

Alternative hosts of *Spongospora subterranea*
f.sp. *subterranea*

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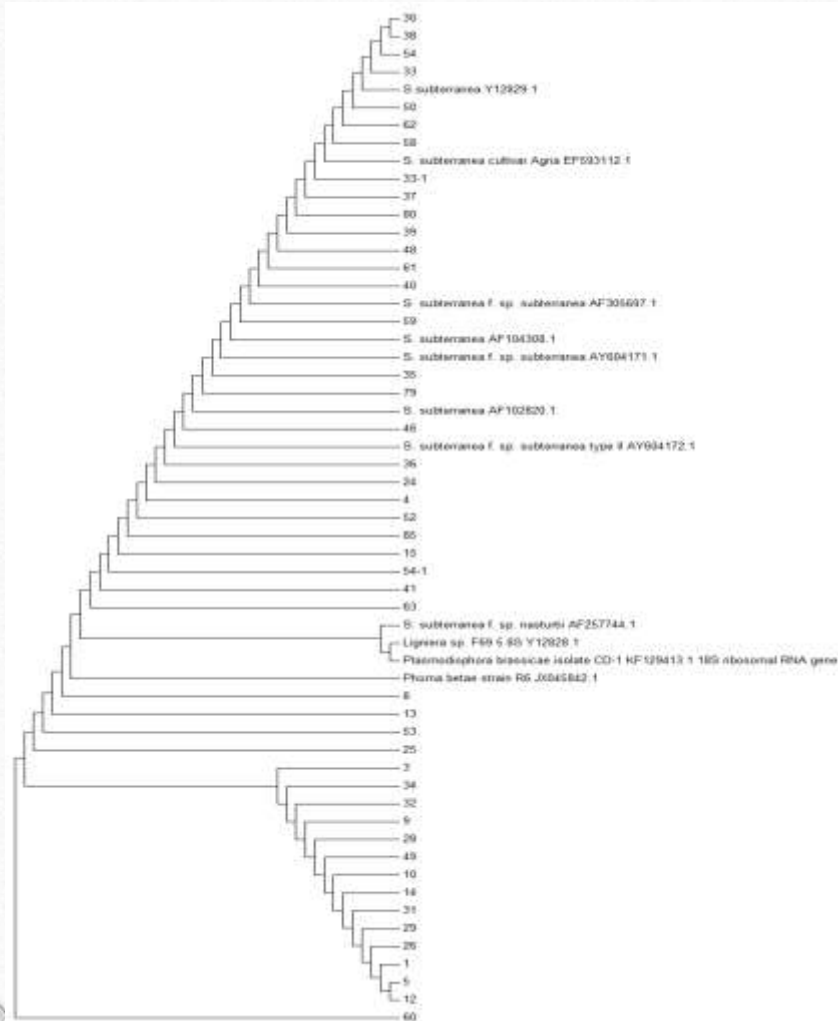
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Background

- Per capita consumption of potatoes has increased in developing countries in Southern African region
- Area put to potatoes has increased in response to this increase in potato consumption.
- Demand has outstripped production, leading to imports in the region, mainly from South Africa.
- Pressure of soil borne diseases has increased due to intensive farming

