

UCI Blackleg Ratings

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Phenotyping all 100 commercial cultivars for UCI – Glasshouse

- Assess same plants for both crown canker and UCI
 - Canker
 - Inoculate cotyledons mixture of 8 isolates (have all Avr genes).
 - Score crown canker at maturity

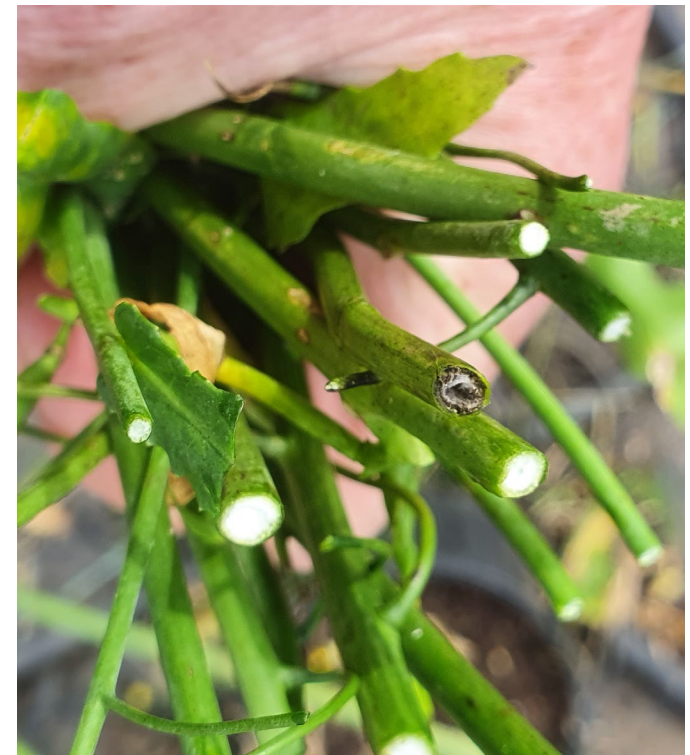


-
- UCI
 - Aim for plants to be at 30% bloom
 - Wound junction between petiole and stem with a scalpel
 - pipette mixture of 8 isolates (have all Avr genes) into wound
 - At maturity measure external lesion length.

