



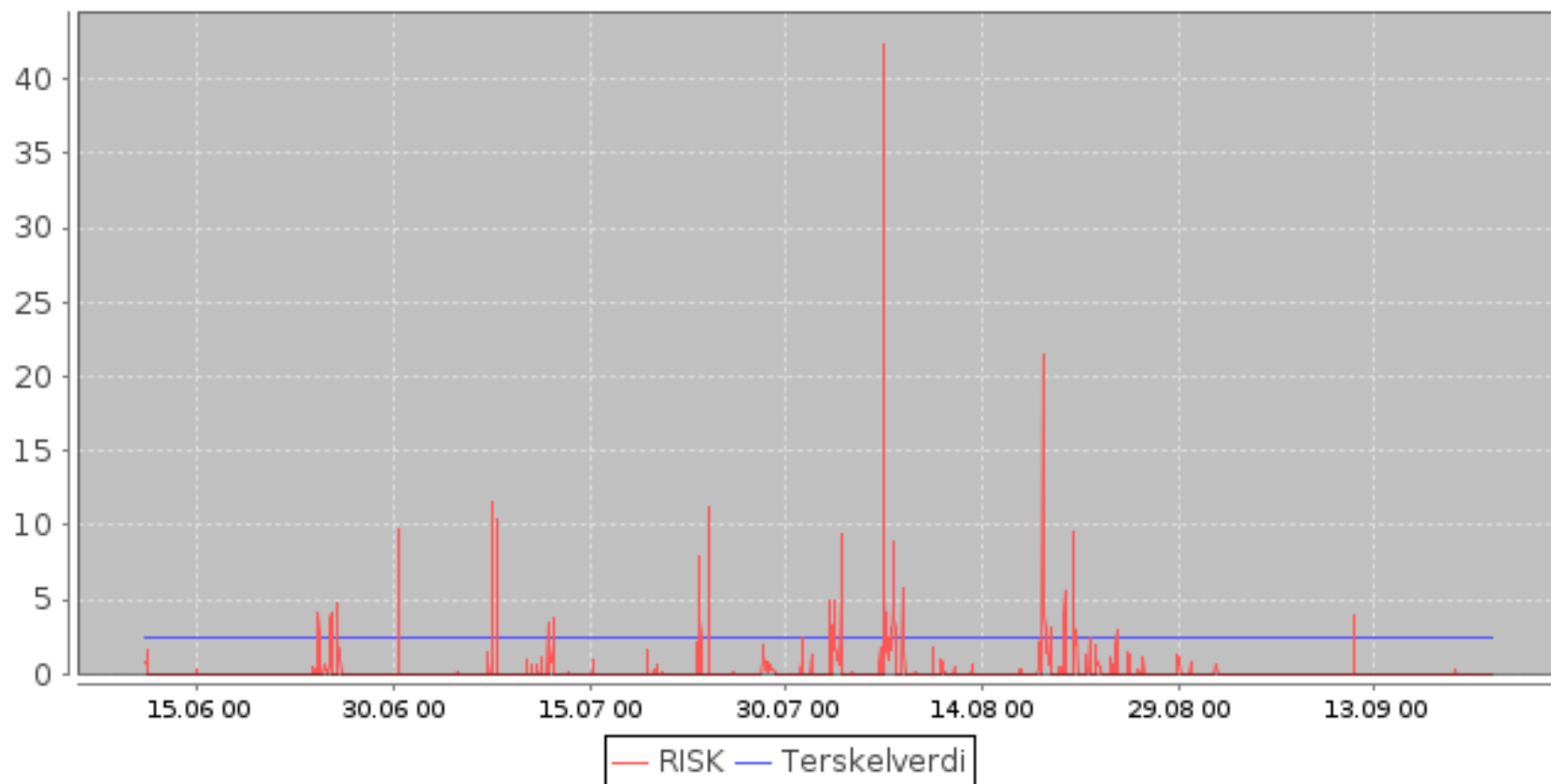
Potato late blight forecasting and initial inoculum sources in Norway

