



Ulrike Gartner
Flash-talk Corvallis 12 March 2019

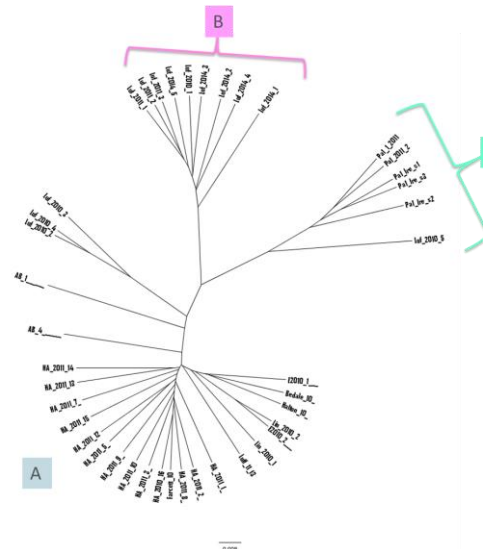


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Can mitochondrial markers that distinguish the different introductions be used as pathotype markers?

Samples	Population	Type A	Type B	Type C	No. cysts analysed
JHI collection	Lindley	25 (96%)	1 (4%)		26
	Luffness field 1	2 (6%)	33 (94%)		35
	Pa1	4 (19%)	2 (10%)	15 (71%)	21
Field	Luffness field 1	7 (39%)	9 (50%)	2 (11%)	18

“Pa2 end of Pa2/3”
 “Pa3 end of Pa2/3”
 “Pa1”





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Population ID	Potato Genotypes with Different Sources of Resistance				Mito-type	GBS Group
	Desirée	P55/7	VTN 62.33.3	Innovator		
Lindley 2010 11					A	A
Lindley 2010 3					A	A
Lindley JHI pool					A	
Luff 2011 3-8					A	A
Luff 2011 3-17(b)					A	A
Luff 2011 3-18(a)					A	A
Luff 2011 1-12					B	B
Luff 2014 1-4					B	B
Luff 2014 1-19					B	B
Luff 2014 1-30					B	B
Lufness JHI pool					B	B
Pa 1 2011 3					A	C
Pa 1 2011 12					A	C
Pa1 2011 pool					C	C
AB A8-2					A	
AB Pb-3					A	A
AB Pb-12					A	A
HA 2011 9					A	A
HA 2011 32					A	A
HA 2011 12					B	A
HA 2011 27					B	A
HA 2011 34					B	A
HA 2011 49					B	A

Level of Resistance

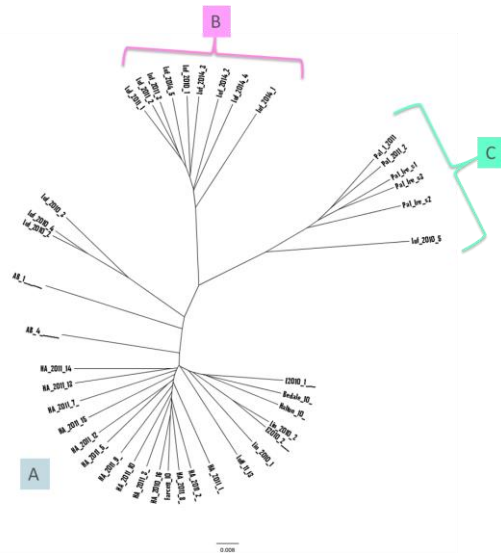


Future Work: Development of molecular pathotype markers for *G. pallida*



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Single cyst line/population	Pheno type	Mito type	GBS group
HA 12	PA3	B	A
HA27	PA3	B	A
HA34	PA3	B	A
PB-12	PA2	A	A
Luff3-18	PA2	A	A
Luff 3-8	PA2	A	A
Luff1-12	PA3	B	B
Luff1-4	PA3	B	B
Luff1-30	PA3	B	B
Pa1-12	PA1	A	C
Pa1 pool	PA1	C	C
Pa1 ire 1	PA1	n/a	C