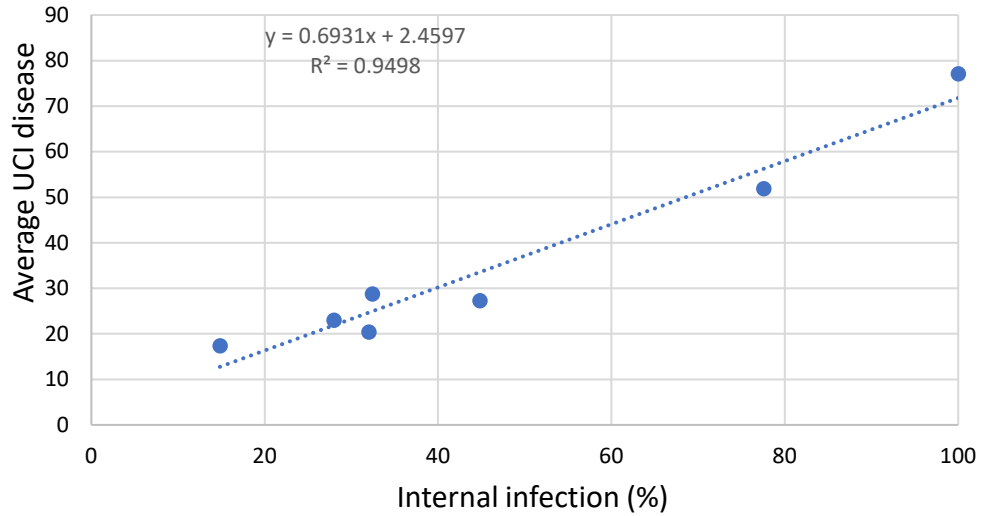
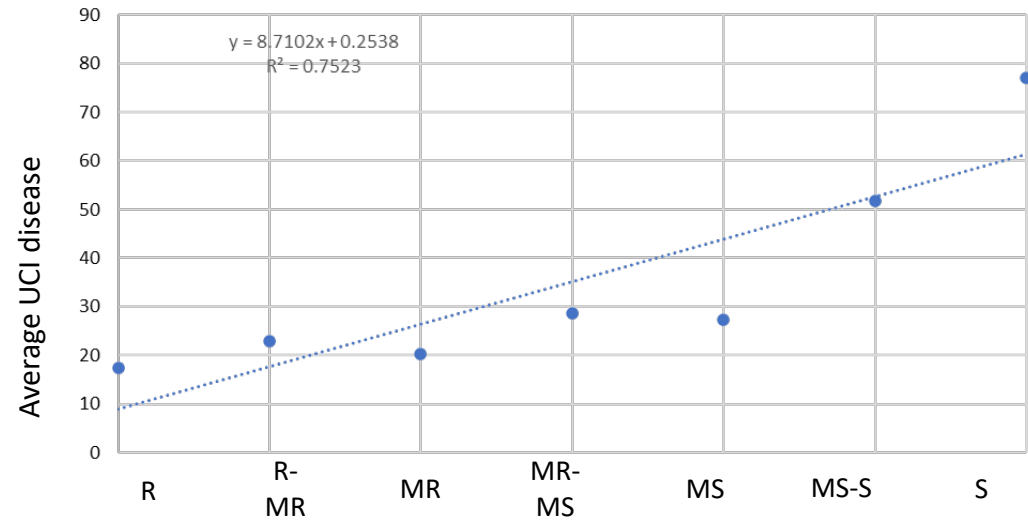
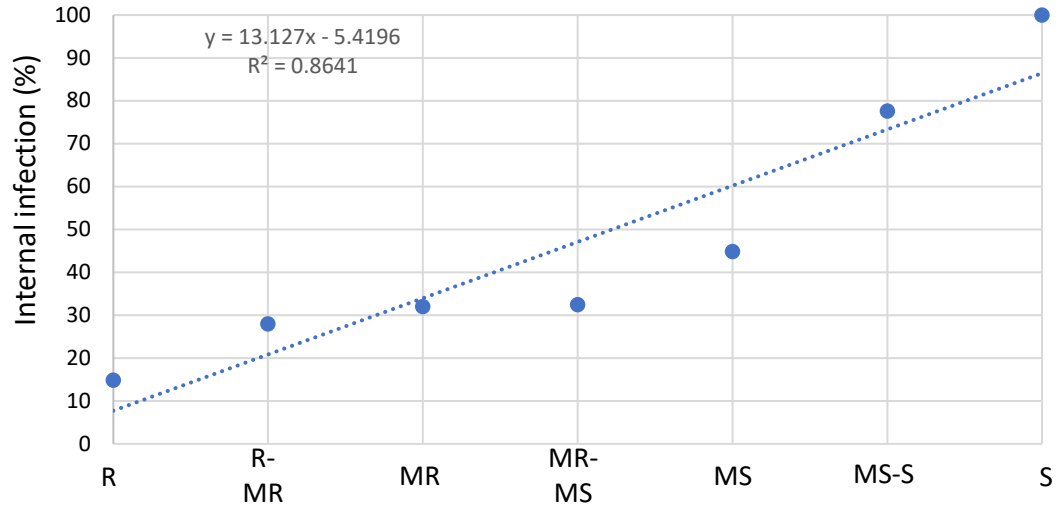