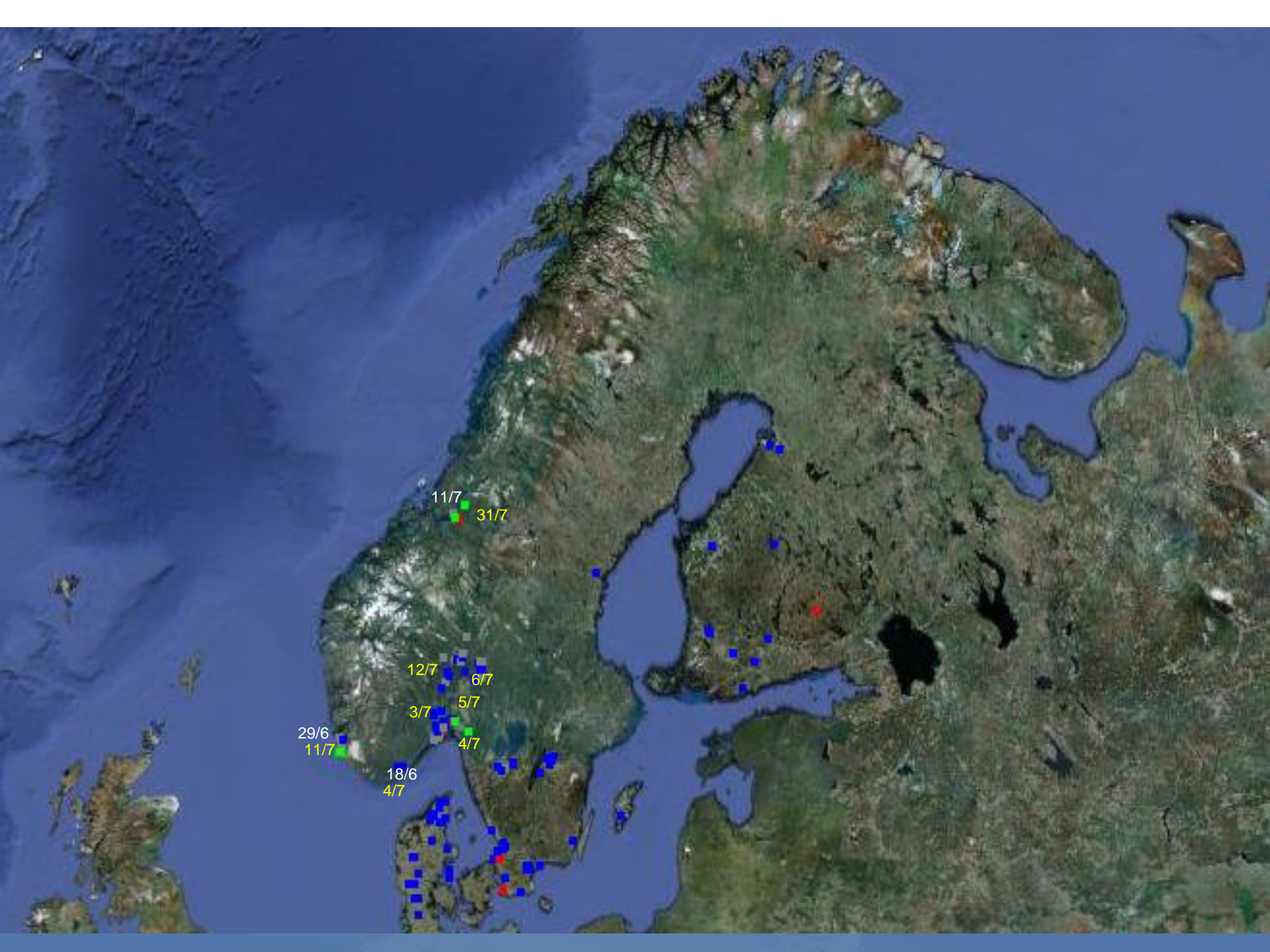
Ragnhild Nærstad, Vinh Hong Le, Arne Hermansen

Bioforsk

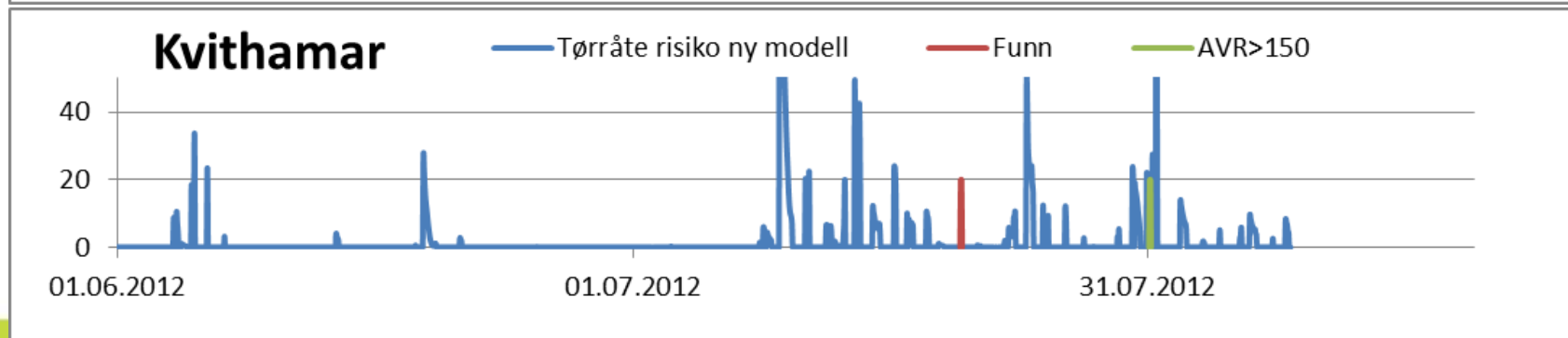
