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Incidence, severity and yield loss due to Sclerotinia stem rot

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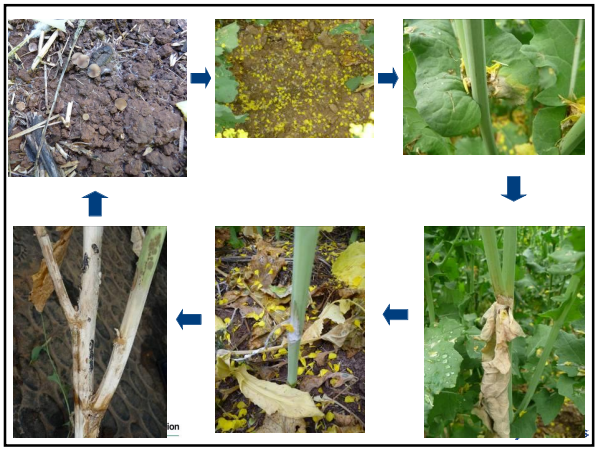
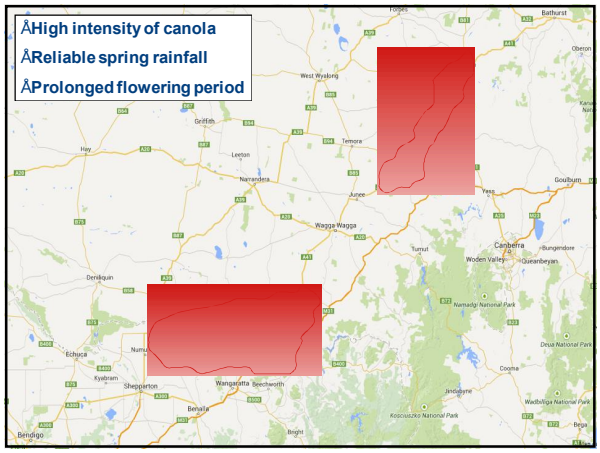
2015 Overview

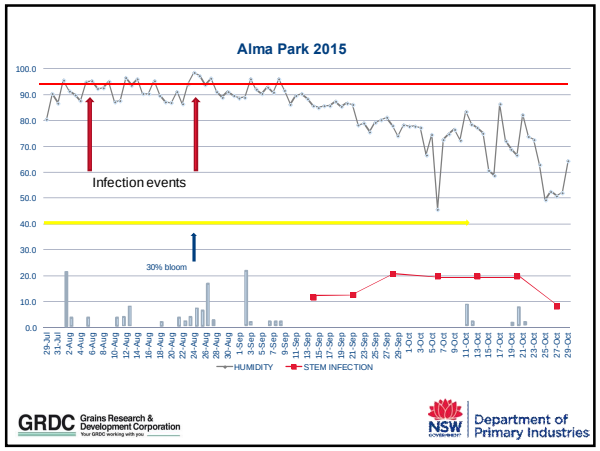
- Southern NSW
  - Very wet winter favourable for apothecia development
  - Dry spring decreased potential disease
  - Moderate level of disease in sclerotinia prone districts
- Victoria
  - Drier than average conditions prevented significant disease development
- South Australia
  - Severe outbreaks on Lower Eyre Peninsula
- Western Australia
  - The disease levels were very low in the northern region and moderate in the southern region.
  - Overall State-wide levels were 18%, up by 3% on 2014.