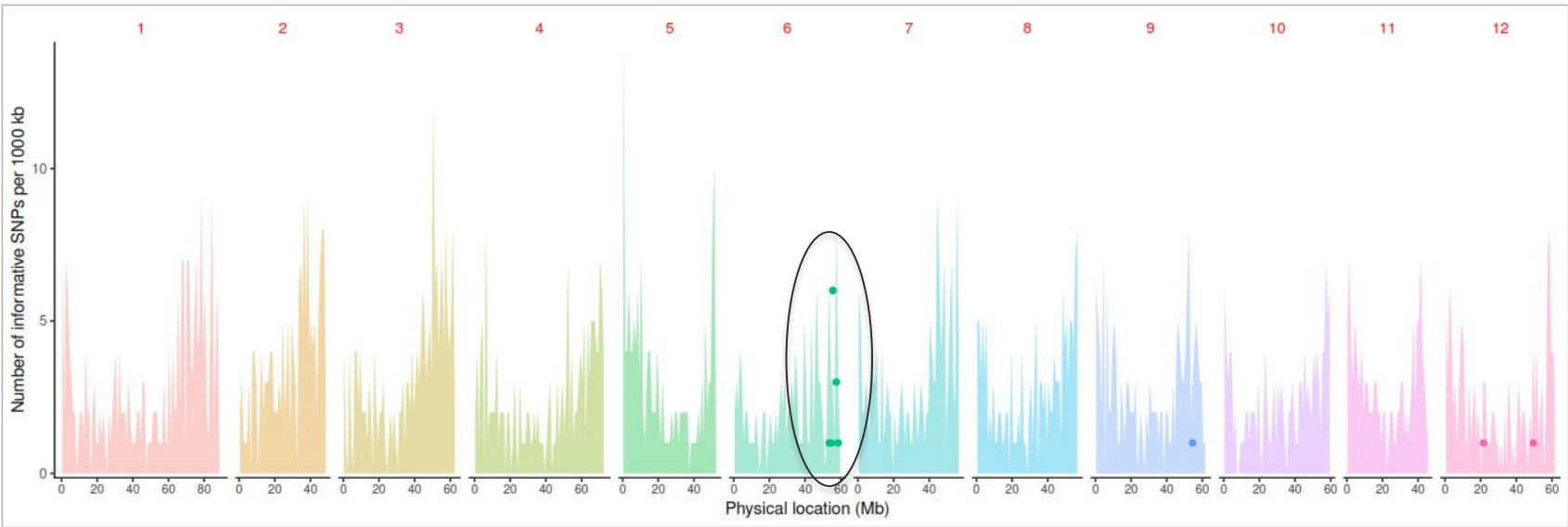


	Allele1/2	% allele 1 in populations		
		PA2	PA3	PA1
1	A/T	0.0	0.0	100.0
2	T/C	0.0	9.1	100.0
3	G/A	100.0	100.0	16.7
4	G/A	100.0	100.0	16.7
5	G/A	100.0	100.0	16.7
6	T/C	0.0	9.1	100.0
7	G/C	87.5	81.8	16.7
8	T/C	100.0	9.1	100.0
9	T/C	25.0	81.8	0.0
10	T/A	37.5	90.9	0.0
11	T/C	50.0	81.8	0.0
12	G/A	75.0	90.9	16.7



The diploid *S. spegazzinii*, acc. 7195, shows natural resistance to *G. pallida*.

Generic-mapping enrichment Sequencing (GenSeq)



Graphical Genotyping



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	SP	RP
K5	S	R
K6	S	R
K7	S	R
K8	S	R

K5 to K8 comprise 5.4 Mb

K5 to K7 comprise 3.4 Mb

	615	524	58	444	448	465	467	471	479	510	519	545	628	635	637	638	643	644	566
K5	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
K6	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
K7	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
K8	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S

	686	49	70	446	463	495	512	516	523	568	586	633	648	700	579	678	500
K5	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
K6	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
K7	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
K8	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R

S	susceptible
R	resistant
	homozygot
	heterozygot





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Thank you