Characterisation of Sss samples found in S.A and Zimbabwe



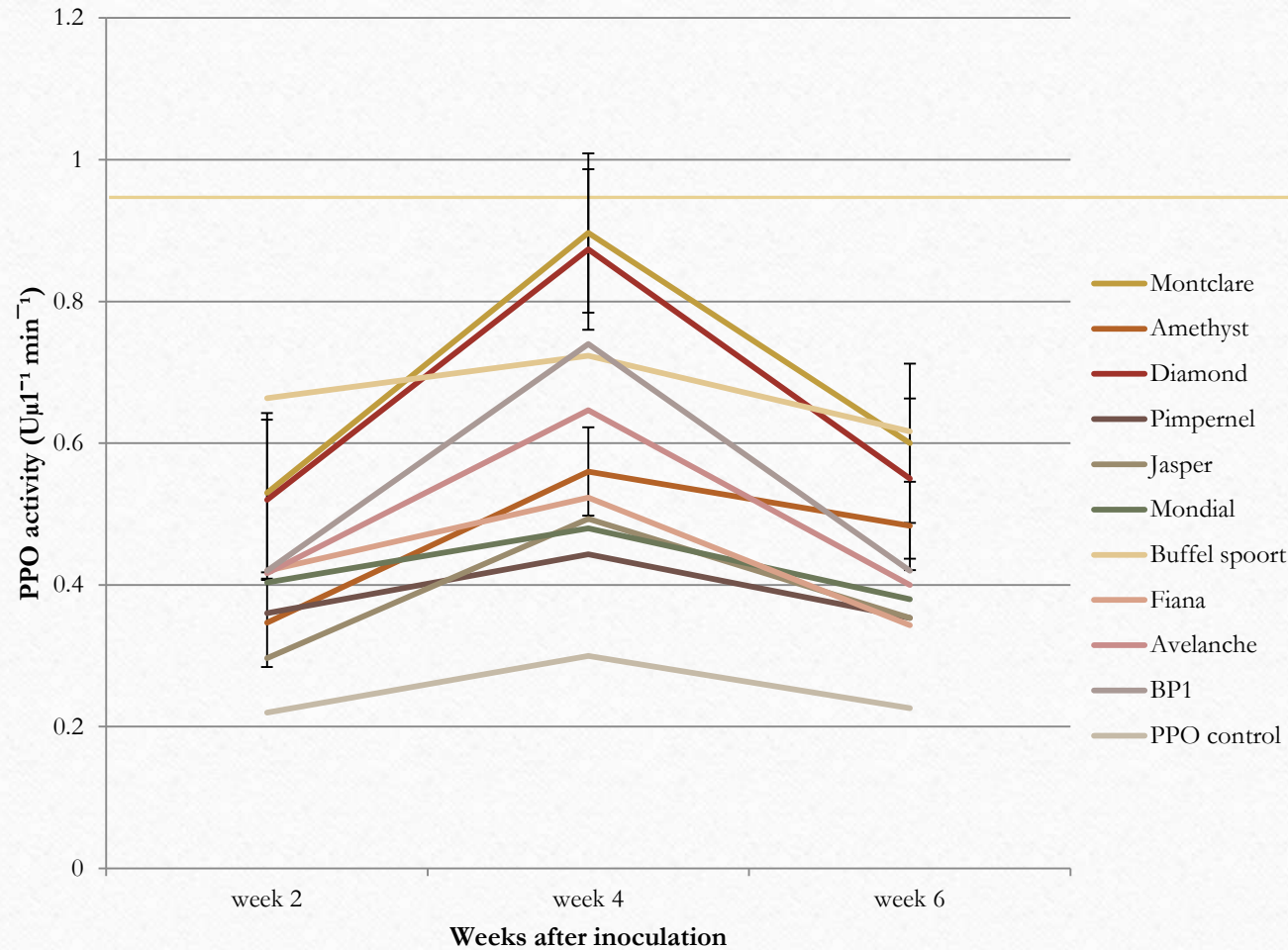
- Samples were collected from seed and table potato farmers both in S.A and Zim
- Some were from weeds or rotation crops after a P.S potato
- Neighbor joining, maximum parsimony and maximum likelihood conducted
- Group 2 or Type (European)

Enzyme activity: Polyphenoloxidase(PPO), Peroxidase (POD) and Phenylalanine Ammonia Lyase (PAL)

