

# Tuber blight in relation to *P. infestans* genotypes 13\_A2 and 6\_A1

Ruairidh Bain, Claire Convery  
& Alison Lees

# Introduction

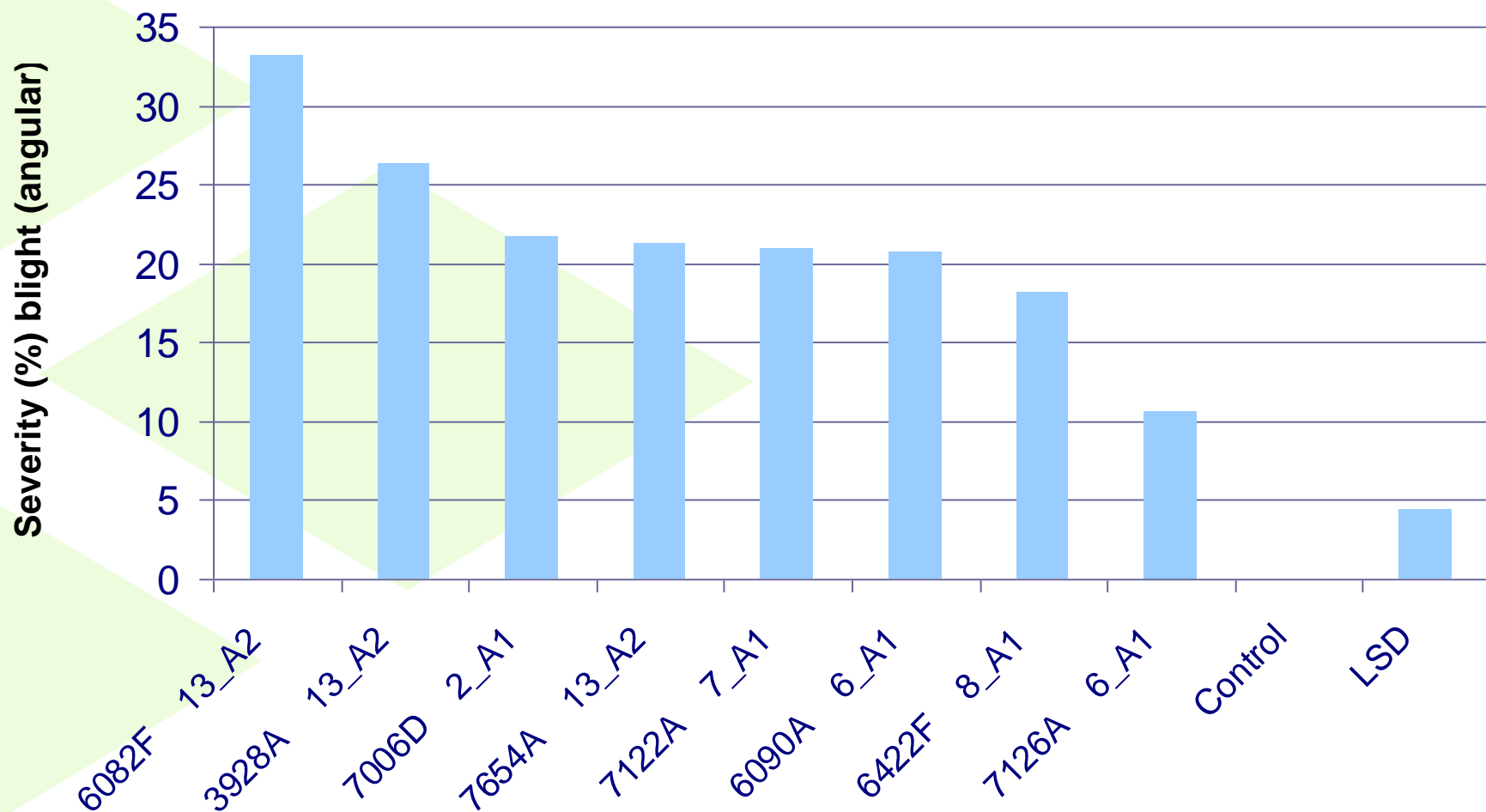
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- Tuber blight low in recent years
  - Commercial crops
  - Plots treated with mancozeb
- Coincides with the domination by 13\_A2 of the GB population
- Is this a coincidence or a causal relationship?
- If 13\_A2 causes less tuber blight, why is this?
  - Is 13\_A2 less aggressive on tubers?