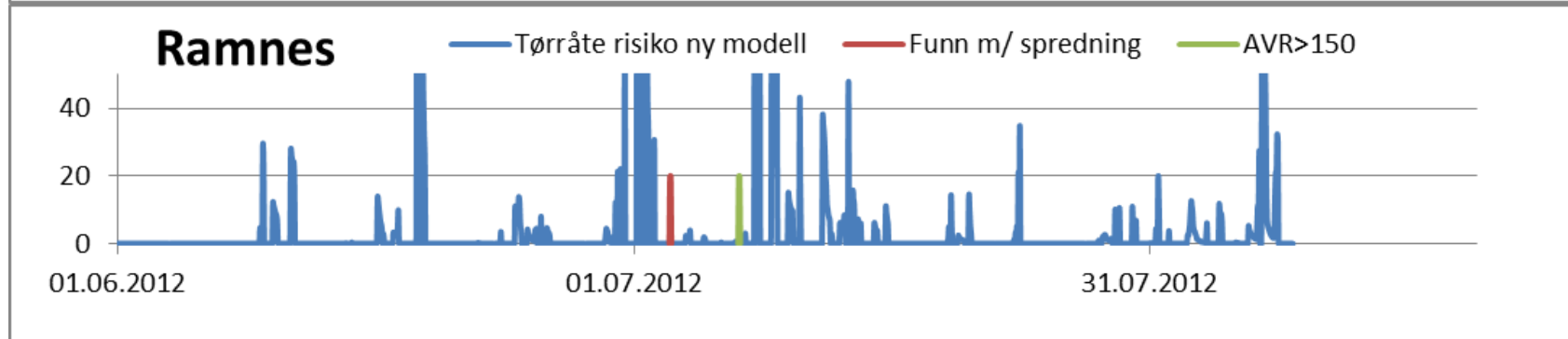
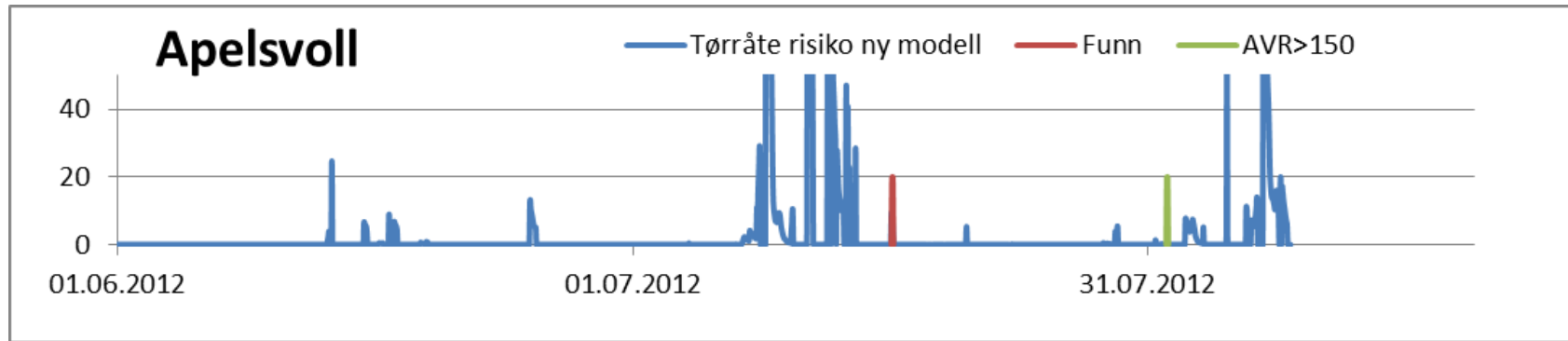
Plant Health and Plant Protection

