Can an alternative host to *P. infestans* affect late blight epidemiology?

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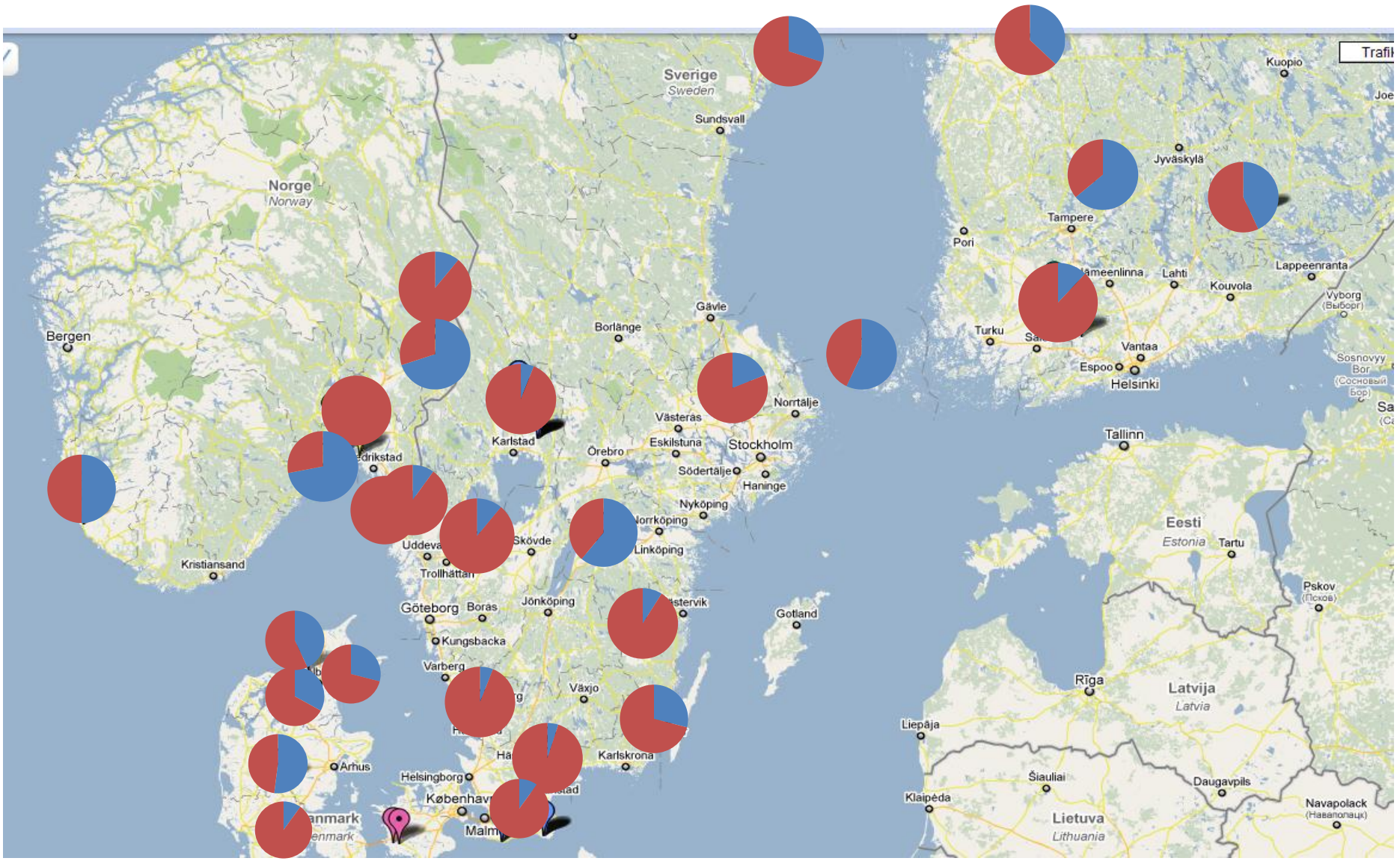
Background

- Hairy nightshade *(Solanum physalifolium)*
- Weed
- Taxonomical unclearity (*Solanum sarrachoides)*
- Big problem on the south coast of Sweden
- Sexual reproduction of *Phytophthora infestans*