NSW monitoring - 2015

- Improve our understanding of the relationships between humidity/temperature and stem rot development
- Commercial crops monitored at Howlong, Alma Park, Morven and Cootamundra
- Data loggers used to measure humidity and temperature every 30 minutes (early July – end Oct)



NSW monitoring - 2015

Date of first observed stem lesion and highest level of stem infection

Site	Date of 1st stem lesion - 2015	Highest level of stem infection
Howlong	13/10	13.6%
Alma Park 1	14/09	21%
Alma Park 2	21/09	7%
Morven	14/09	3.6%
Cootamundra 1	07/10	10%
Cootamundra 2	14/10	3%

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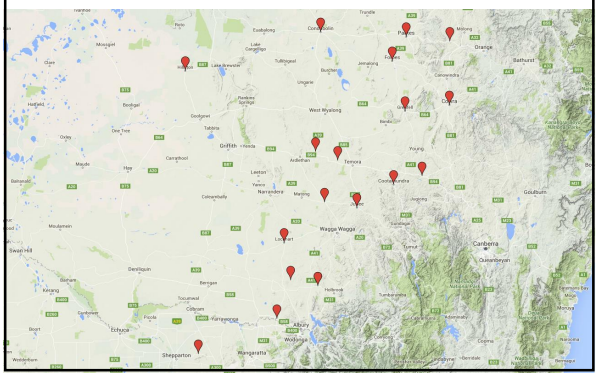
Petal testing sites



% Petal Infestation - Central West Slopes and Plains

Date	Week	Condobolin - DPI	Condobolin	Forbes	Parkes 1	Parkes 2	Manildra	Grenfell	Cowra
27/07 - 02/08	1								
03/08 - 09/08	2	4							
10/08 - 16/08	3	4			90				
17/08 - 23/08	4	6			82	58	50		100
24/08 - 30/08	5	15				30	68		100
31/08 - 06/09	6	20	20	22	48		62	92	96
07/09 - 13/09	7		14	46		18	64	94	
14/09 - 20/09	8	4	8	62	58		30	100	76
21/09 - 27/09	9	10	22	18	10		20	94	94
28/09 - 04/10	10		26	4	8	6		4	
	Total rainfall during flowering	54	54	57	83	83	51	219	127
	Total annual rainfall	454	454	343	508	508	531	664	645

% Range	Level of petal infestation
1 to 20	very low
21 to 40	low
41 to 60	medium
61 to 80	high
81 to 100	very high

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% Petal Infestation - South West Slopes

Date	Week	Mirrool	Pucawan	Coolamon	Junee	Cootamundra 1	Cootamundra 2	Harden
27/07 - 02/08	1							
03/08 - 09/08	2					100	100	
10/08 - 16/08	3			36		100	100	
17/08 - 23/08	4			60		100	100	
24/08 - 30/08	5		62	40		94	96	46
31/08 - 06/09	6	46	94	54	96	100	100	80
07/09 - 13/09	7	76	98		88	90	100	36
14/09 - 20/09	8	50	82	68	58	100	100	48
21/09 - 27/09	9	38	96	94				58
28/09 - 04/10	10	48		42	78	100	100	78
05/10 - 11/10	11				12	30	18	10
12/10 - 18/10	12						8	
	Total rainfall during flowering	90	90	131	92.4	112	112	97
	Total annual rainfall	480	480	598	540	584	584	580

% Range	Level of petal infestation
1 to 20	very low
21 to 40	low
41 to 60	medium
61 to 80	high
81 to 100	very high

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% Petal Infestation - Riverina

Date	Week	Lockhart	Alma Park 1	Alma Park 2	Howlong	Morven
27/07 - 02/08	1		100			100
03/08 - 09/08	2		100	94		100
10/08 - 16/08	3		100	98		100
17/08 - 23/08	4	100	100	100		100
24/08 - 30/08	5	100	100	100	100	90
31/08 - 06/09	6	96	100	100	100	100
07/09 - 13/09	7	98	98	100	100	100
14/09 - 20/09	8	100	100	100	100	100
21/09 - 27/09	9	100	100	100	96	98
28/09 - 04/10	10	94	96	100	100	100
05/10 - 11/10	11	18	22.5	32.5	64	27.5
	Total rainfall during flowering	99	111	111	107	131
	Total annual rainfall	525	564	564	605	586

% Range	Level of petal infestation
1 to 20	very low
21 to 40	low
41 to 60	medium
61 to 80	high
81 to 100	very high