RISK

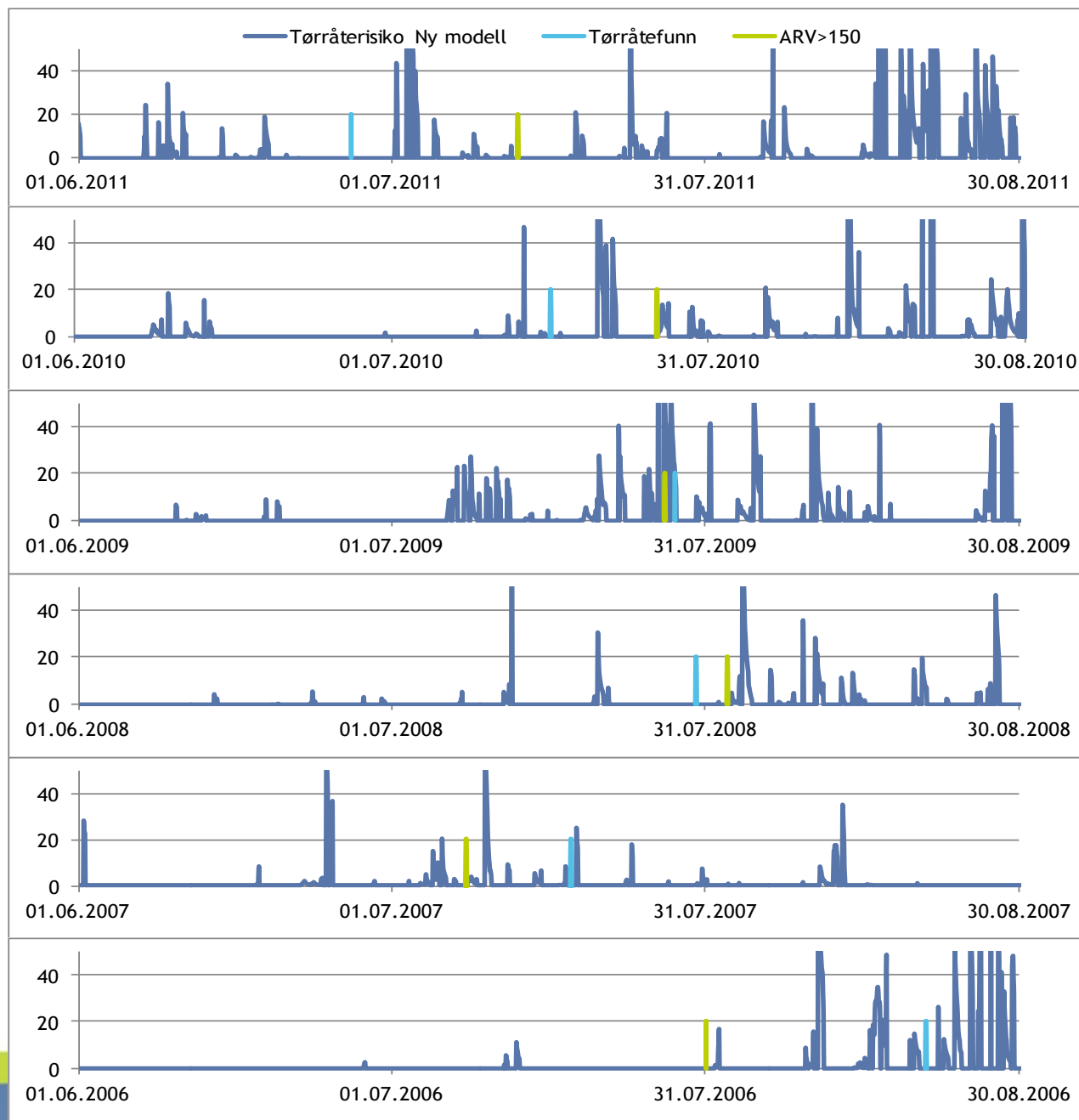




Early late blight outbreaks

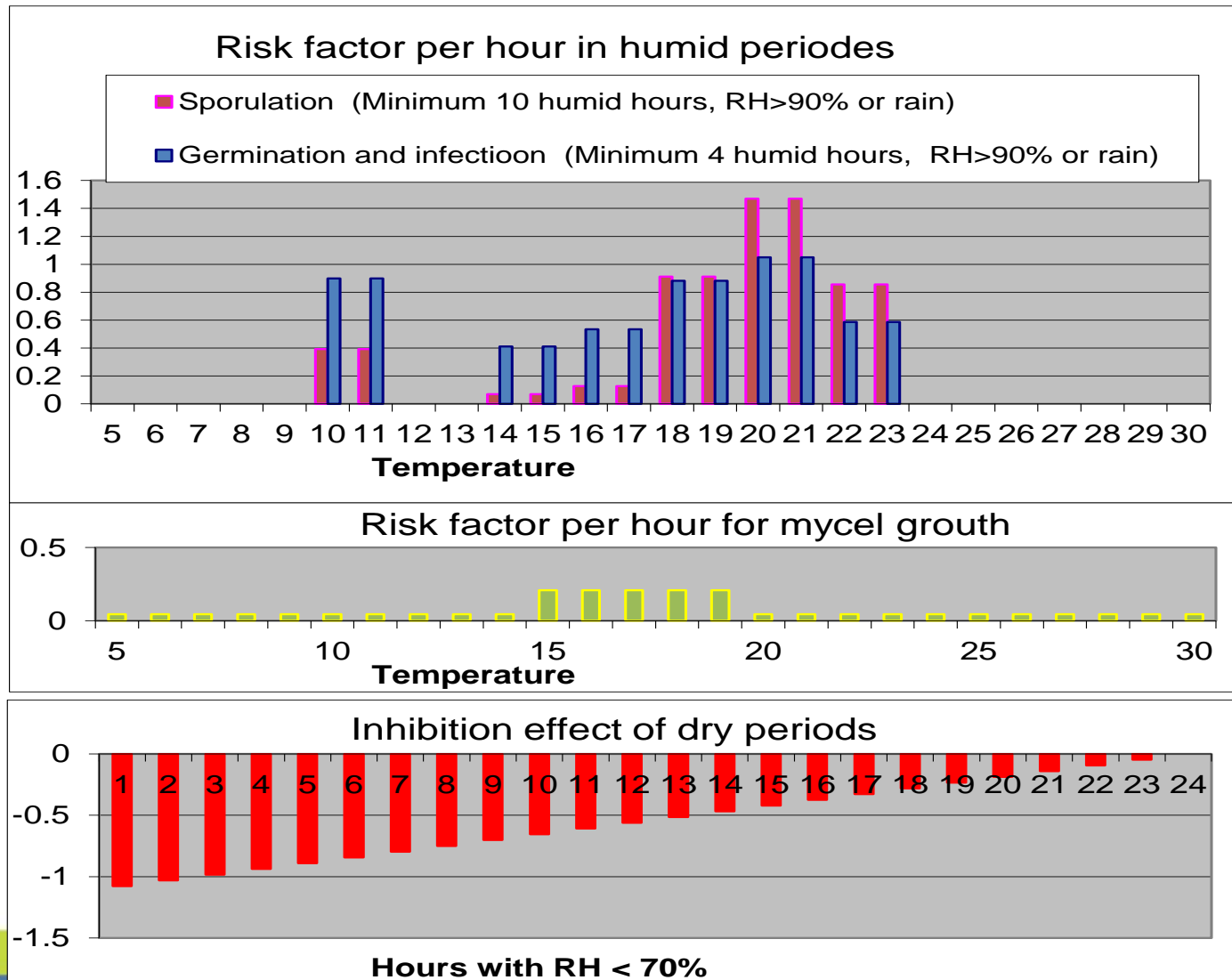


Combination of periods with high risk according to the new late blight model and wet soil gave many early outbreaks in 2011 and 2012

