region only)
 - Powdery mildew (PM)

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Average incidence, range and prevalence of various fungal diseases in 2009

Canola Disease	Average incidence (%)	Range (%)	Prevalence (%)
SSR	9	0-77	40
BL	69	0.7-92	100
CR (NAR)	25	3-65	96
PM	0	0	0

2008 Vs 2009 disease levels

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		2009 comparison	
Disease		Av incidence	% crops affected
SSR		↓2%	↓19%
BL		↑22 % (↑18%)	No change
CR (NAR)		↑14%	↑7%

Reasons for high blackleg in 2009

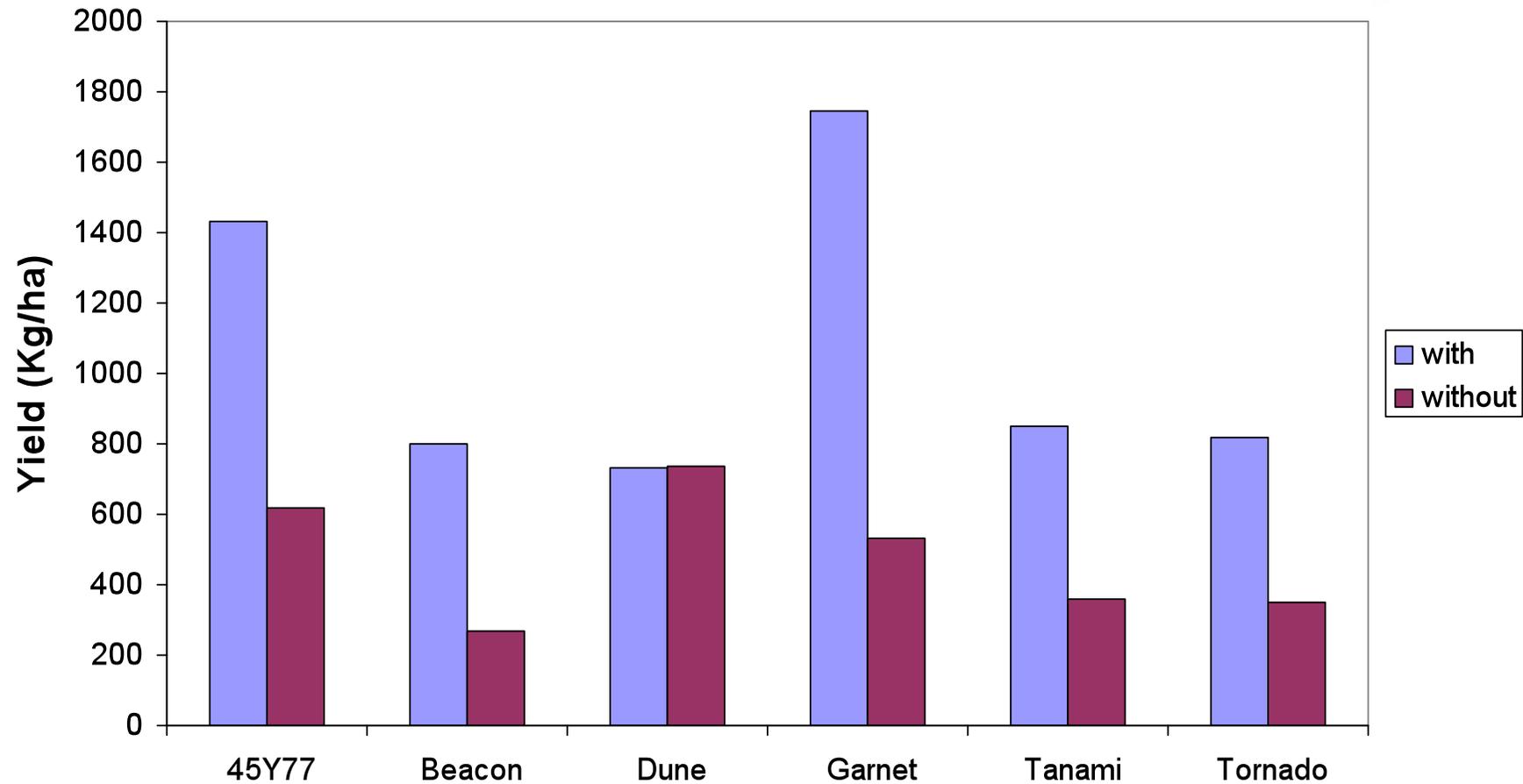
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- Shortened rotations
- Conducive conditions for the release of ascospores in most of the southern region
 - Synchronisation of ascospore showers with the seedling susceptible phase
- Sowing MS-S varieties
 - closer to last year's residues
 - without fungicide protection
- Dry seasonal conditions towards the end of the growing season