- Varieties: 11
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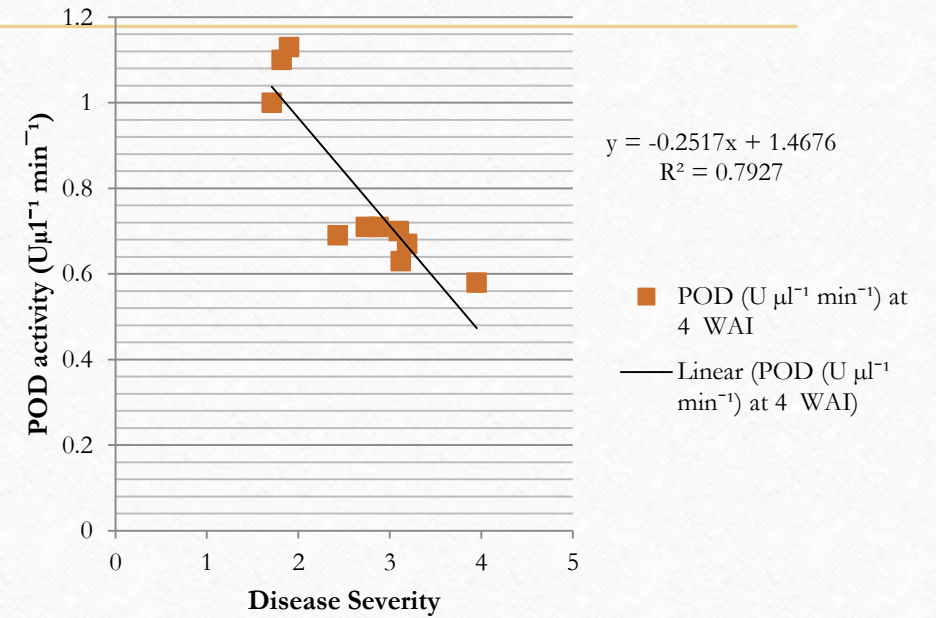
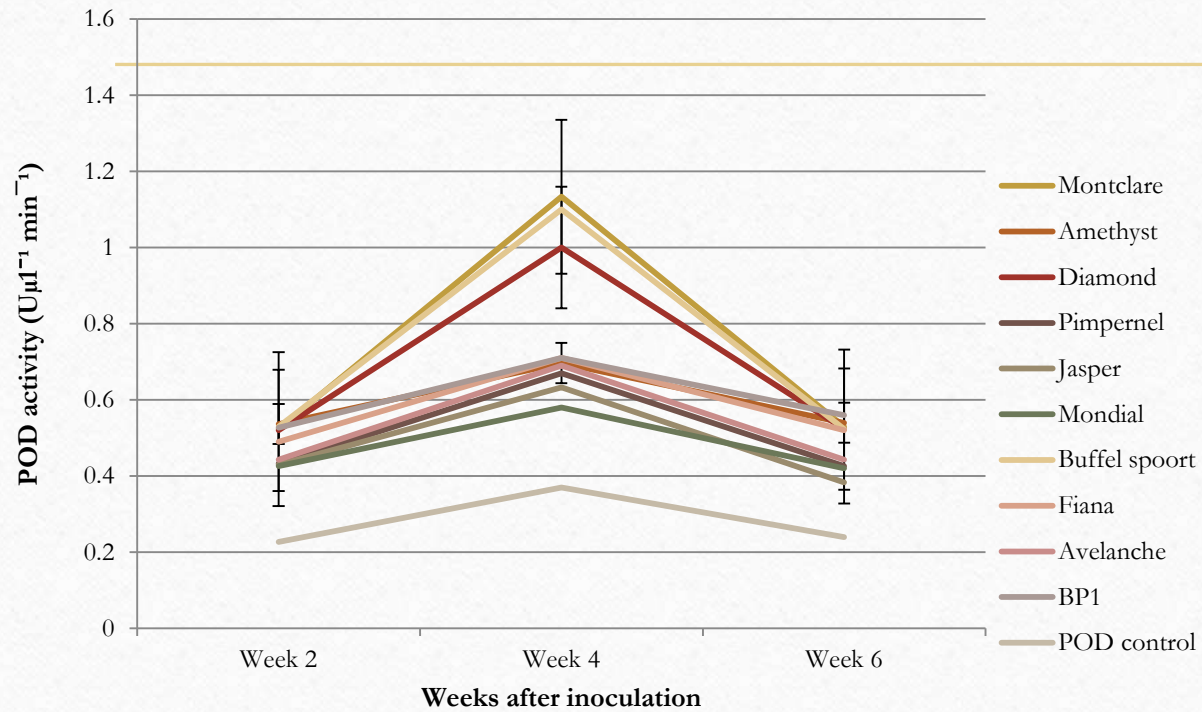
Planted in a greenhouse, RCBD used
- Enzyme assays: done on tubers
- POD and PPO: Gao (method) with minor modification
- PAL : (Lisker *et al*, 1983)
- Disease severity and incidence : scoring done according to Falloon *et al* 1995)