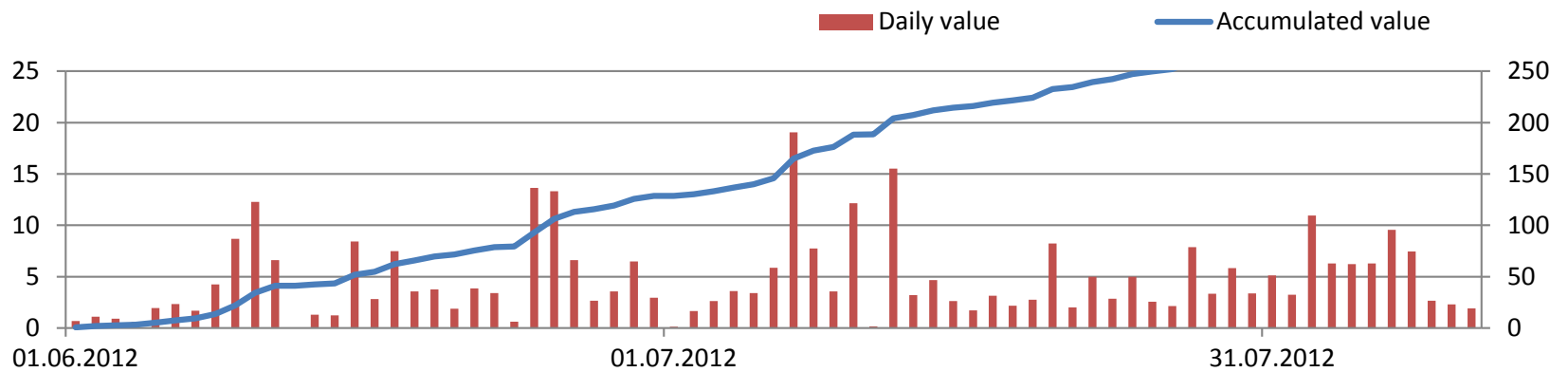
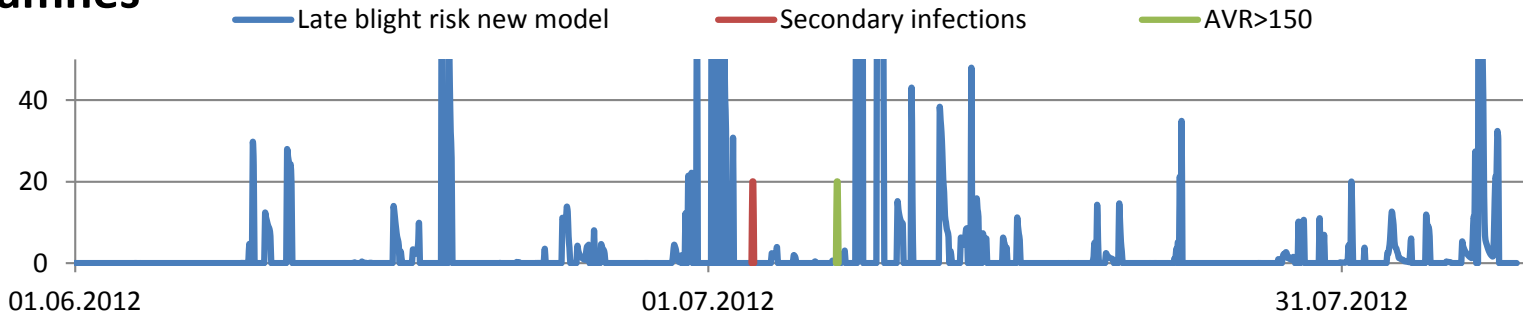


Negative prognosis model

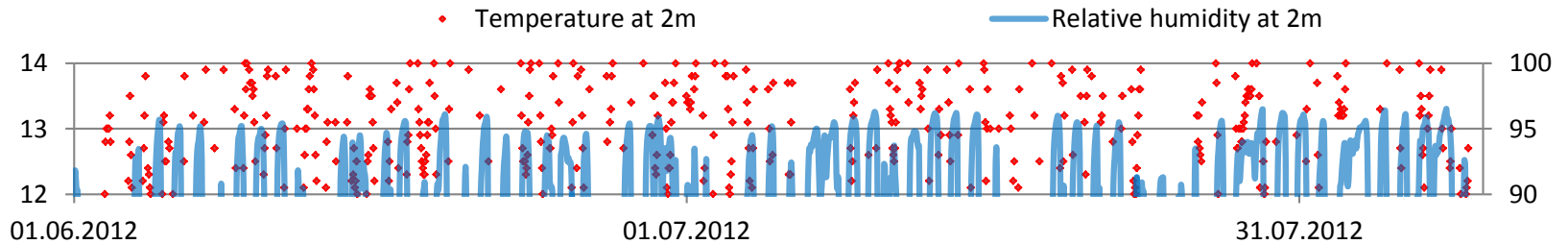
Risk = Sporulation + infection + mycel growth + dry periods



Ramnes

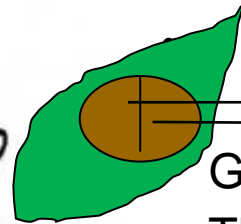
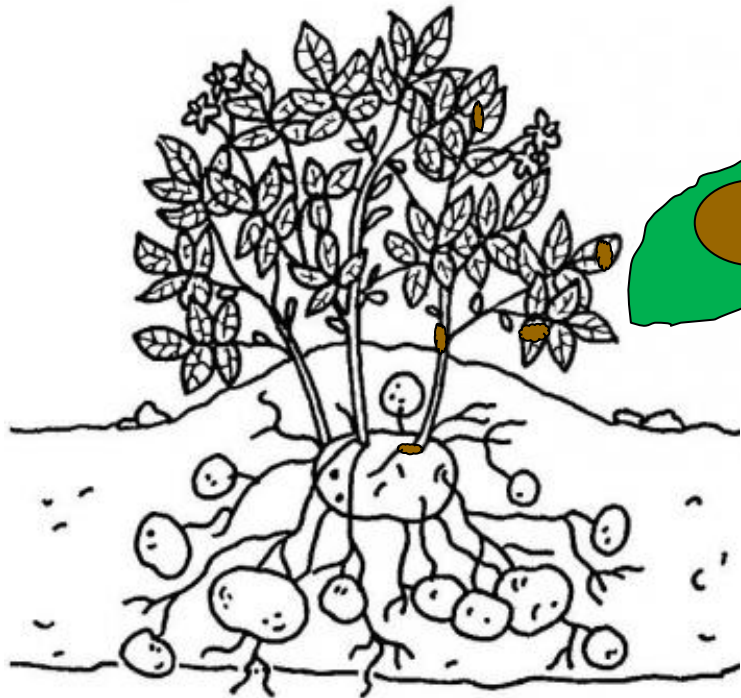