# Point inoculation

# Saxon 2011

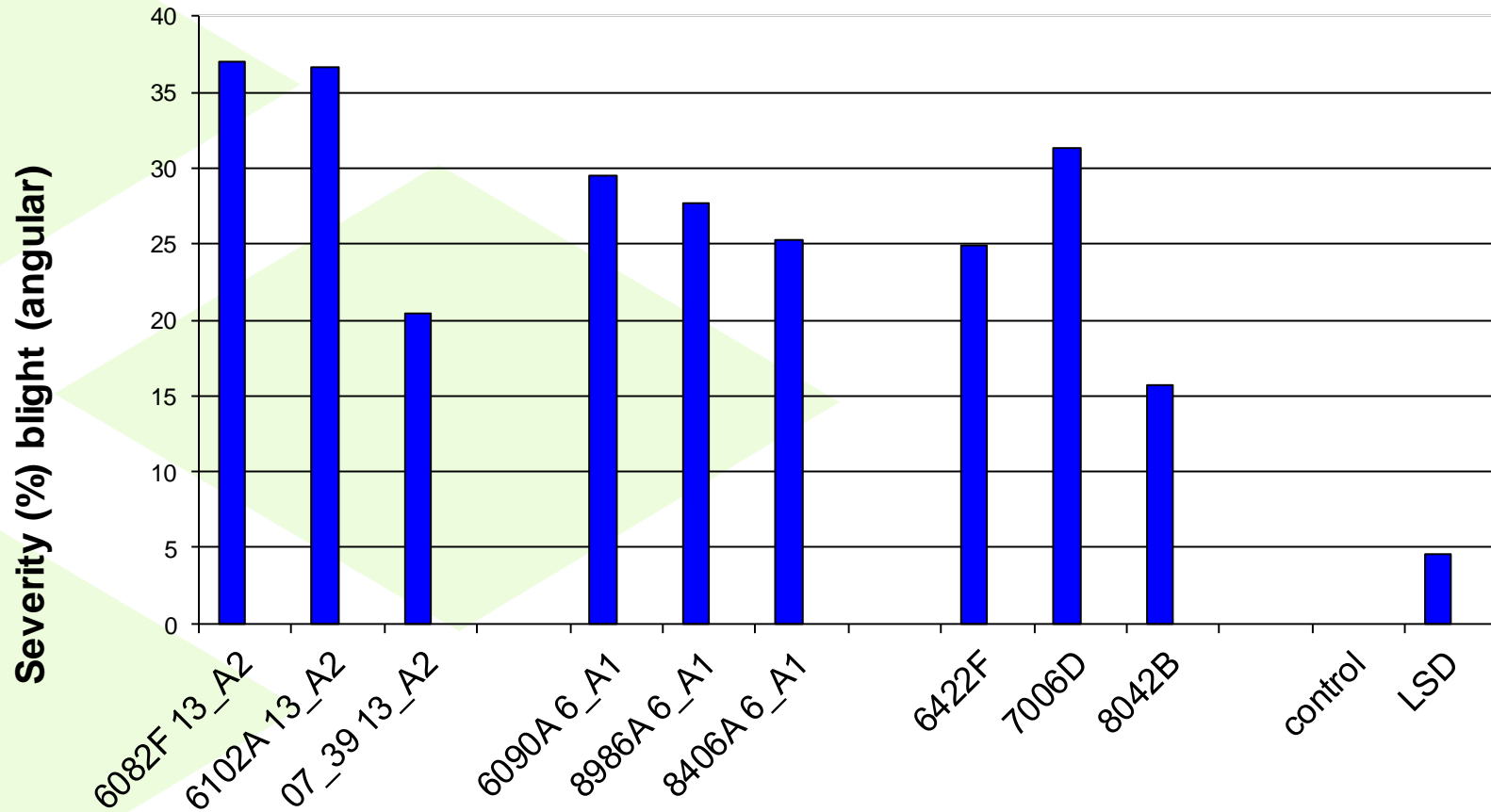


# Point inoculation Saxon 2011



	13_A2	6_A1	Old
	3928A	6090A	7006D
	6082F	7126A	7122A
	7654A		6422F
Blight severity (%)	26.9	15.7	20.3
	F pr.		
13_A2 vs. Old	<0.001		