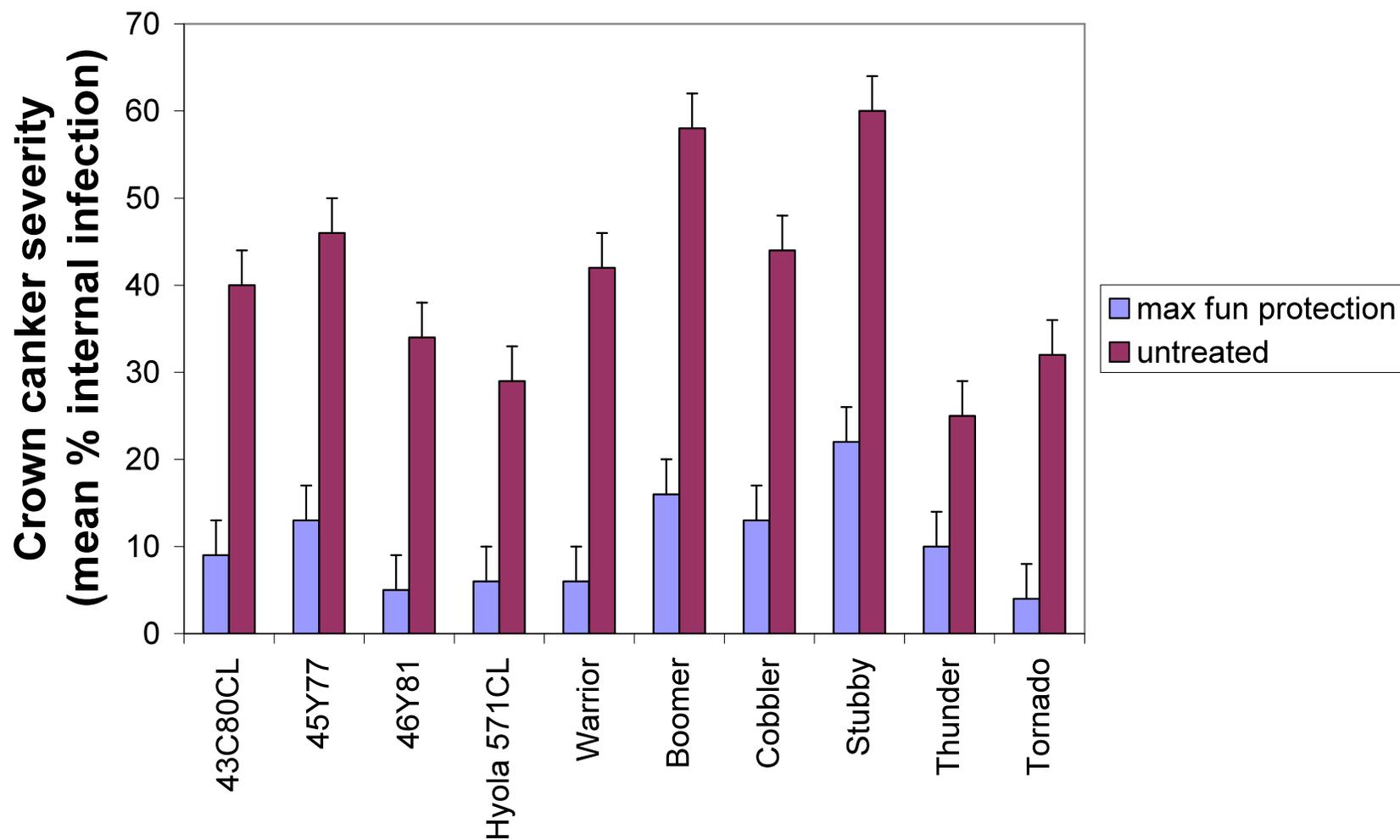
Yield of canola varieties with + and – fungicide (continuous canola)

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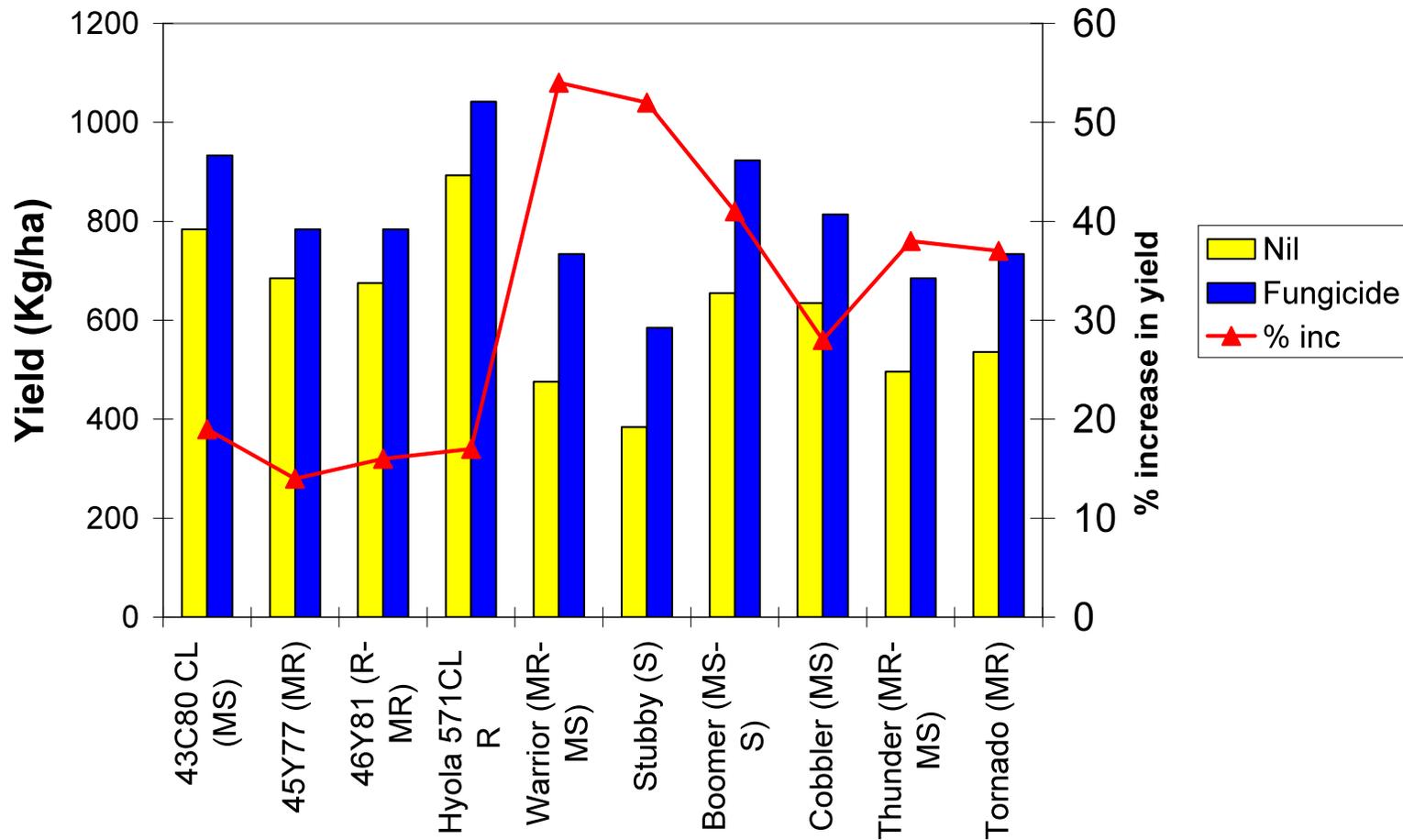
Crown canker severity in canola varieties (1-year rotation at Wongan Hills)