Ramnes (22 % of the humid hours had temperatures between 12 and 14 degrees)



What is the initial inoculum source:

- Sampling from potato fields with early attacks:
 - » Sample from 10 fields
 - » Sample from the 5 plants with primary attacks (plants with stem blight)
 - » From each plant sample 3 leaf lesions, 1 stem lesion and the mother tuber

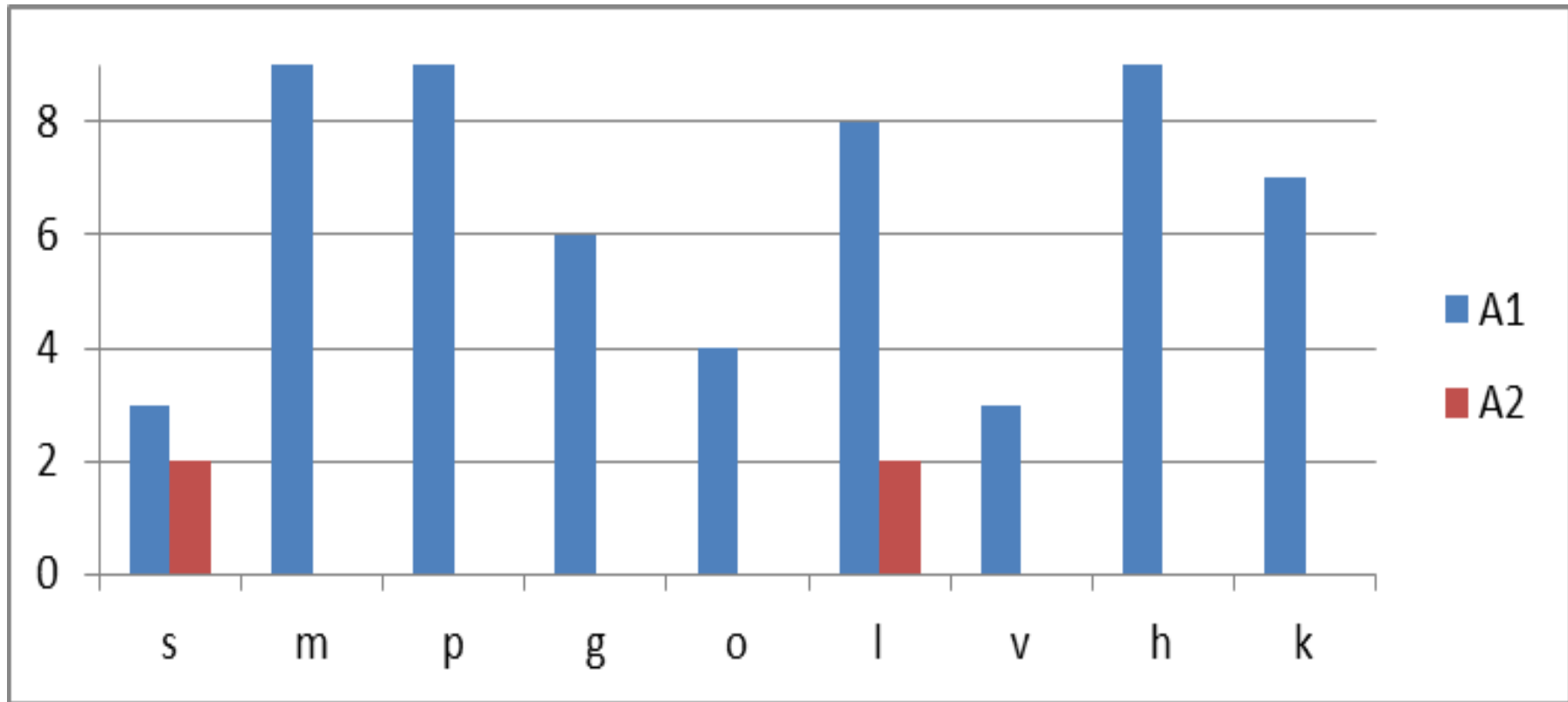


- Isolation of *P. infestans*
- Fingerprinting

Genotype all samples (250 samples)

- The same genotype through out all samples in the plant => the mother tuber is the source of inoculum
- Matingtype
- metalaxyl and propamocarb resistance