Phenotyping all 100 commercial cultivars for UCI – Field

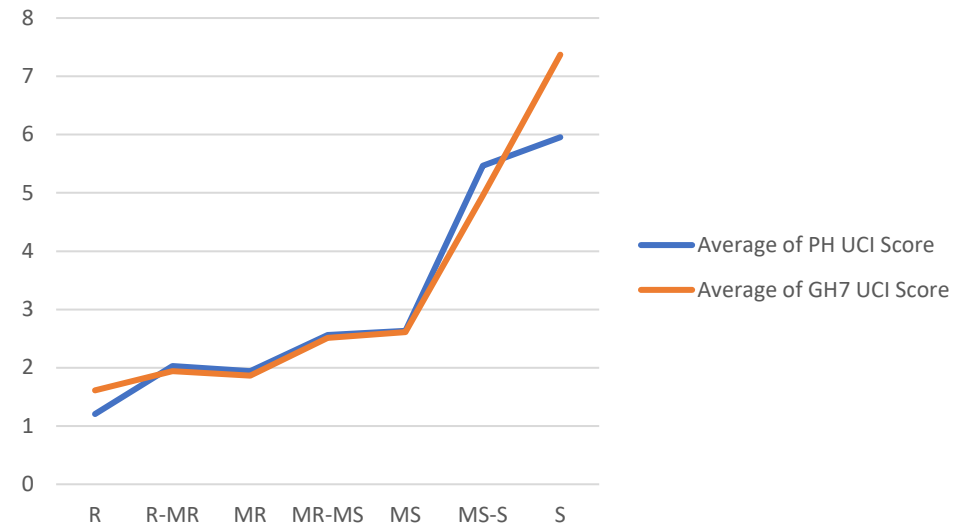
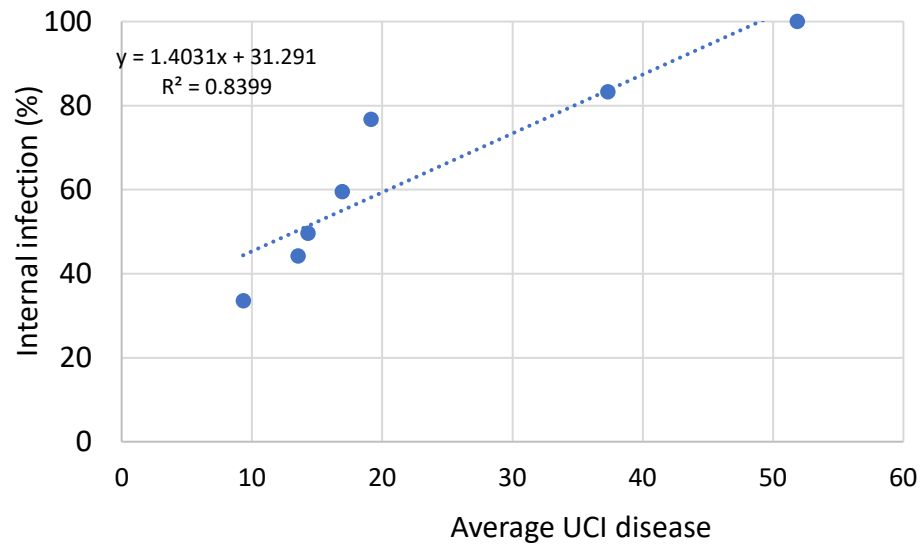
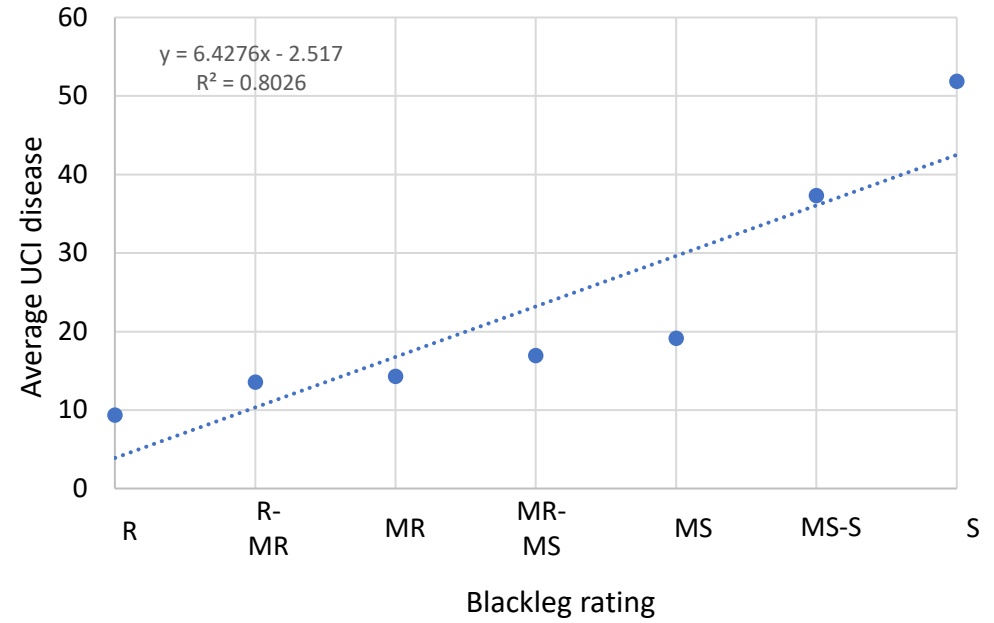
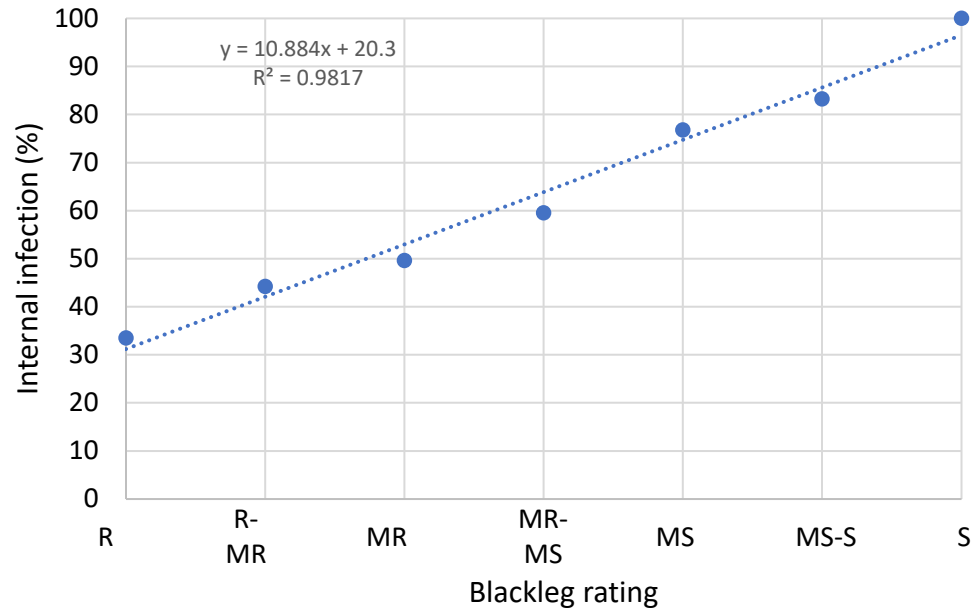
- Assess different plants for both crown canker and UCI
- Use a bird cage, spread different cultivars of stubble around the bird cage.
 - Canker
 - Sow plants into pots in early June
 - Score crown canker at maturity
 - UCI
 - Sow plants in early April
 - Record date of first flower for each pot
 - At maturity measure
 - Stem – total external lesion length
 - Branch- % mid branch with blackened pith
 - % Upper branch with blackened pith
 - Season not conducive to darkened branches (planed score)