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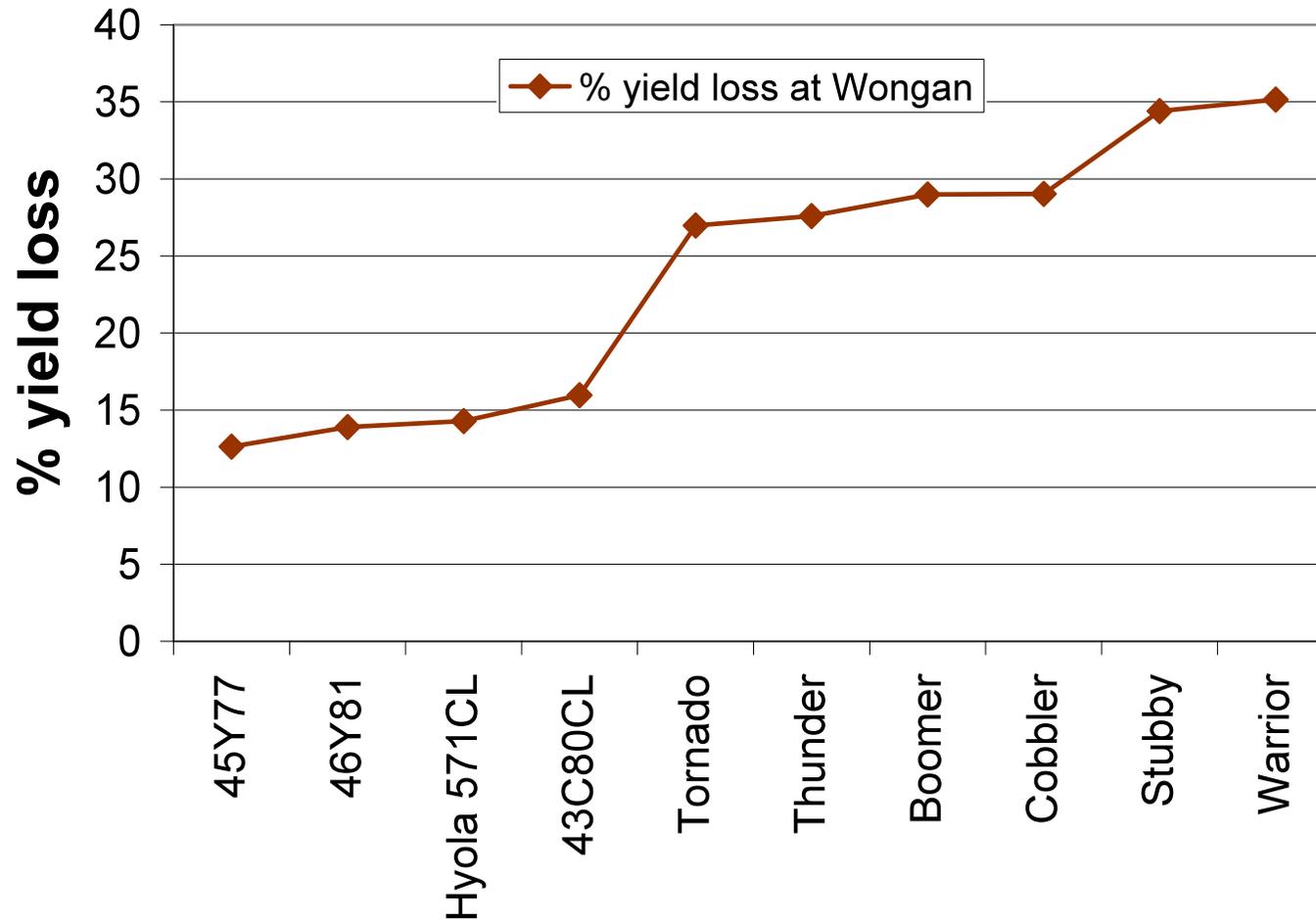
Seed yield and % increase in yield in canola varieties with + fungicide (1 year rotation, Wongan Hills)