Nordic late blight



Hypothesis

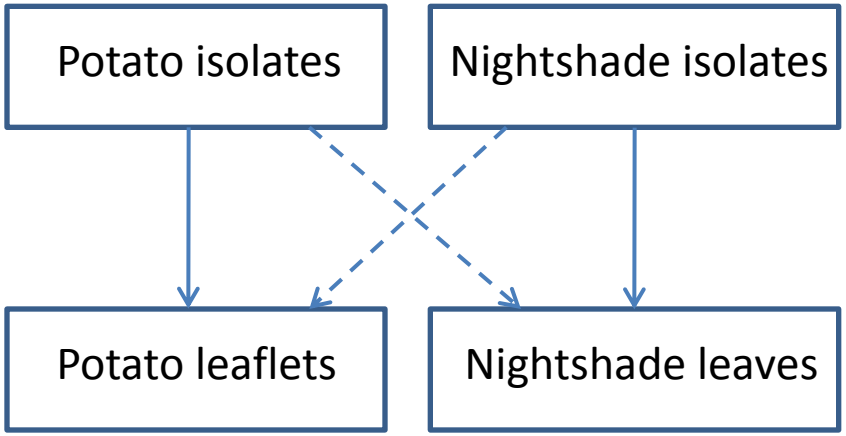
- The different hosts *Solanum physalifolium* and *Solanum tuberosum* will give a population differentiation of *P.infestans*

Sampling

- Potato field with the weed hairy nightshade
- Infected with *P. infestans*
- Collected single lesion leaflets from both host
- Phenotypic and genotypic tests

Methods

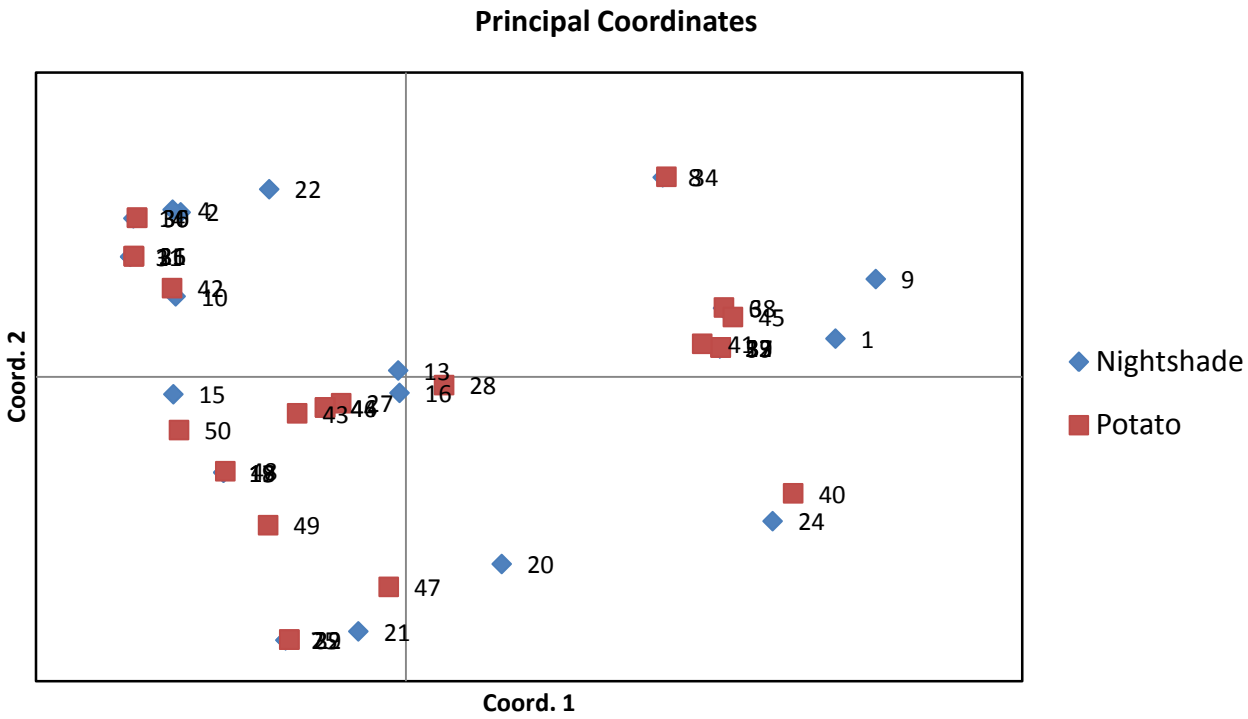
Phenotypic and Genotypic variation



- Inoculated with isolates directly from the field
- Cross inoculation
- Aggressiveness tests
  - Latency period
  - Lesion size
  - Sporulation
- Microsatellites