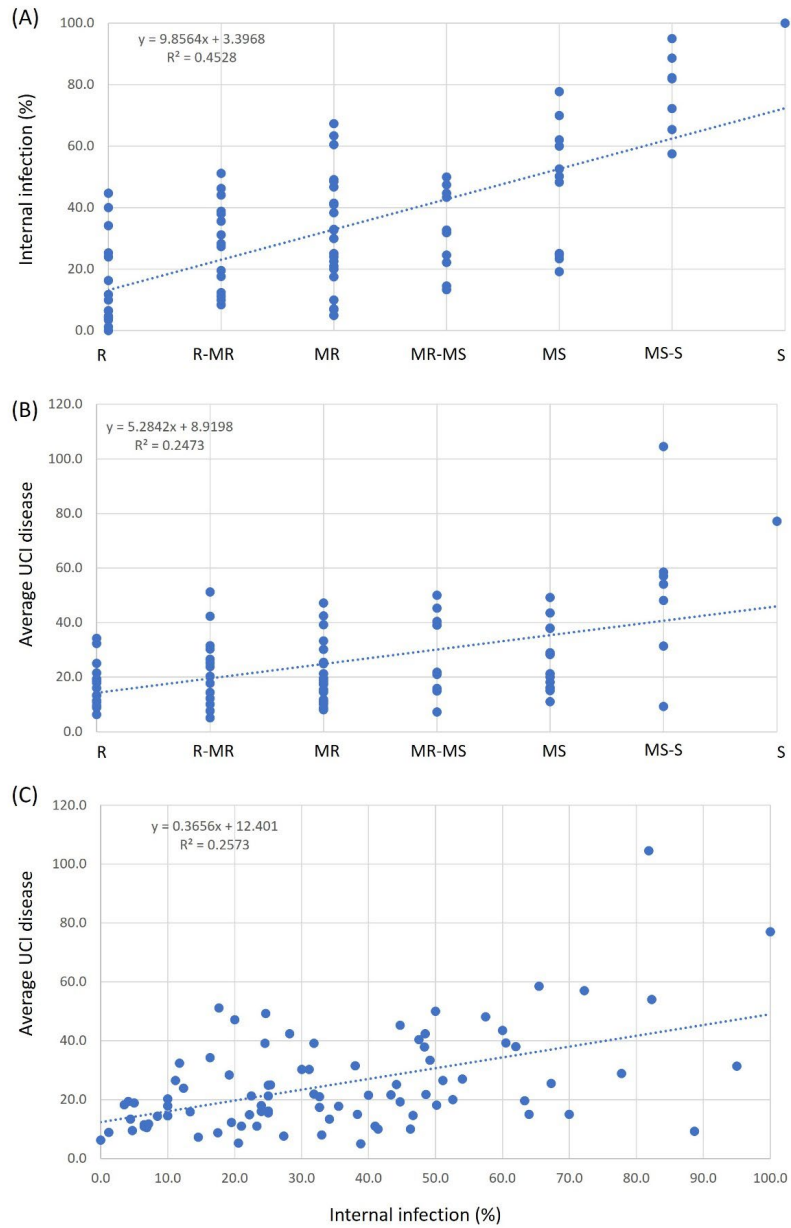
Glasshouse Crown -



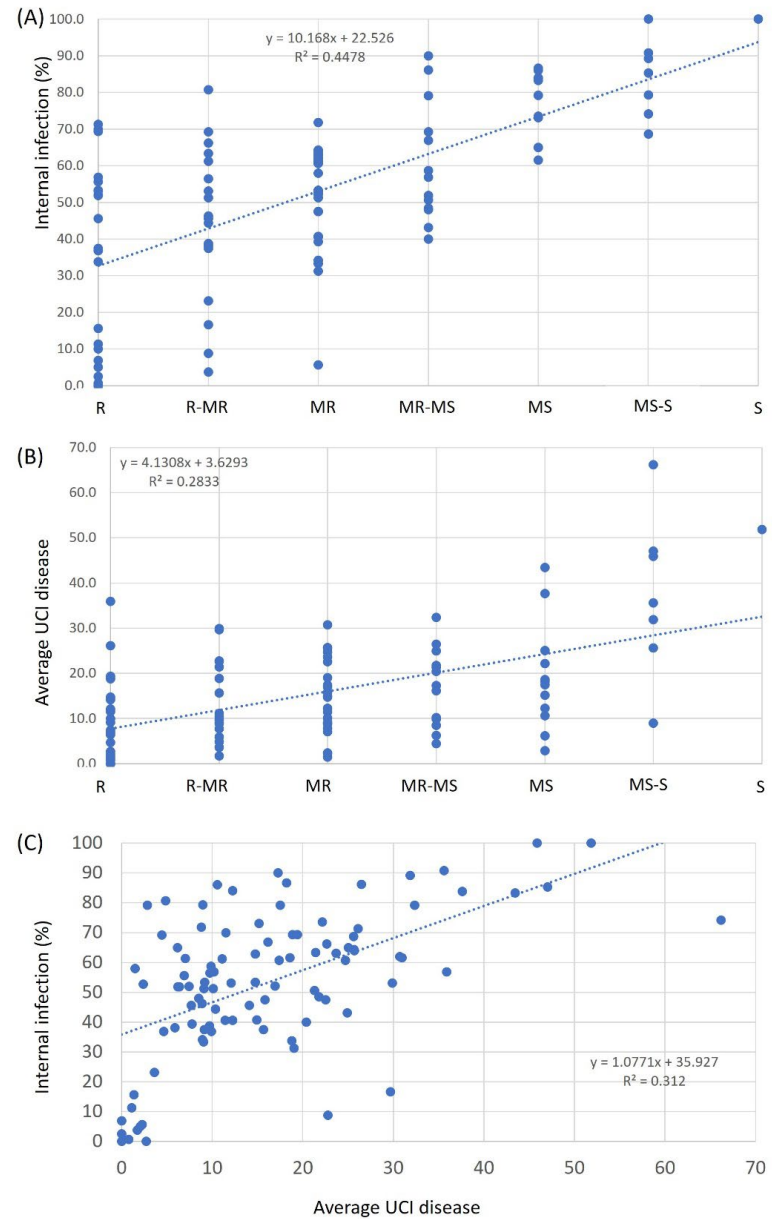
Field



Glasshouse individual 100 lines