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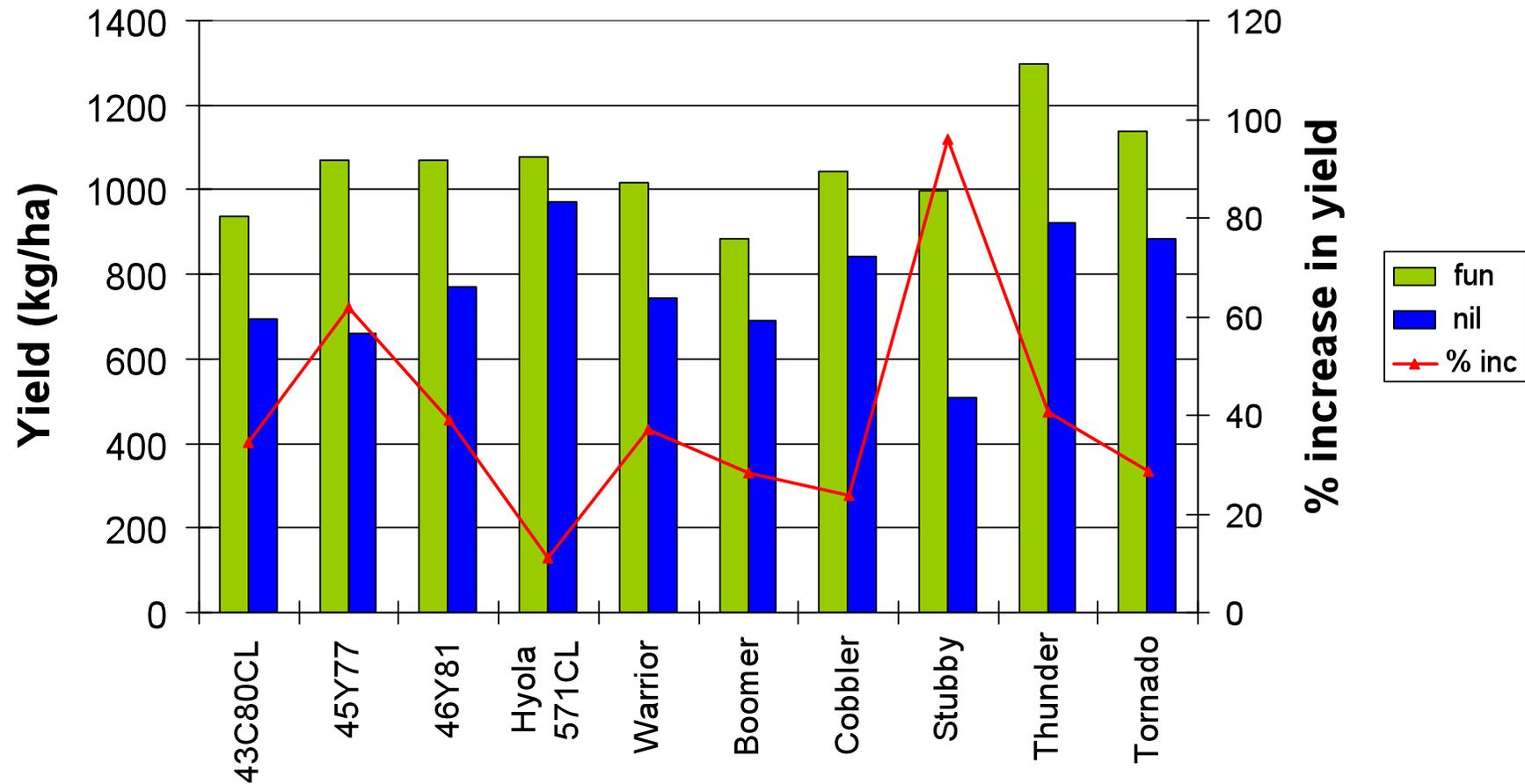
Yield loss from blackleg in canola varieties (WH)

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Seed yield and % increase in yield in canola varieties with + fungicide (1-year rotation, Katanning)

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Losses from Sclerotinia in canola in UK and WA

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UK (Clarkson, 2009)

Oilseed Rape (600,000 ha)

- Sclerotinia incidence in 2008 was the highest ever recorded
- 6% of stems affected and 37% of oilseed rape crops affected
- Losses approx. £20 million