# Point inoculation Saxon 2012



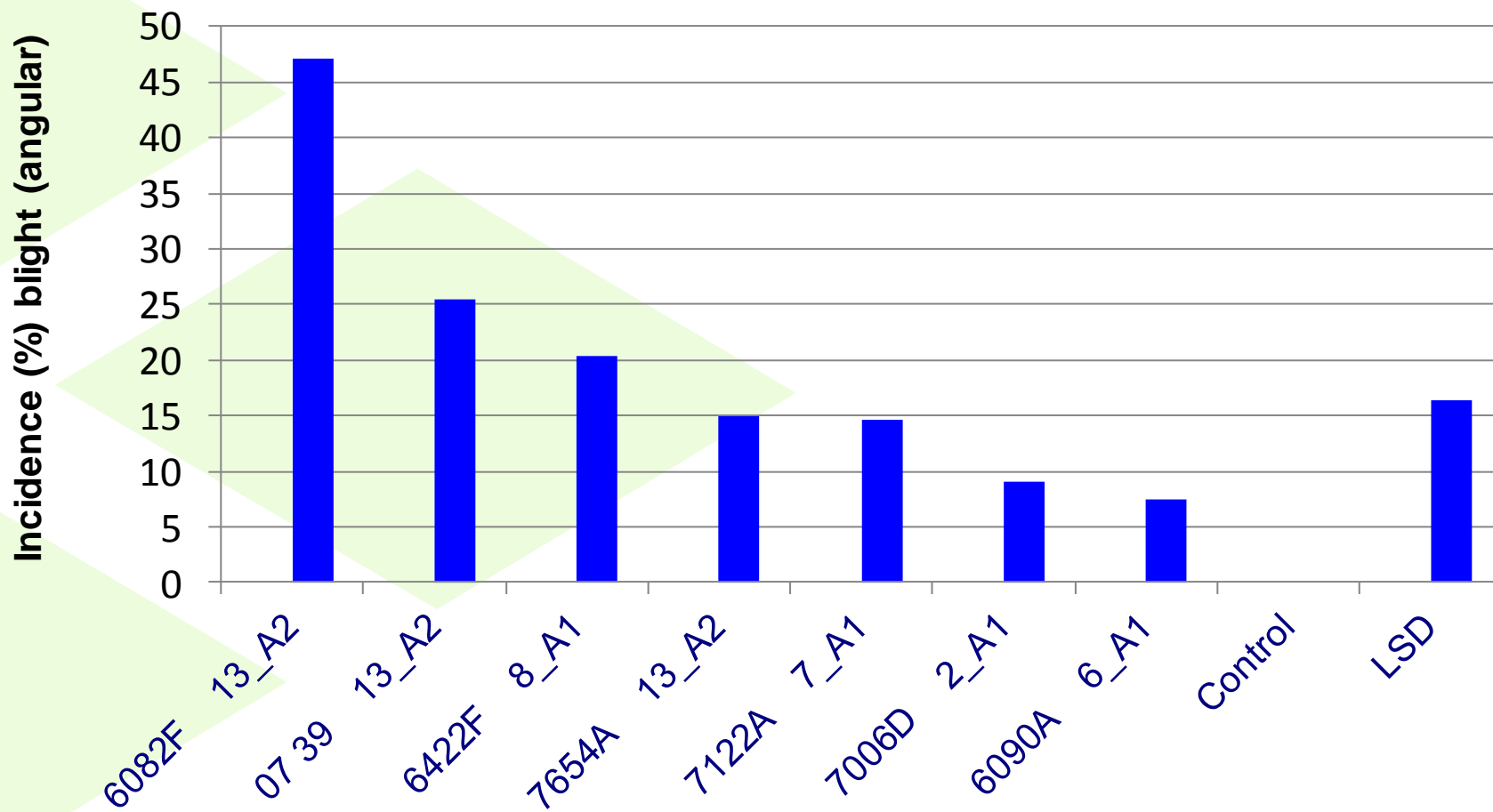
# Point inoculation Saxon 2012



	13_A2	6_A1	Old
	6082F	6090A	7006D
	07/39	8406A	8042B
	6102A	8986A	6422F
Blight severity (%)	31.4	27.5	24.0
	F pr. Blight		
13_A2 vs. 6_A1	0.004		
13_A2 vs. Old	<0.001		
6_A1 vs. Old	0.009		

# *In situ* inoculation

# Rocket 2011



# *In situ* inoculation

# Rocket 2011



	13_A2	Old
	6082F	7006D (2_A1)
	07/39	7122A (7_A1)
	7654A	6422F (8_A1)
Mean infection (%)	29.2	14.7
	F pr.	
13_A2 vs. Old	0.008	



# *In situ* inoculation

# M Piper 2012



	13_A2	Old
	7654A	7122A
	6102A	8042B
Mean infection (%)	34.60	25.49
	F pr.	
13_A2 vs. Old	0.002	