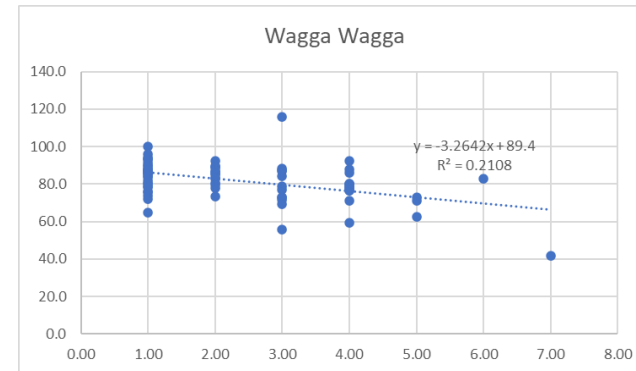
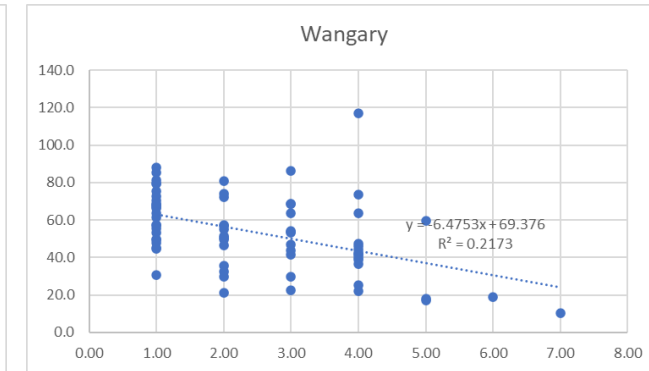
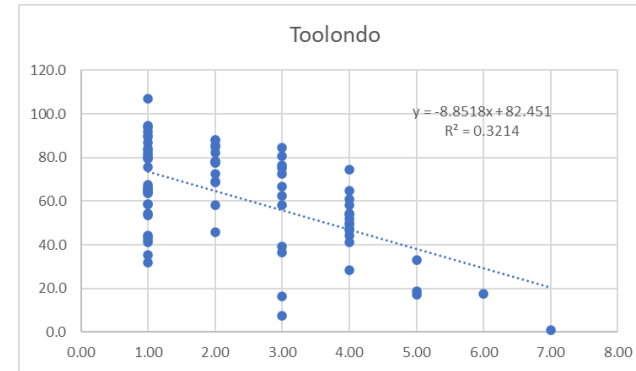