Mating types distribution for *Phytophthora infestans* in different fields

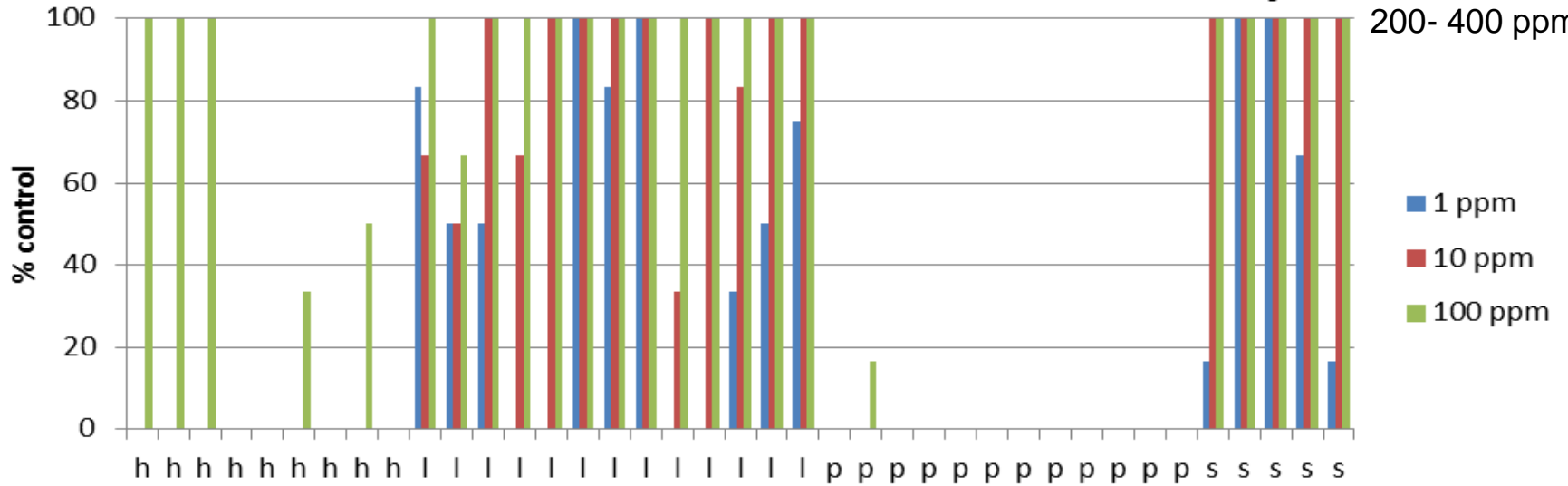


Testing on floating leaf discs

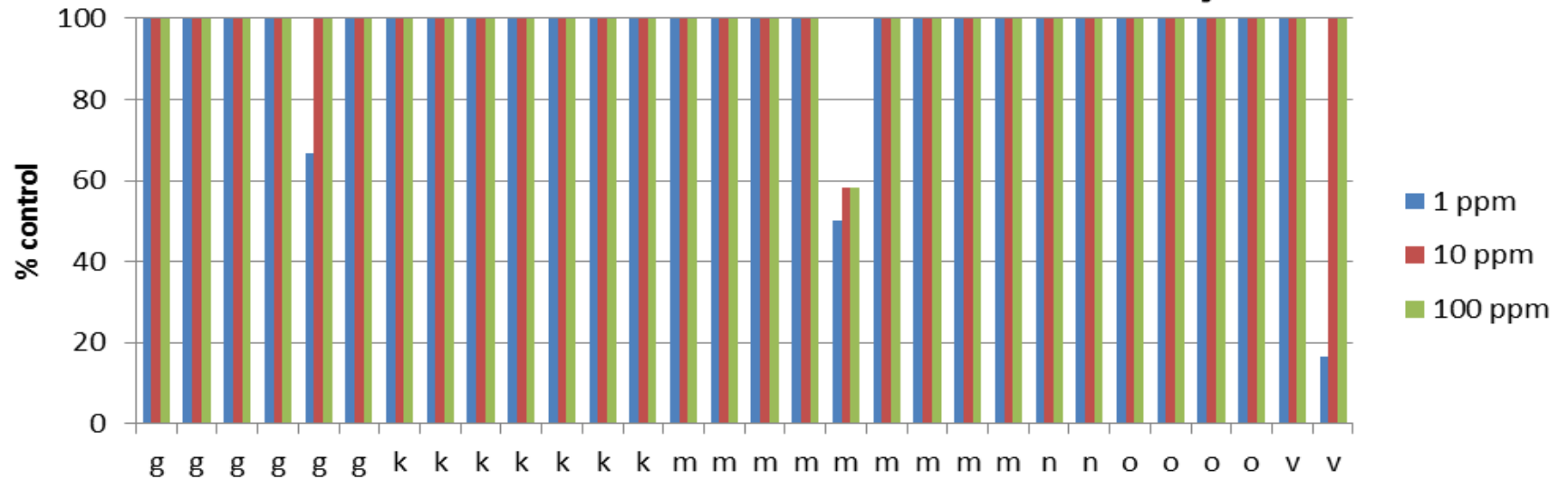


Effect of metalaxyl on sporulation. Isolates from fields treated with metalaxyl.

