

Plant Pathology at Parma Research and Extension Center

James Woodhall

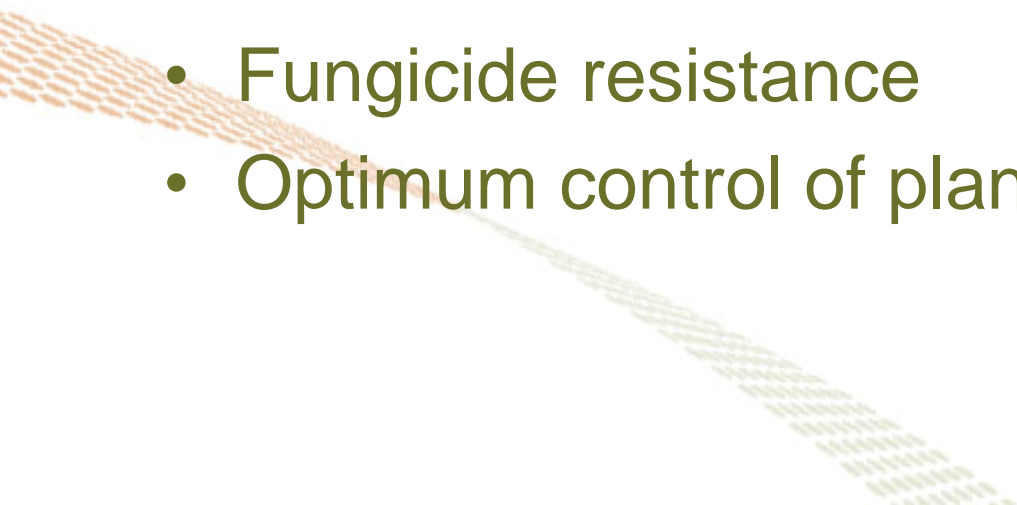


‘Diagnostics hub’ for Idaho

- Support diagnostic activity to other U of I research programs
- Develop new diagnostics methods
- High throughput molecular diagnostics
- Investigate new and unknown diseases
- NPDN lab



Research program

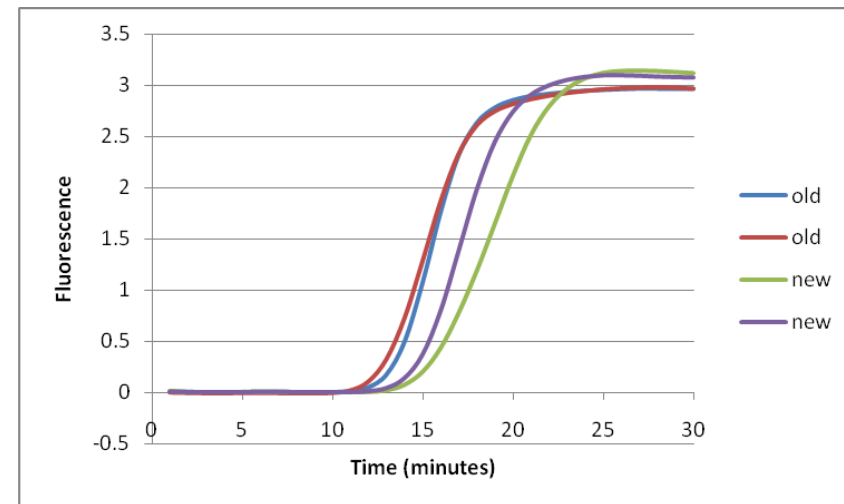
- Develop new diagnostic methods
 - qPCR from soil, water and air
 - In field testing of pathogens using LAMP
 - Epidemiology of plant pathogens
 - Soil and root health
 - Fungicide resistance
 - Optimum control of plant pathogens
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LAMP: Genie instrument



- touchscreen
- Intuitive user interface
- Can connect to computer for additional analysis, archiving of results
- Battery-powered

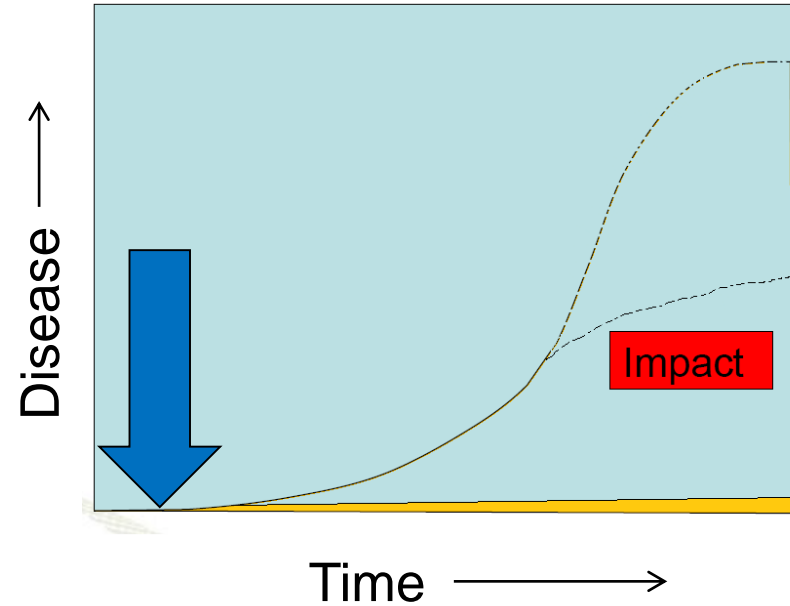
- Non-denatured target
- Isothermal reaction at 65° C
- 10-30 minute reaction time



Predictive diagnostics?