Field individual 100 lines

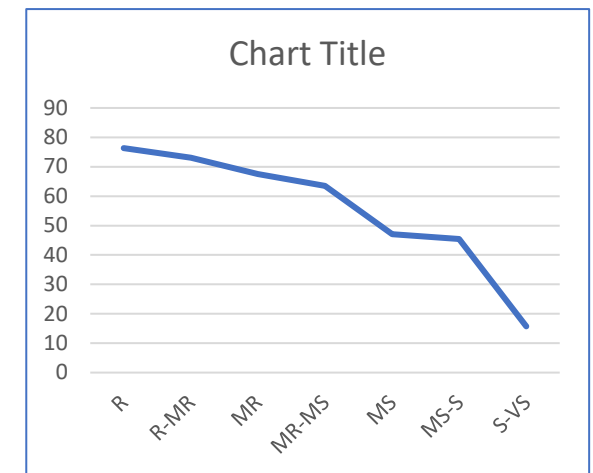
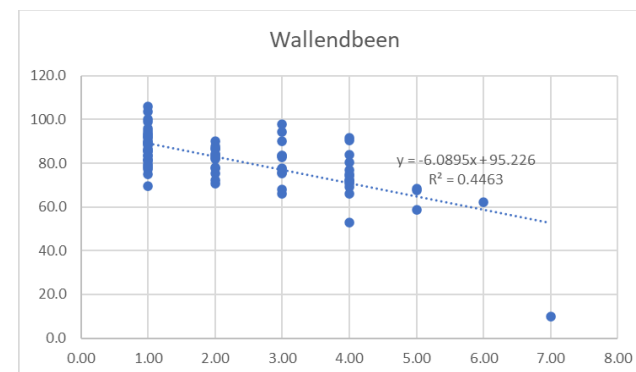


Blackleg rating by crown canker in the field

Average of CSII	Column Labels					
Row Labels	MS-S	MS	MR-MS	MR	R-MR	R
NSW						
Beckom	31	39	38	4	6	2
Condobolin						
Cootamundra	28	34	31	2	5	6
Cudal	61	16	41	5	13	10
Gerogery	21	24	26	5	5	4
Grenfell						
Lockhart						
Parkes						
Wagga Wagga	26	37	66	6	12	14
Wellington						
SA						
Arthurton	18	4	17	6	1	1
Cummins Landmark	52	39	68	12	12	10
Keith	39	21	36	8	5	7
Riverton	27	16	26	6	11	8
Spalding	53	57	40	6	9	8
Wangary Landmark	13	17	9	2	5	1
Wasleys	93	92	93	78	66	44
Yeelanna	33	21	42	7	6	4
Vic						
Charlton	60	57	63	13	19	16
Diggora	44	39	44	8	11	13
Hamilton	8	16	20	6	4	13
Horsham	23	14	14	5	7	6
Kaniva	40	8	43	8	8	6
Lake Bolac	14	18	15	4	5	8
Wunghnu	54	47	63	12	18	8
Yarrawonga	35	33	38	5	11	8
WA						
Bolgart	19	11	9	7	8	2
Gibson						
Kendenup	9	4	3	0	3	2
Kojonup	32	12	23	5	17	14
Munglinup	56	38	50	13	20	17
Stirlings South	29	13	13	9	18	22
Wagin	40	31	26	11	15	10
Williams	24	21	21	11	14	10