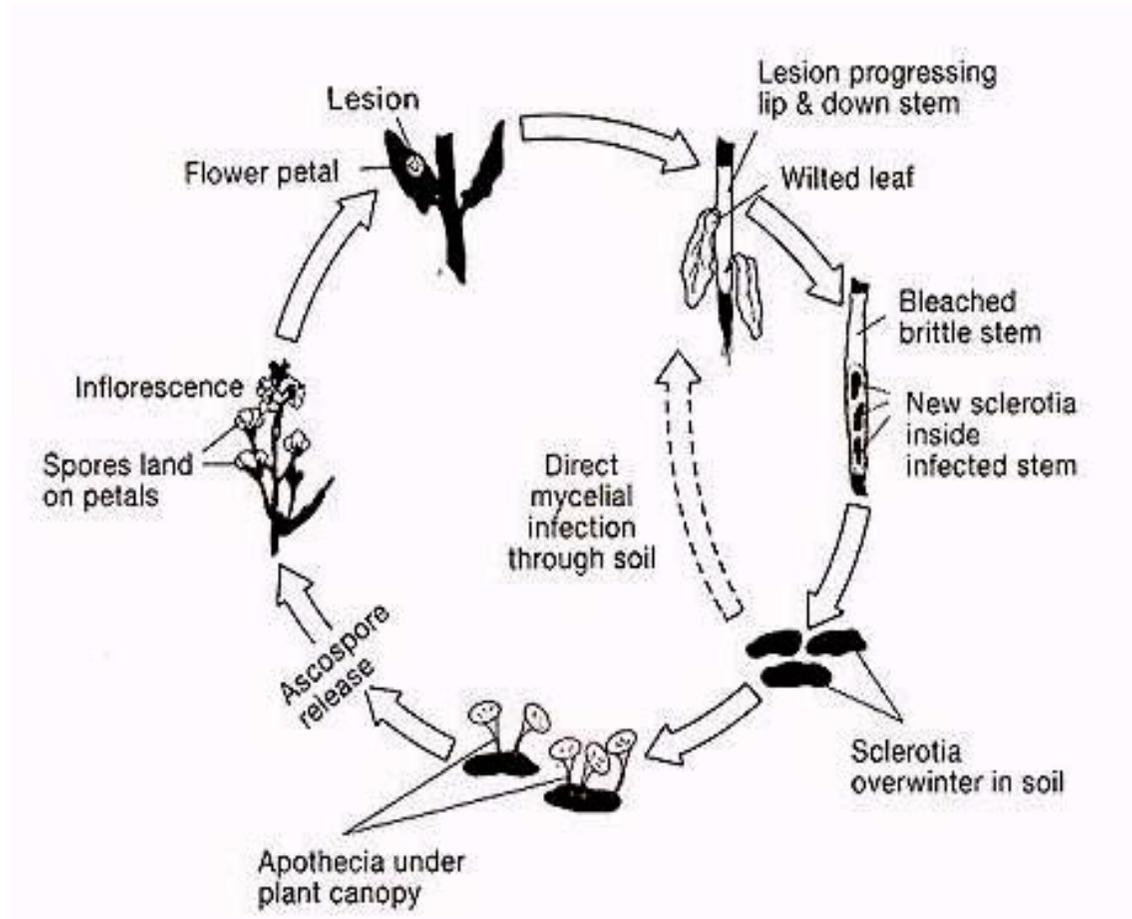
WA

Oilseed Rape (620,000 ha)

- High incidence of Sclerotinia in 2008 in WA
- 11% of stems affected and 60% of oilseed rape crops affected
- Losses approx. \$?????million

Life Cycle of Sclerotinia

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Reasons for high levels of Sclerotinia

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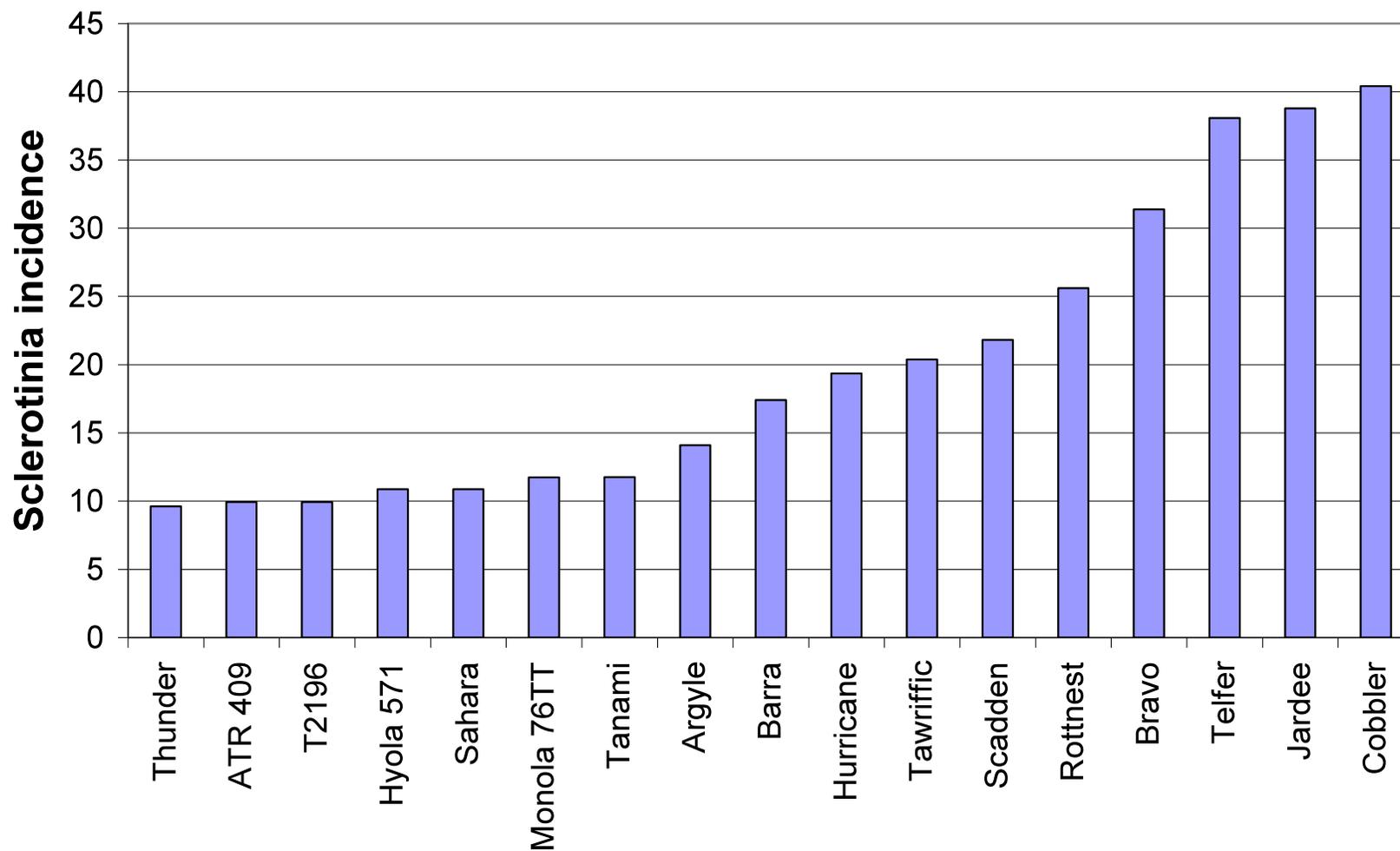


- Gradual build-up of inoculum over the years
- Tighter rotations
- Coincidence of flowering and spore release
- Conducive conditions for disease development
- Susceptibility of current varieties