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Predicting Yield Loss

- Assessing level and type of infection in high disease risk districts
- Yield loss assessments (main stem vs. branch)
- Currently use Canadian model
  - Yield loss = ½ % plants infected
  - (e.g. 5% yield loss = 10% plant infection)
- Kirkegarrd et al. southern NSW
  - 1: 1 ratio (yield loss : plant infection)

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Site	Infection type	% Yield loss per plant		
		2014	2015	2016
Howlong	None	0	0	0
Howlong	Main stem	72	82	36
Howlong	Branch	19	20	6
Morven	None	0	0	0
Morven	Main stem	63	54	94
Morven	Branch	18	9	23

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Sclerotinia in South Australia

- Small isolated areas of severe infection e.g. Mt Hope
- What advice for Eyre Peninsula (growers have already decided that Diamond is more susceptible)?

% Plants infected at Mt Hope

Variety	% plants with stem lesion	% plants with branch lesion
GROUP A	15	2
GROUP B	25	15
GROUP C	25	0
Group D	22	2
GROUP E	13	2
GROUP F	50	5
GROUP S	8	0
Diamond paddock	40	0
Diamond plot	35	10

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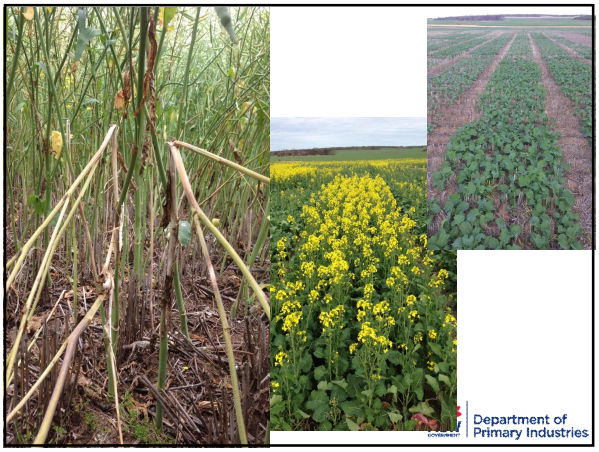

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WA Canola Sclerotinia activities in 2015

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Sclerotinia levels

- Sclerotinia levels were monitored in about 36 canola crops in 2015. The disease levels were very low in the northern region and moderate in the southern region.
- Overall State-wide levels were 18%, up by 3% on 2014.
- Some individual crops suffered up to 20% yield losses.

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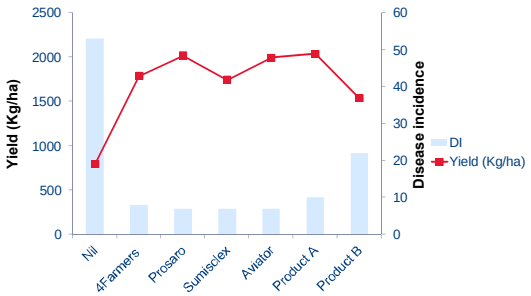
Efficacy of foliar fungicides



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Lsd DI = 7, Yield = 448

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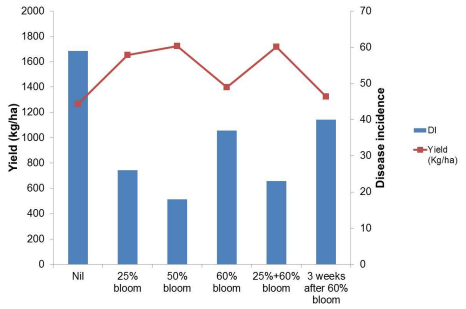
Timing of fungicide application



LSD DI = 10, Yield = 199

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Yield loss from Sclerotinia

- Two sites in the southern region
- Healthy vs dead = 74-86%
- Healthy vs main stem infection = 50-67%
- Healthy vs branch infection = 5-53%

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