Field (pot) crown canker
 R^2 0.4478



Does UCI resistance works in the field?

Nick Perndt, Kurt Lindbeck, Andrew Ware, Andrew Wherrett,
Andrea Hills, Steve Marcroft

6 sites over 2021 & 2022 (10 sites in total)

3 cultivars - 2022 Screening results

Susceptible UCI – 93/100

Moderately susceptible -79/100

Moderately resistant – 47/100

% Additional yield with fungicide 6 sites over 2021 & 2022

Resistance (birdcage ranking)	Canker control	UCI Only	Canker + UCI
Suscepible	4.7	9.5	14.2
Moderately susceptible	4.4	6.1	10.5
Moderately resistant	2.6	3.3	5.9

Does UCI resistance works in the field?

2022 field screen
(bird cage)

Low UCI – 93/100

Mid UCI- 47/100

High – 79/100

Site	Date 1st Flower	Canker control	Canker + UCI	UCI only
Lake Bolac				
2021				
Susceptible	12-Aug	13	32	19
Moderately susceptible	12-Aug	11	18	7
Moderately resistant	7-Aug	7	14	7
2022				
Susceptible	2-Aug	5	22	17
Moderately susceptible	9-Aug	7	19	12
Moderately resistant	7-Aug	-7	6	13
Kaniva				
2021				
Susceptible	22-Aug	-3	5	8
Moderately susceptible	22-Aug	5	1	-4
Moderately resistant	20-Aug	0	9	9
2022				
Susceptible	18-Aug	-7	16	23
Moderately susceptible	13-Aug	0	20	20
Moderately resistant	15-Aug	-3	4	7
Horsham				
2021				
Susceptible	24-Aug	-3	-5	-2
Moderately susceptible	22-Aug	8	6	-2
Moderately resistant	24-Aug	-3	4	7

Site	Date to 1st Flower	Canker control	Canker + UCI	UCI Only
Cummins				
2021				
Susceptible	6-Aug	3	10	7
Moderately susceptible	8-Aug	-3	8	11
Moderately resistant	10-Aug	6	5	-1
2022				
Susceptible	10-Aug	10	21	11
Moderately susceptible	12-Aug	10	11	1
Moderately resistant	12-Aug	10	4	-6
Kendenup				
2021				
Susceptible	12-Jul	12	12	0
Moderately susceptible	22-Jul	-3	-1	2
Moderately resistant	18-Jul	6	-6	-12
Wagga				
2021				
Susceptible	3-Aug	7	9	2
Moderately susceptible	3-Aug	12	12	0
Moderately resistant	3-Aug	6	4	-2
2022				
Susceptible	1-Aug	10	20	10
Moderately susceptible	1-Aug	-3	11	14
Moderately resistant	1-Aug	4	15	11

Recommendation

- Option 1. Adopt the current blackleg ratings for UCI
- Option 2. Have three categories - S / MRMS / MR based on canker blackleg ratings.
- Future work to determine how to use the UCI rating

UCI Rating	Location	Date 1st Flower	Recommendation
MR	Horsham	1-Aug	Fungicide
MR	Horsham	18-Aug	No fungicide
MRMS	Horsham	18-Aug	Fungicide
MR	Lake Bolac	18-Aug	Fungicide
MR	Lake Bolac	1-Sep	No Fungicide