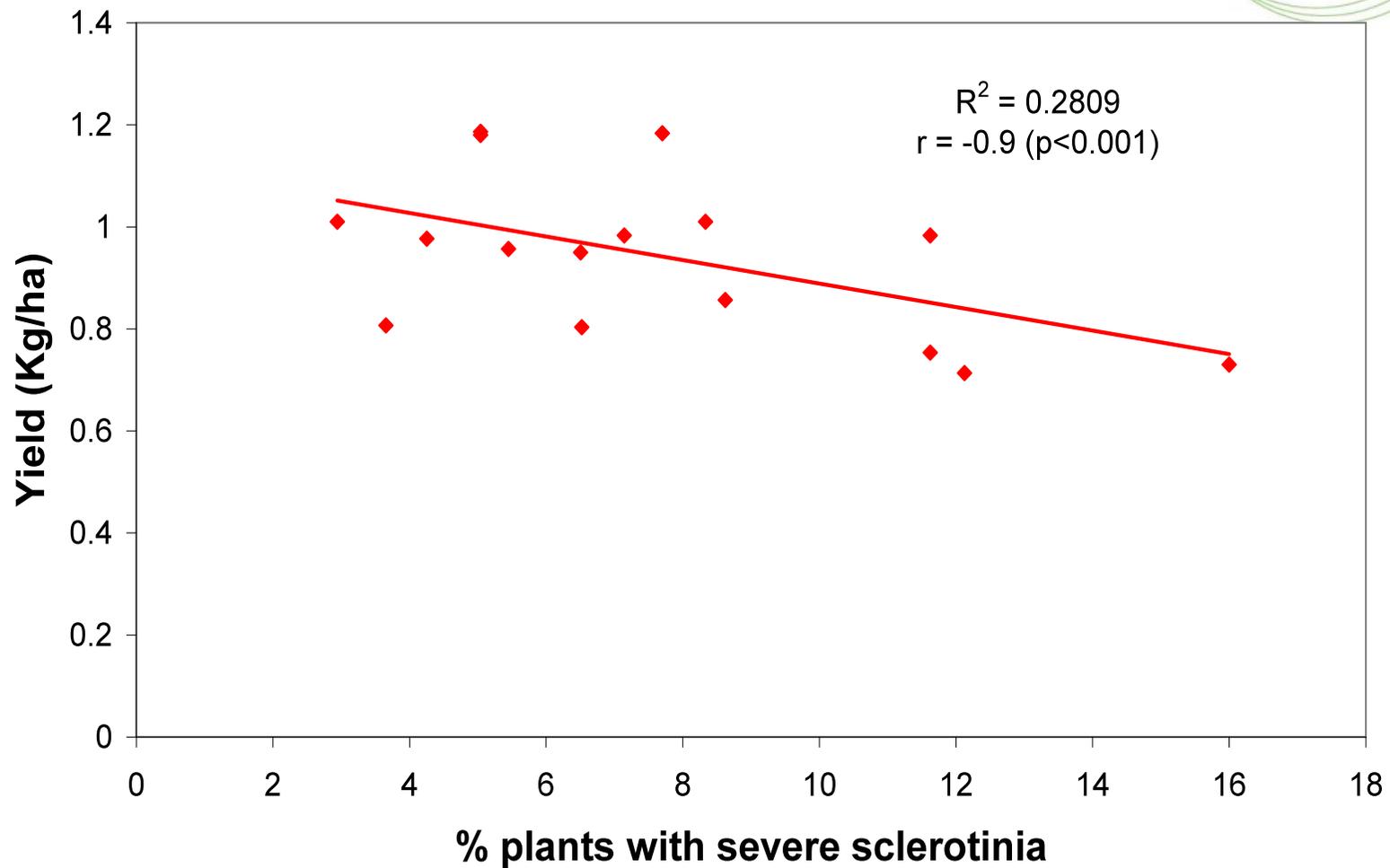
Sclerotinia incidence (2009 Oilseeds WA trial)

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Relationship between incidence of severe Sclerotinia and yield

