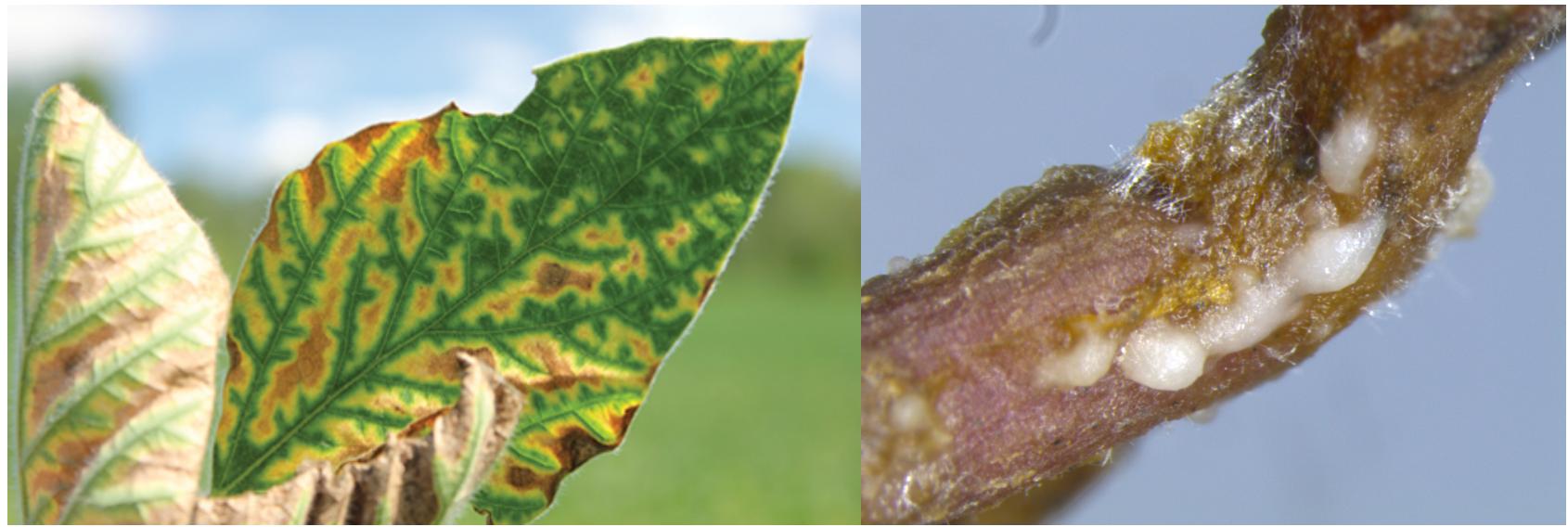


SDS and *Phytophthora* qPCR assays



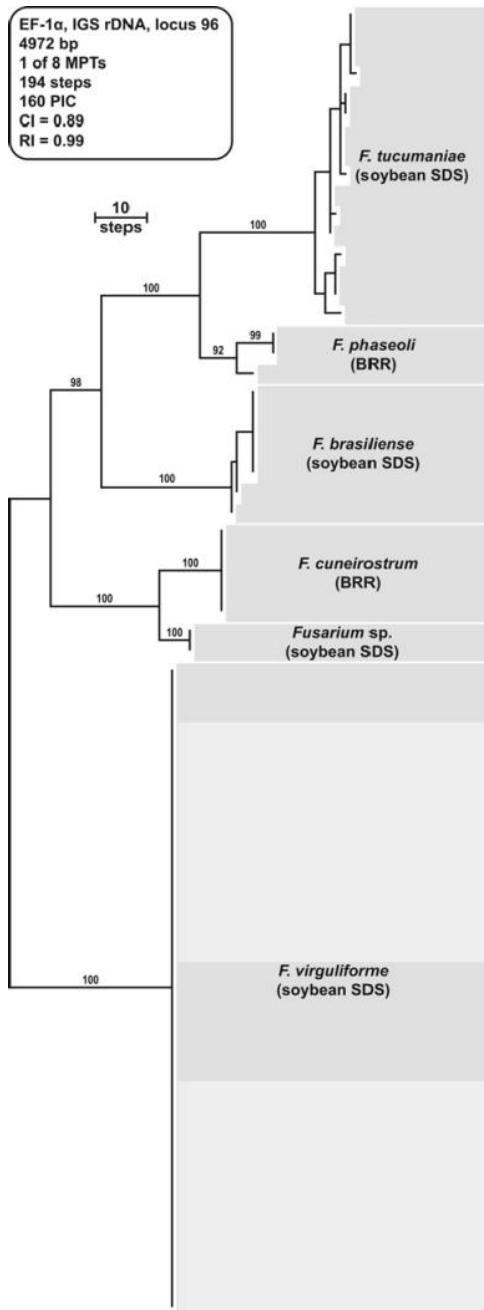
**Jie Wang
Alejandro Rojas
Tim Miles**





Fusarium virguliforme – SDS qPCR

EF-1 α , IGS rDNA, locus 96
4972 bp
1 of 8 MPTs
194 steps
160 PIC