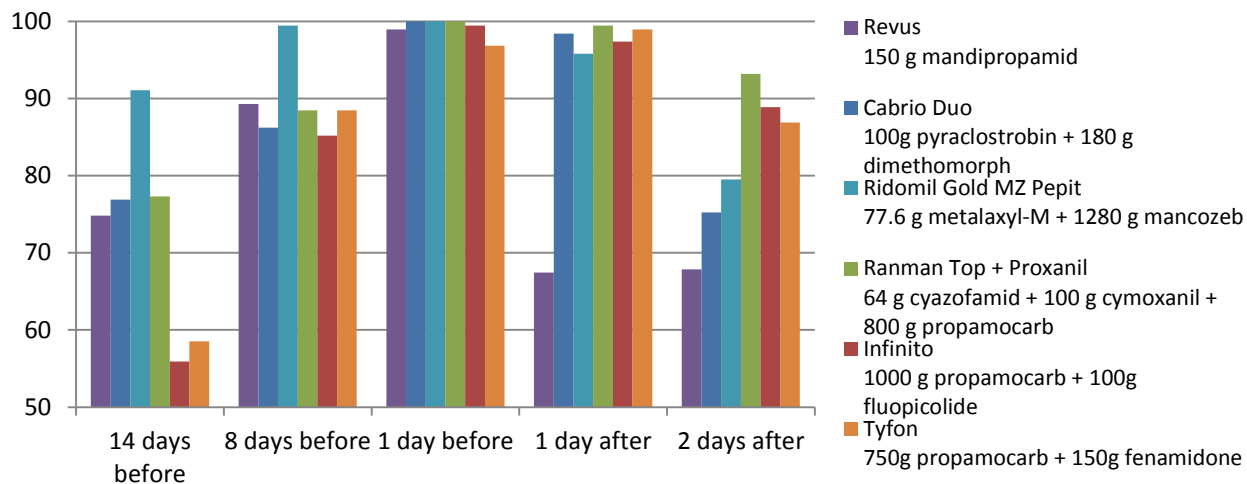
Concentration applied in the field is 200- 400 ppm



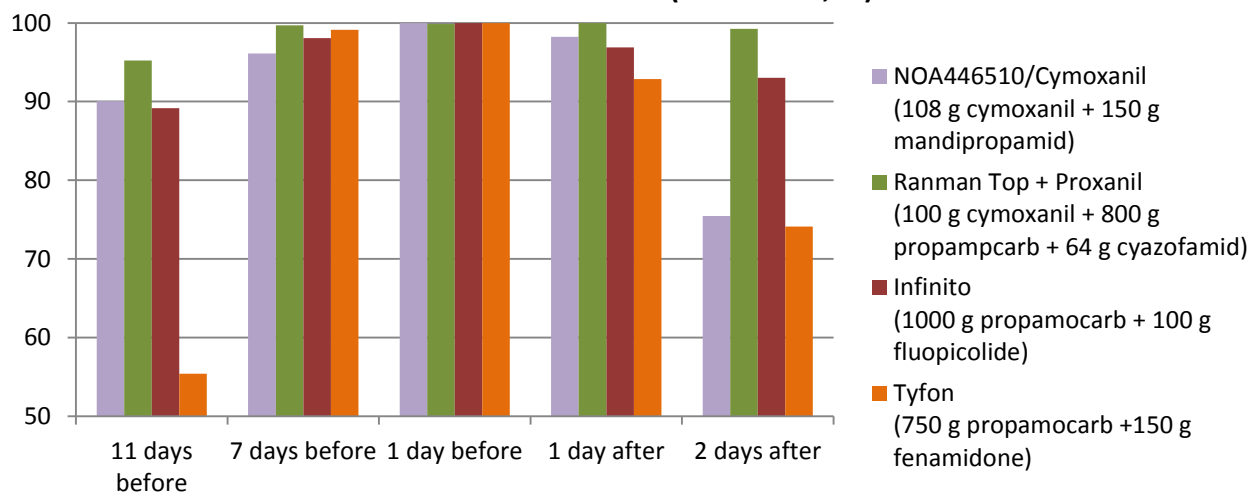
Effect of metalaxyl on sporulation. Isolates from fields without metalaxyl.



Late blight protection from fungicide applied before or after infection (LSD5%=19.1)



Late blight protection from fungicide applied before or after infection (LSD5%= 12,27)



Trap plant trials

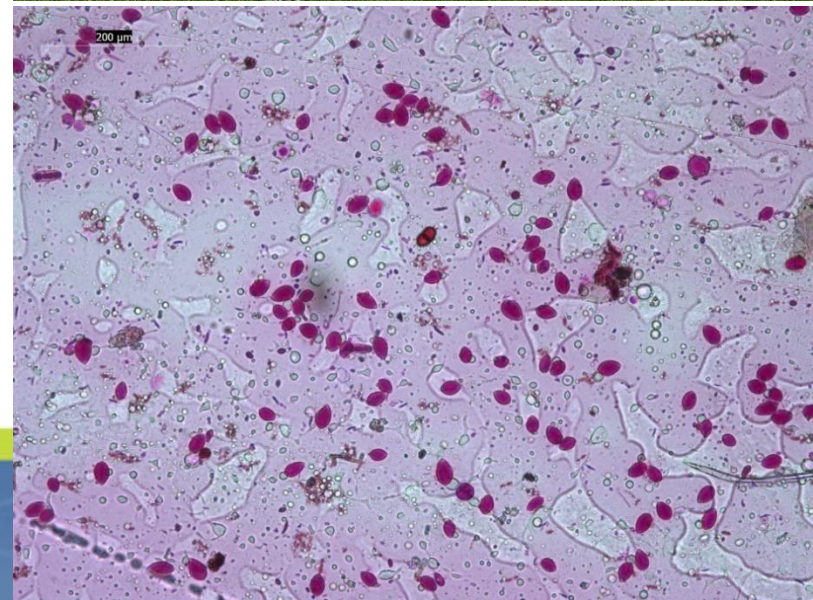
- Infected potato field
- Spore trap
- Trap plants exposed from 3 pm to 3 pm the following day
=> incubated dry



- Weather data were recorded ca 1 kilometer from the field trial



Spores were stained and counted



Spore trap + trap plants