Results

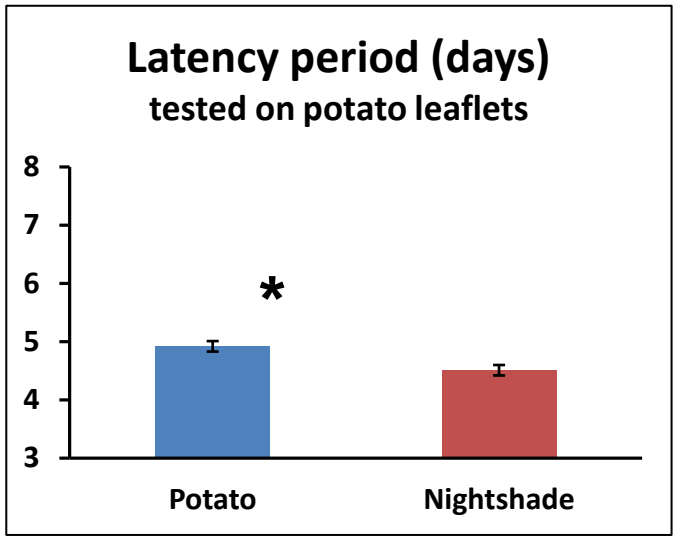
Genotypic variation

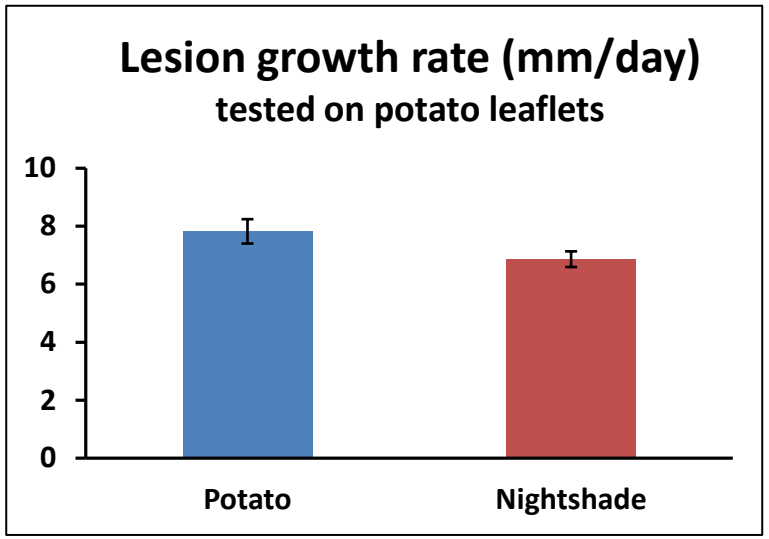


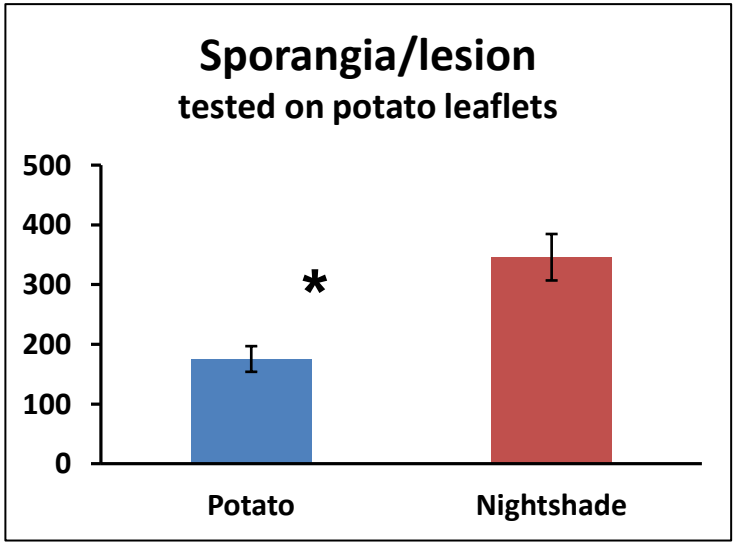
No genotypic differentiation

Results

Phenotypic variation







Methods

Oospore quantification

A2 \ A1	P10	P2	P25	P6	N15	N4
P17	P10 P17	P2 P17	P25 P17	P6 P17	N15 P17	N4 P17
P23	P10 P23	P2 P23	P25 P23	P6 P23	N15 P23	N4 P23
P21	P10 P21	P2 P21	P25 P21	P6 P21	N15 P21	N4 P21
P24	P10 P24	P2 P24	P25 P24	P6 P24	N15 P24	N4 P24
N7	P10 N7	P2 N7	P25 N7	P6 N7	N15 N7	N4 N7
N25	P10 N25	P2 N25	P25 N25	P6 N25	N15 N25	N4 N25
N17	P10 N17	P2 N17	P25 N17	P6 N17	N15 N17	N4 N17
N21	P10 N21	P2 N21	P25 N21	P6 N21	N15 N21	N4 N21