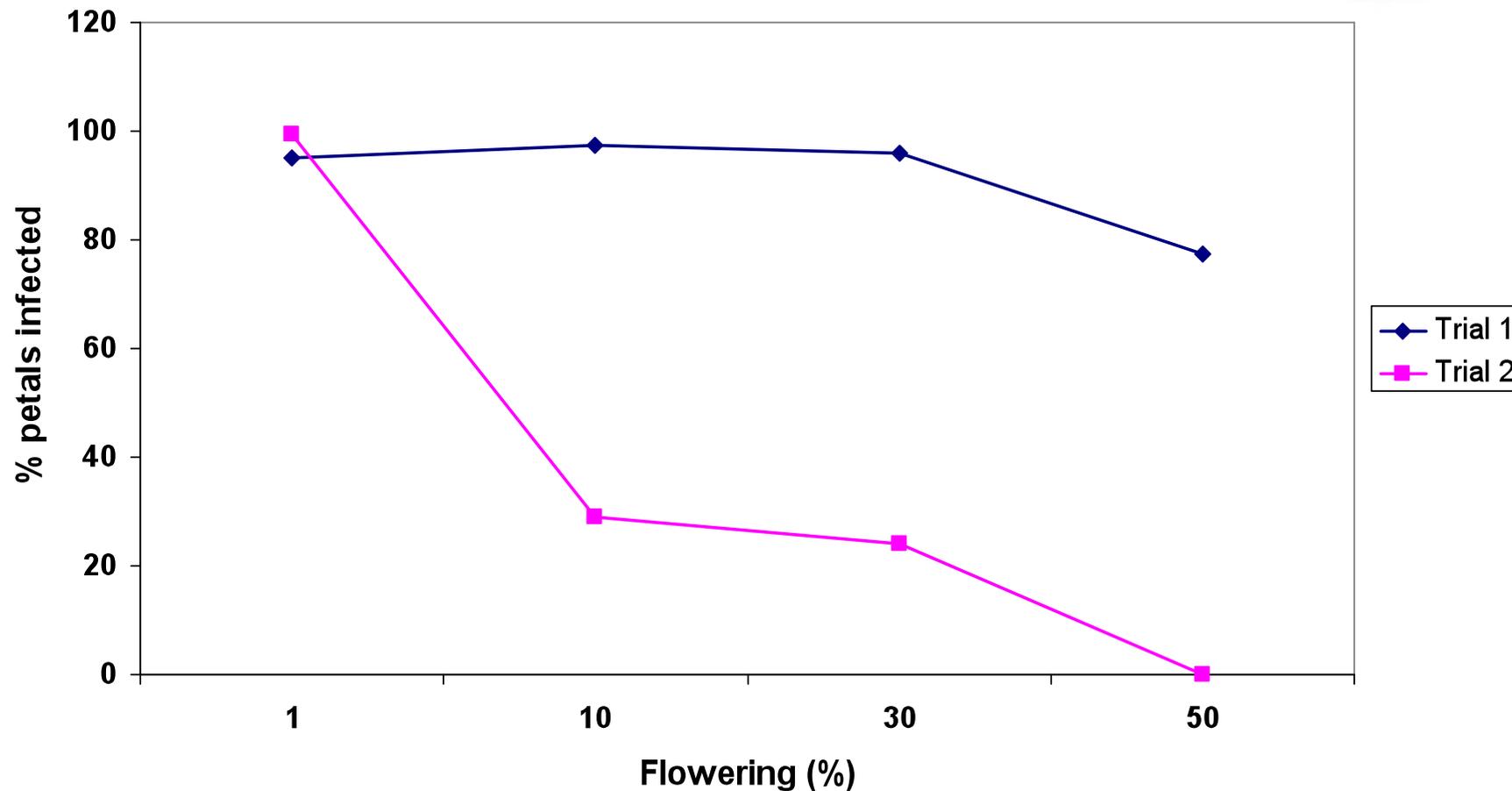
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Yield data courtesy of Peter Elliott-Lockhart, Elders Geraldton

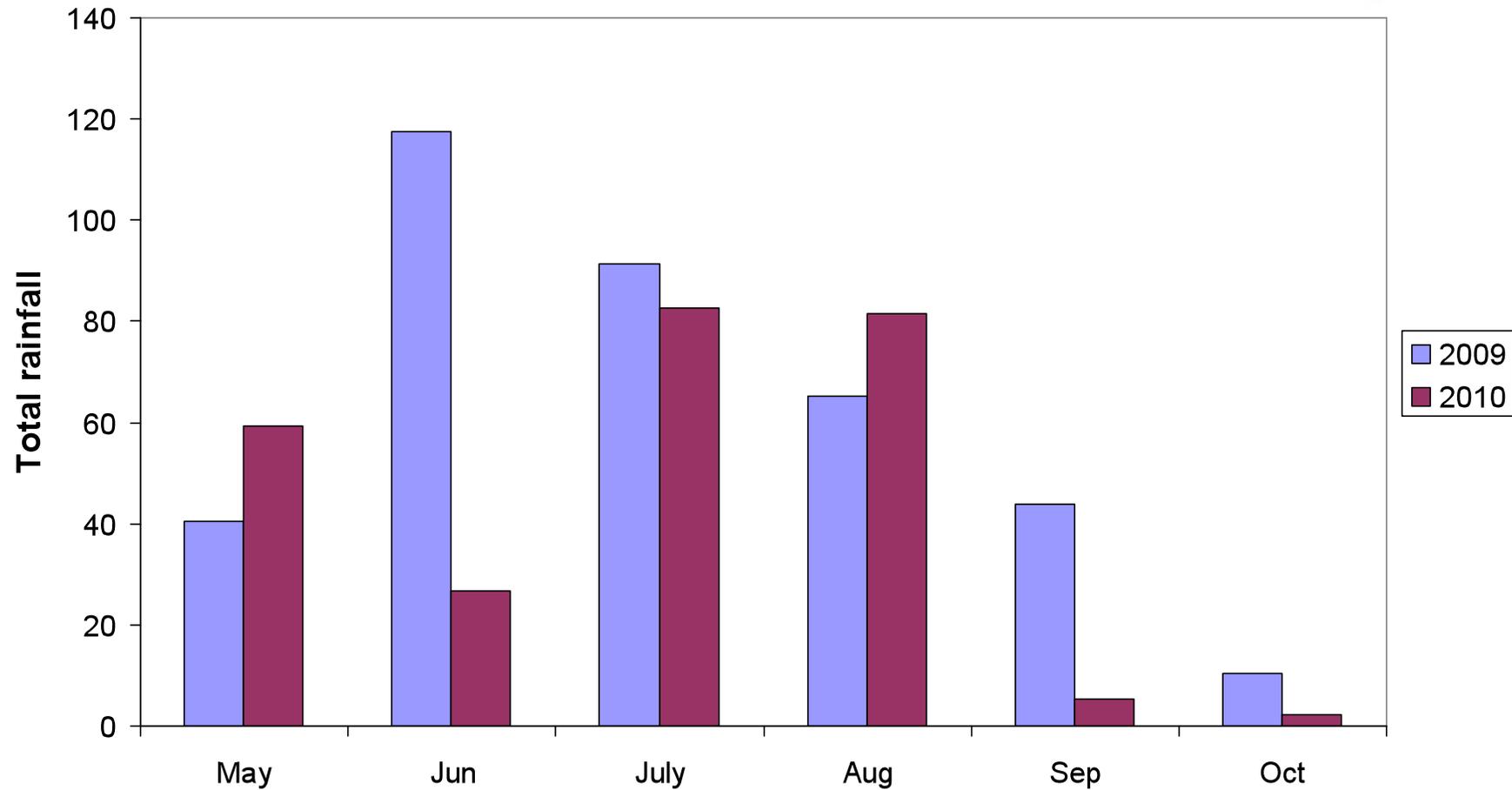
% petal infected with Sclerotinia 2010 trials