CI = 0.89
RI = 0.99



Choice of locus

Closely related non-target species

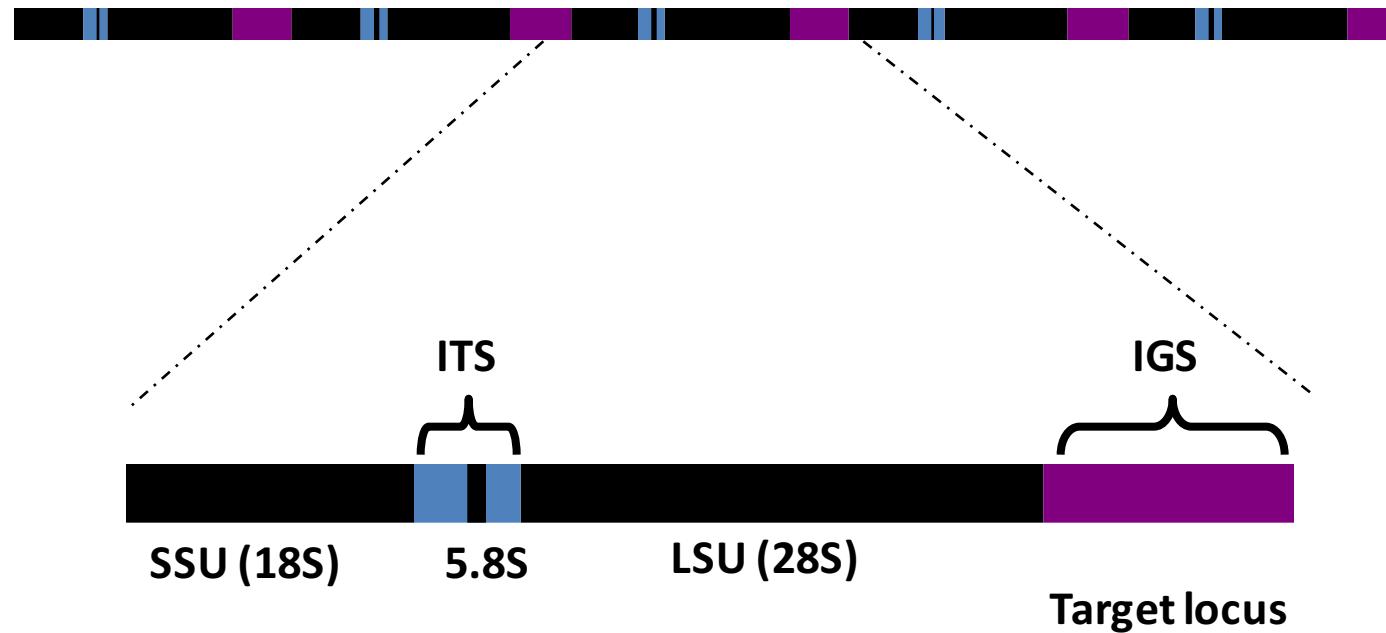
Phylogenies guided assay design

Target species
– *Fusarium*
virguliforme

O'Donnell et al. 2010

qPCR Locus Selection

Ribosomal DNA (multicopy)