Host plant resistance: Polyphenoloxidase (PPO) activity increased, with maximum activity at 4 weeks after inoculation

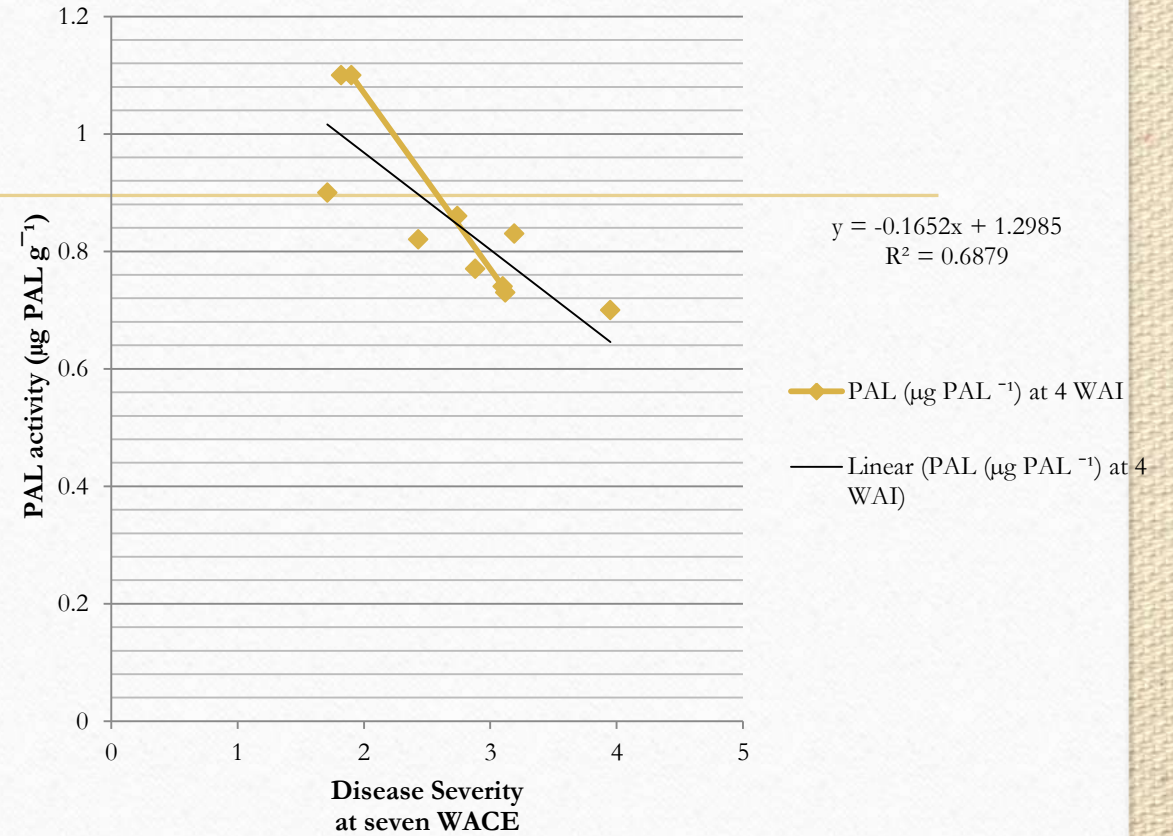
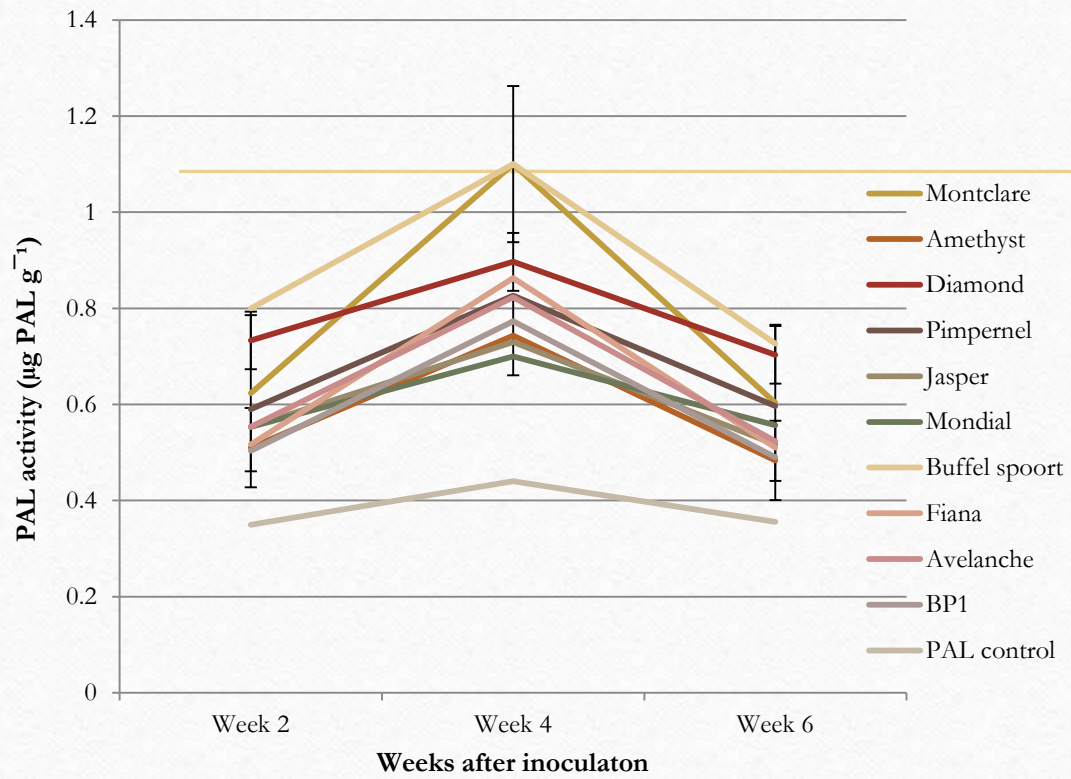


- Sign. increases in PPO, POD and PAL from 2 weeks after inoculation
- Peak enzyme activity was recorded at 4 weeks
- Sign. negative correlation between enzyme activity and disease severity

Peroxidase activity:



Phenylalanine ammonia lyase activity:



Alternative hosts of S.s.s.

- We are receiving samples of weeds and other rotation crops with root galls collected from S.s.s infested fields.
- To identify the alternative hosts of S.s.s
- Identify possible crops which could be used as trap crops in rotation.

Materials and Methods

- Weeds: 50 common weeds found in Southern Africa
(grasses and broad leaves)
- Weeds were planted in Sss infested soil from Limpopo Province
- Conventional PCR confirmed the soil to be infested with Sss.
- Roots of the weeds were sampled at 2 and 4 weeks and at maturity.
- No root galls were observed on the weeds or control (tomato), neither were zoosporangia or plasmodia observed under the microscope.

Acknowledgements

- University of Pretoria
- Potato South Africa
- Potato Pathology at UP staff and students
- ACGT (sequencing)
- SIRDC (employer)

Thank you