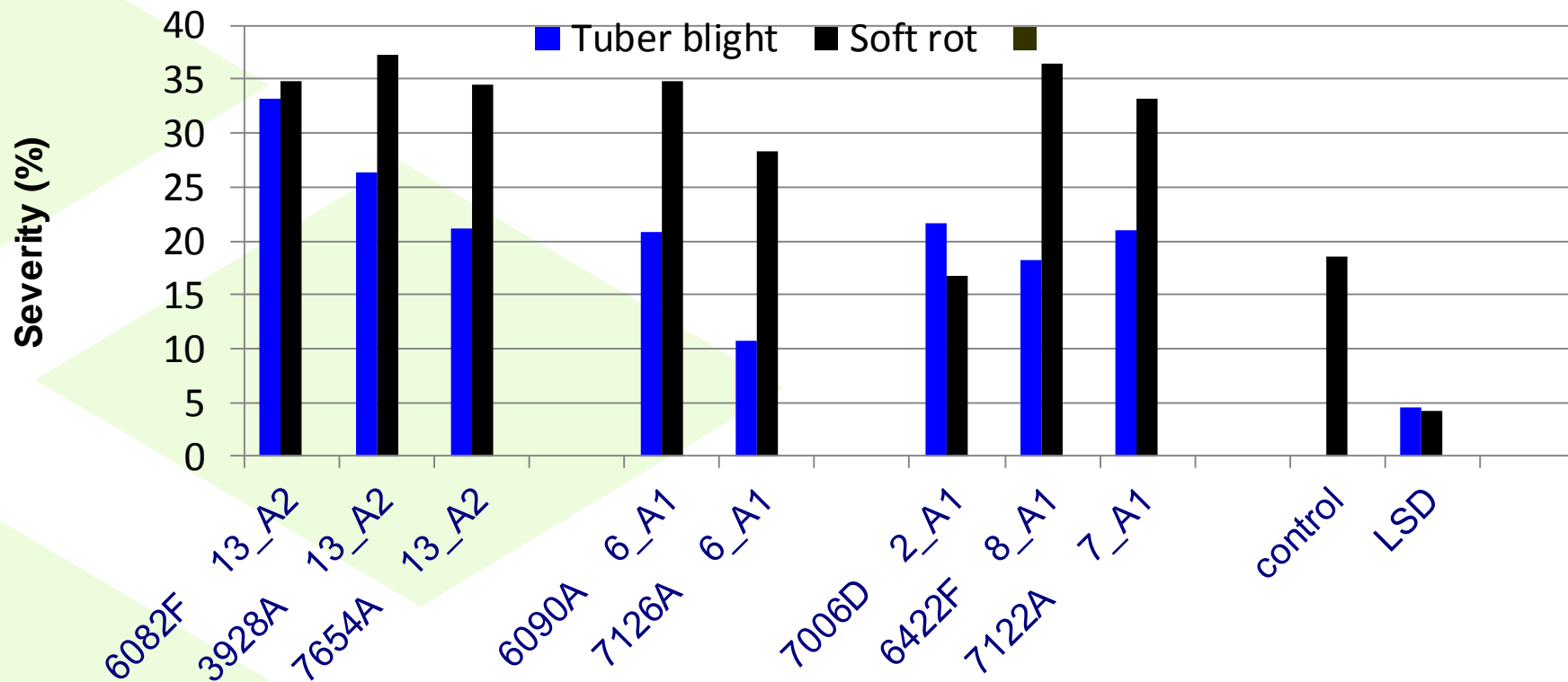
- If 13\_A2 causes less tuber blight, why is this?
  - Does 13\_A2 cause a higher incidence of tuber blight early in the growing season compared with older genotypes but due to faster tuber decay fewer blighted tubers are present at harvest?

# Severity of blight and % tuber decay after burial 2011



	13_A2	6_A1	Old
	3928A	6090A	7006D
	6082F	7126A	7122A
	7654A		6422F
Blight severity (%)	26.9	15.7	20.3
Soft rot severity (%)	35.5	31.6	28.8
	F pr. Blight	F pr. Soft rot	
13_A2 vs. Old	<0.001	<0.001	