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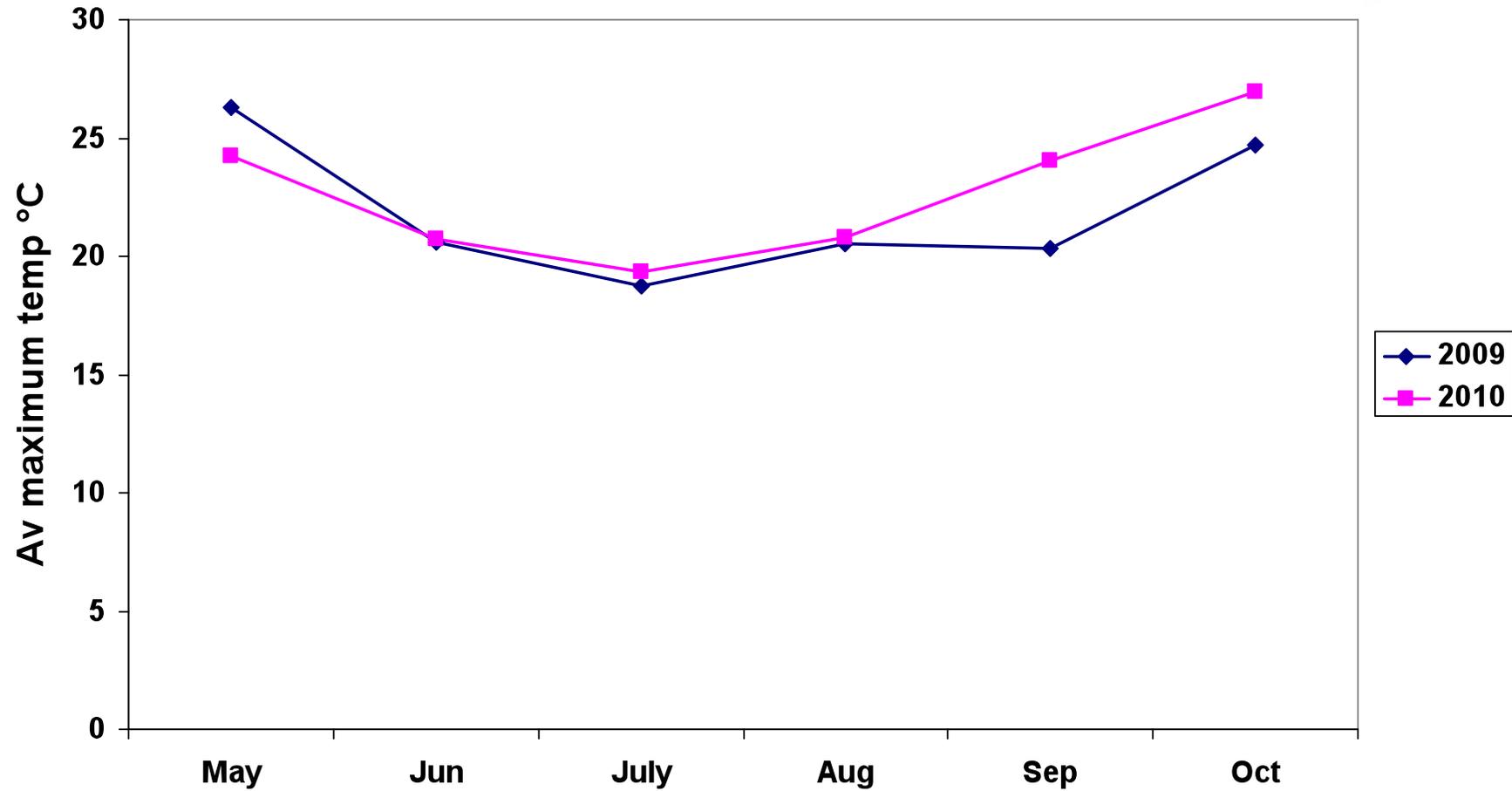
Rainfall at Walkaway (2009-2010)

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Average maximum temp at Walkaway (2009-2010)

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Management options for Sclerotinia

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- Long rotations (ideally non-host crops)
- Avoid sowing close to last year's canola crop/lupins/blue lupins
- Resistance to Sclerotinia in commercial varieties is not adequate
- Apply fungicides if sowing in high risk paddocks
 - iprodione
 - procymidone

Management options for blackleg

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- Assess your risk
- Sow resistant varieties
- Reduce residues
- Increase distance from previous years residues
- Crop rotation
- Fungicide where disease pressure high

Managing Blackleg Bulletin 4571

canola blackleg disease risk forecast

<http://www.agric.wa.gov.au>

Is there a risk of Sclerotinia by shortening rotations?

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- Yes

if

- Inoculum is present (previous susceptible crop)
- Environment is favourable
- Susceptible varieties ✓ (little or no choice)

Is there a risk of blackleg by shortening rotations?

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- Yes, immense risk!!!!
- Inoculum is always present
- Favourable environment in most seasons
- Synchronisation of spore release and seedling emergence
- MR or MR-MS varieties
- Even R varieties can be at risk as the pathogen has a propensity to change rapidly

Conclusions

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- Widespread occurrence of Sclerotinia stem rot and blackleg in the NAR and SAR respectively.
- Good disease management practices are crucial to ameliorate the impact of these two diseases in canola in 2011 and beyond.
- Increased incidence of club root in the NAR is a concern and need to maintain good hygiene practices.

Acknowledgements

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