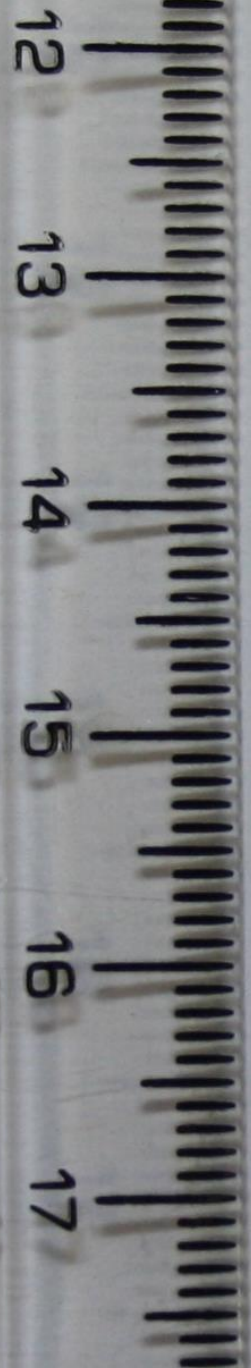
- **‘Reactive diagnostics’**
- Identify causal agent
- Correct rectifying treatment
- Disease Intelligence

- **‘Predictive diagnostics’**
- Precision agriculture/horticulture
- Planting decisions
- Reduce pesticide inputs & losses