# Severity of blight and % tuber decay after burial 2011

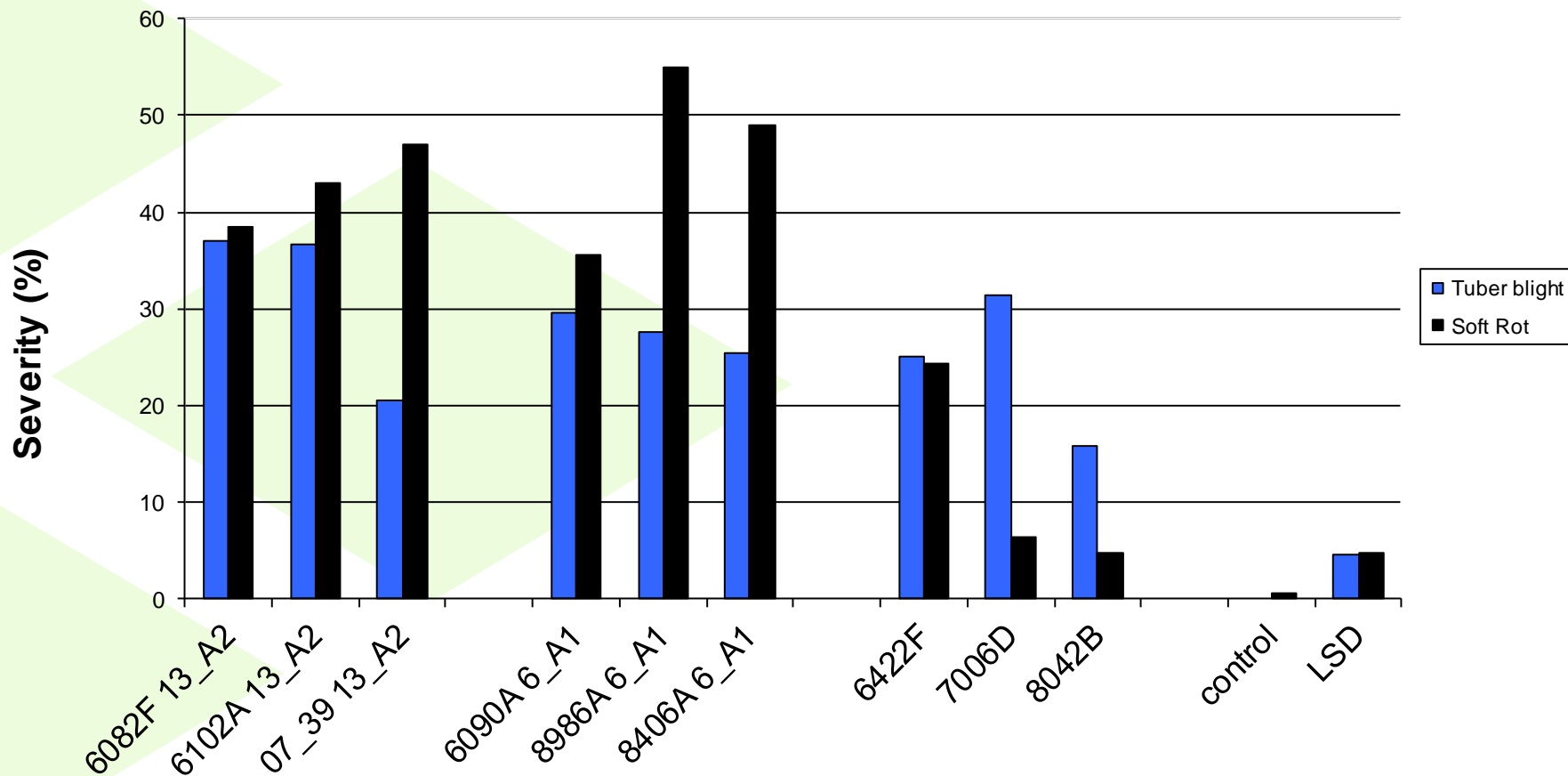


# Severity of blight and % tuber decay after burial 2012



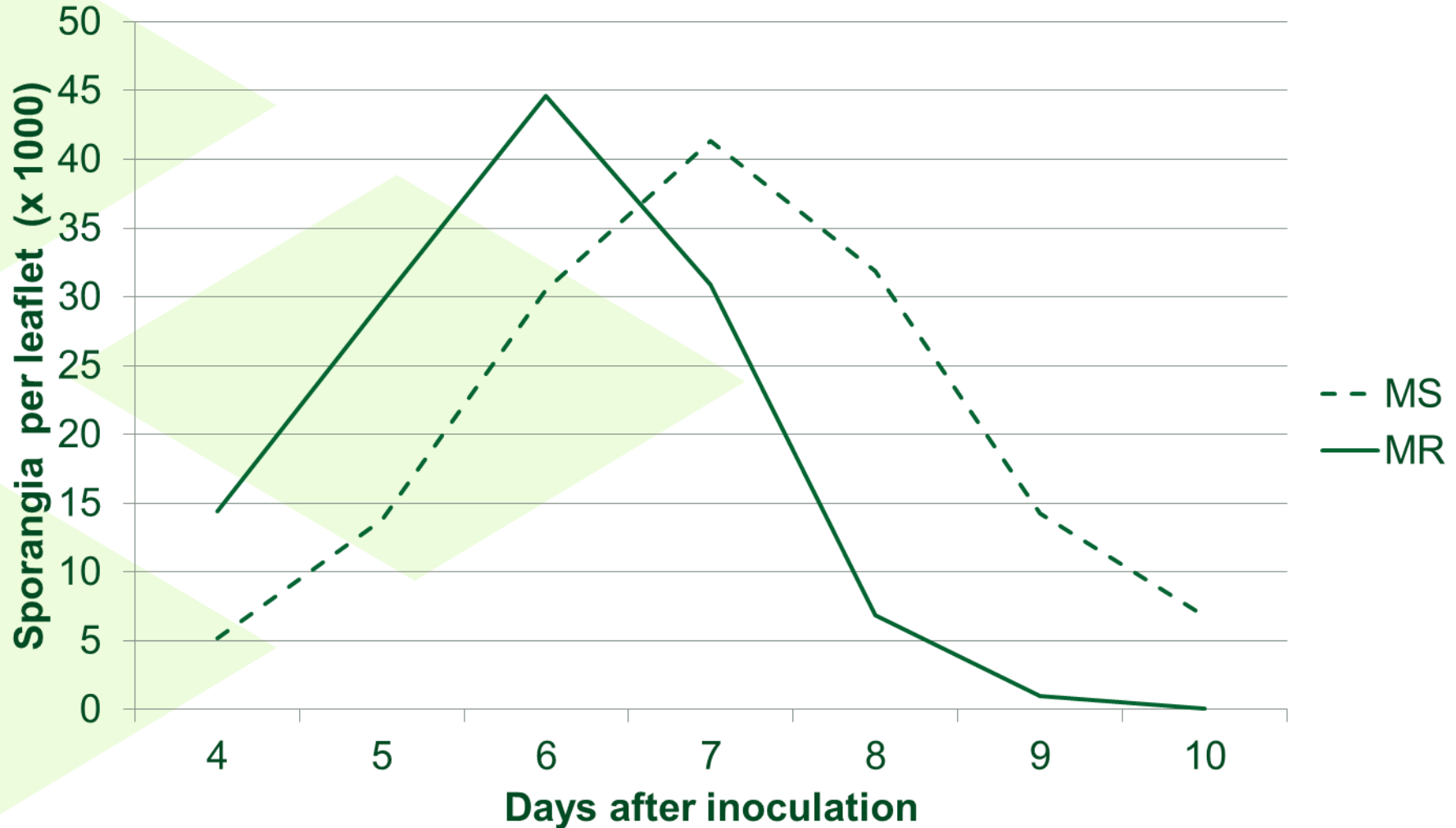
	13_A2	6_A1	Old
	6082F	6090A	7006D
	07/39	8406A	8042B
	6102A	8986A	6422F
Blight severity (%)	31.4	27.5	24.0
Soft rot severity (%)	42.83	46.53	11.78
	F pr. Blight	F pr. Soft rot	
13_A2 vs. 6_A1	0.004	0.007	
13_A2 vs. Old	<0.001	<0.001	
6_A1 vs. Old	0.009	<0.001	

# Severity of blight and % tuber decay after burial 2012



- If 13\_A2 causes less tuber blight, why is this?
  - Does the greater aggressiveness of 13\_A2 on haulm shorten the time period over which the threshold number of sporangia for tuber infection is produced?

# Sporulation in relation to *P. infestans* aggressiveness (Kadish & Cohen, 1989)





# Conclusions

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- Compared with older genotypes:
  - 13\_A2 was more aggressive on tubers, but there was considerable variation between isolates
  - Tubers infected with 13\_A2 are in general more prone to decay by bacterial soft rot

The evidence that more aggressive genotypes have a shorter “tuber infectious period” is not conclusive

# Acknowledgements

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This work was part of the Potato Council-funded project R423 “GB Late Blight Populations: monitoring and implications of population changes” led by the James Hutton Institute with AFBI and SRUC.