Results

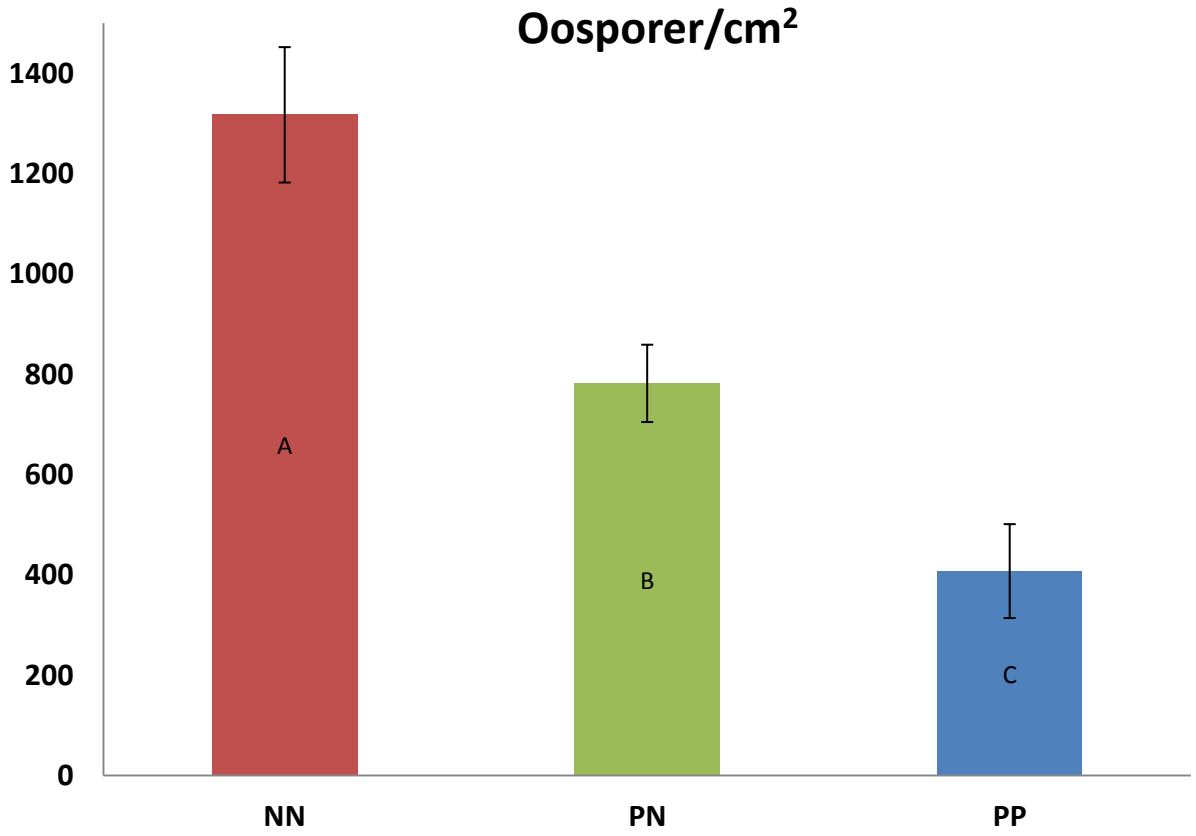
Oospores

A1 / A2	P10	P2	P25	P6	N15	N4
P17	P10 P17	P2 P17	P25 P17	P6 P17	N15 P17	N4 P17
P23	P10 P23	P2 P23	P25 P23	P6 P23	N15 P23	N4 P23
P21	P10 P21	P2 P21	P25 P21	P6 P21	N15 P21	N4 P21
P24	P10 P24	P2 P24	P25 P24	P6 P24	N15 P24	N4 P24
N7	P10 N7	P2 N7	P25 N7	P6 N7	N15 N7	N4 N7
N25	P10 N25	P2 N25	P25 N25	P6 N25	N15 N25	N4 N25
N17	P10 N17	P2 N17	P25 N17	P6 N17	N15 N17	N4 N17
N21	P10 N21	P2 N21	P25 N21	P6 N21	N15 N21	N4 N21

Oospores in potato leaves	Oospores in nightshade	Oospores in both potato and nightshade	No oospores

Results

Oospores



Discussion

- Phenotypic but no genotypic differentiation
- Isolates from nightshade more aggressive on potato
- Is it easier for nightshade isolates to infect potato?
- Nightshade isolates produce more oospores on potato
- Increasing problem!?