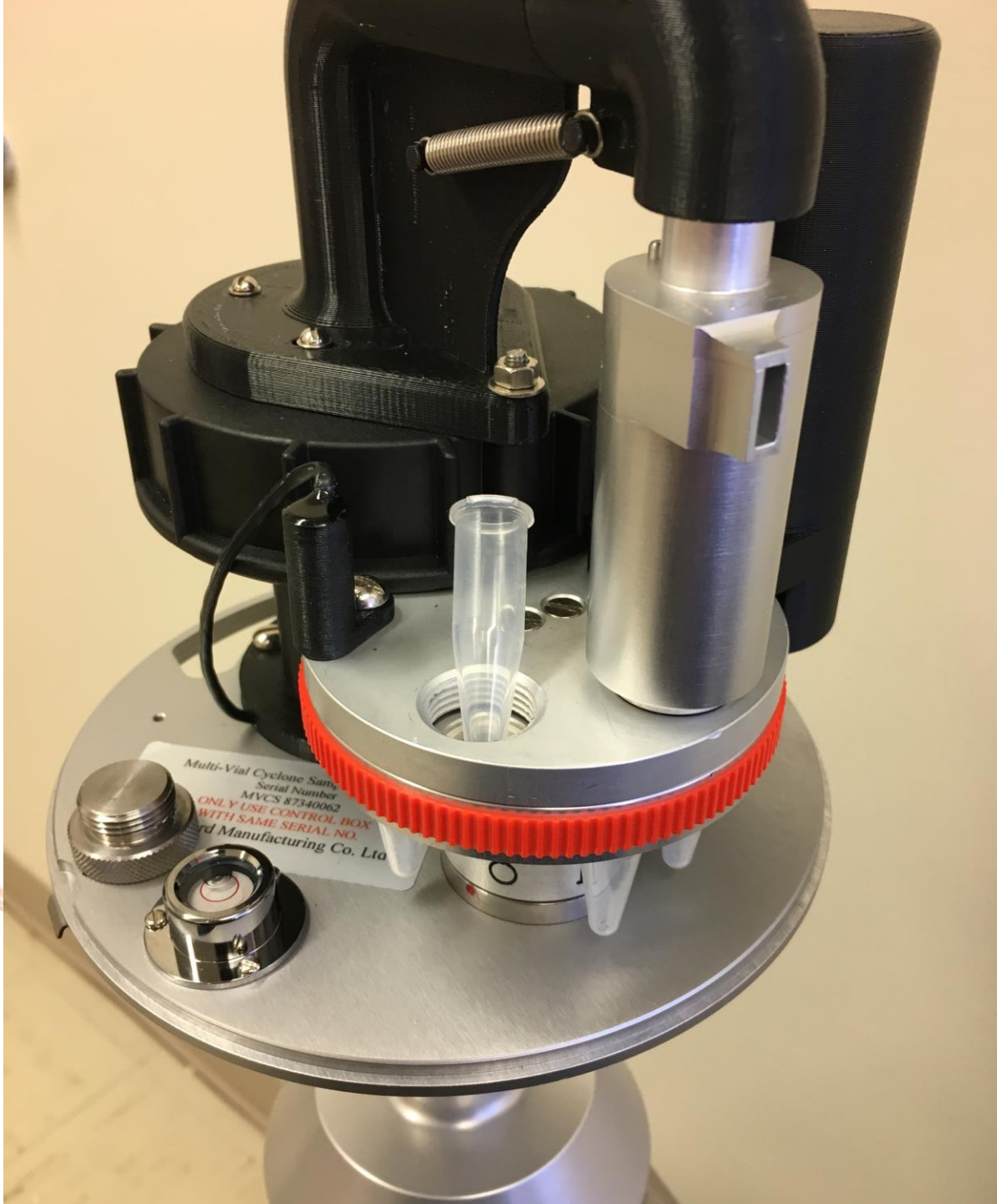
DNA Extraction from soil

Easily detect 1 sclerotia
in 1kg (= 2.2lb) soil



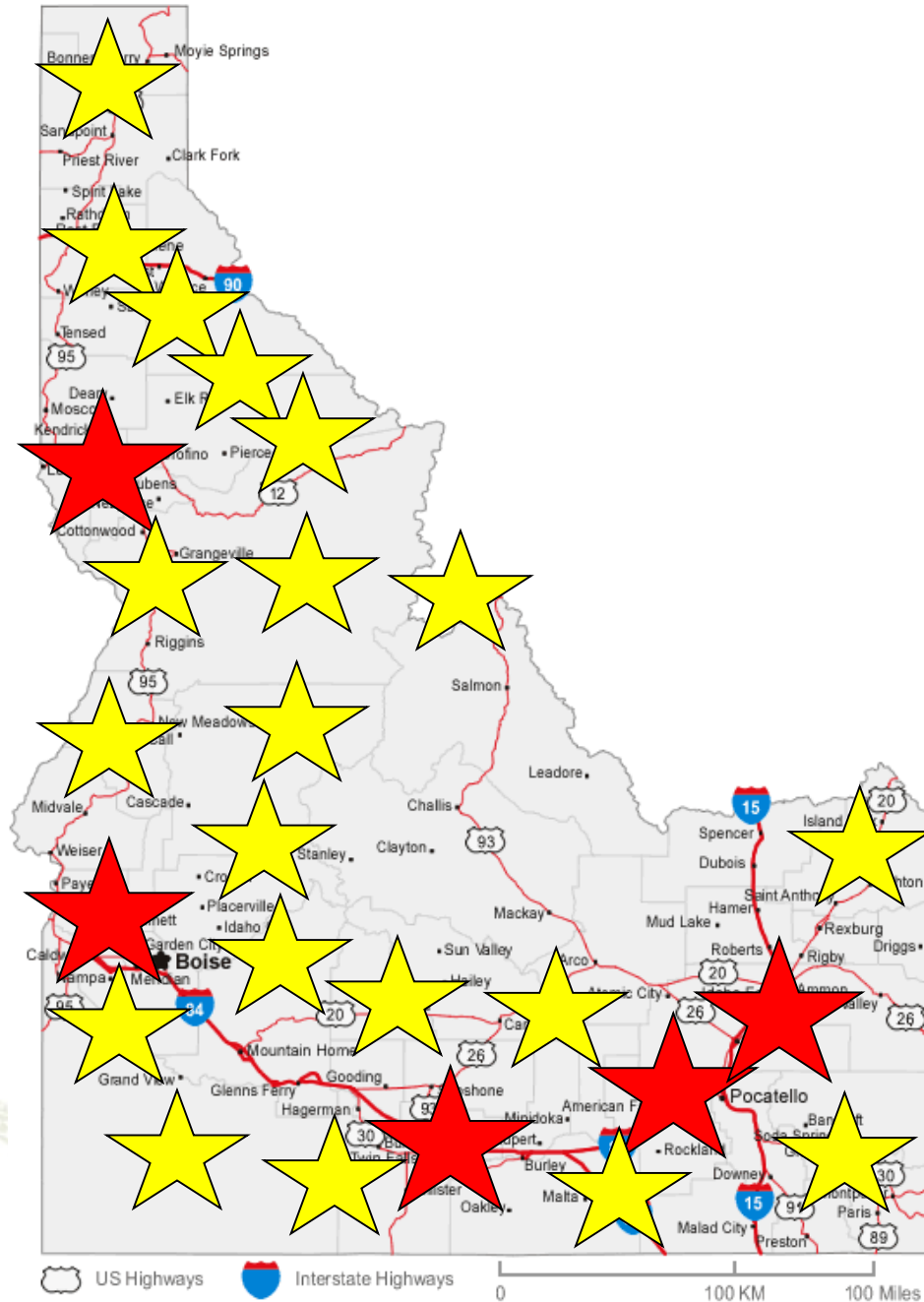
Detecting foliar pathogens pre-disease in air





Multi-Vial Cyclone Separator
Serial Number
MVCS 82340062
ONLY USE CONTROL BOX
WITH SAME SERIAL NO.
Ford Manufacturing Co. Ltd.

Spore sampling network?



Conclusions

- Exciting time to be in diagnostics
 - More technology than ever – need to integrate with other disciplines and technologies
 - Tell me what assays you want developed!
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