ITS: Internal transcribed spacer

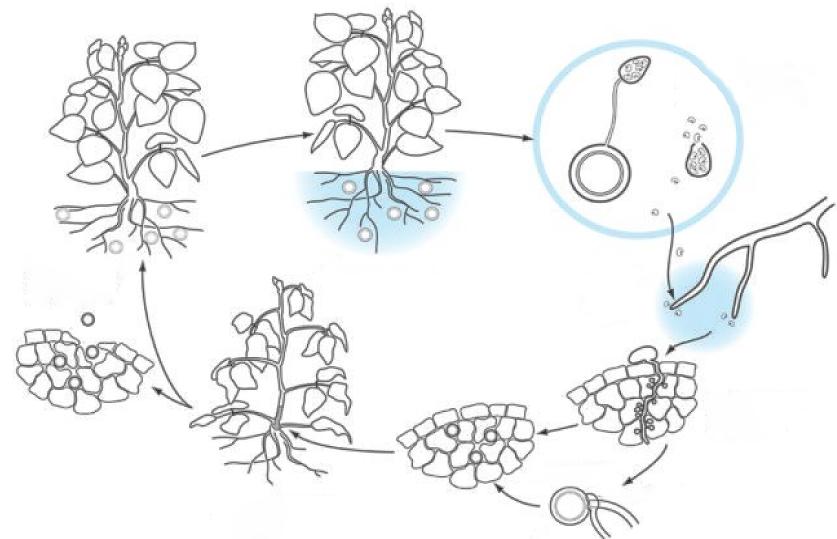
IGS: Intergenic spacer

Primers and probes

F. virguliforme intergenic spacer



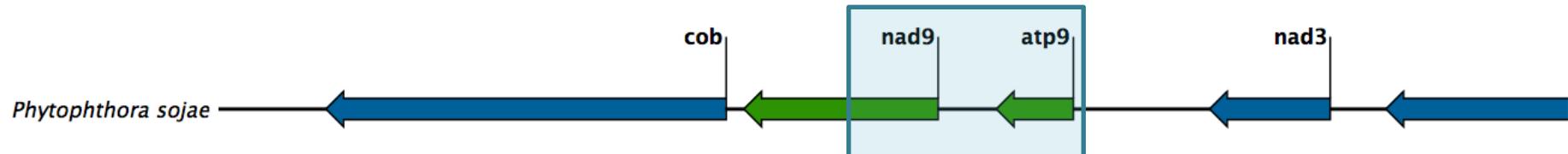
Names	Sequences (5'-3')
F6-3	GTAAGTGAGATTAGTCTAGGGTAGGTGACT
R6	GGGACCACCTACCCCTACACCTACT
FvPrb-3	6FAM-TTTGGTCTAGGGTAGGCCG-MGBNFQ



Phytophthora genus- and species-specific qPCR

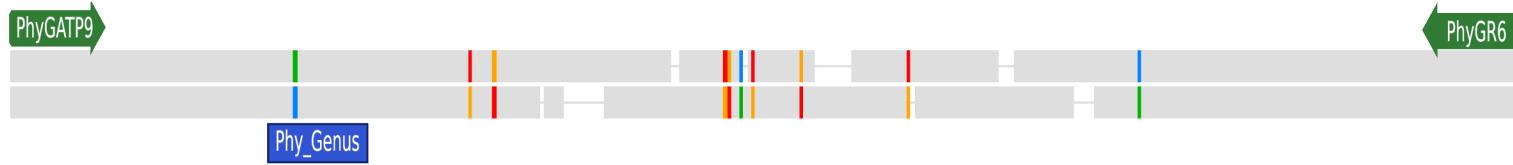
Diagnostic qPCR for *P. sojae* and *P. sansomeana*

- New marker system develop by Bilodeau et al. (2014)
 - Gene order
 - Intra- and inter-specific variability



Species-specific probe: *P. sojae* – *P. sansomeana*

- Genus specific

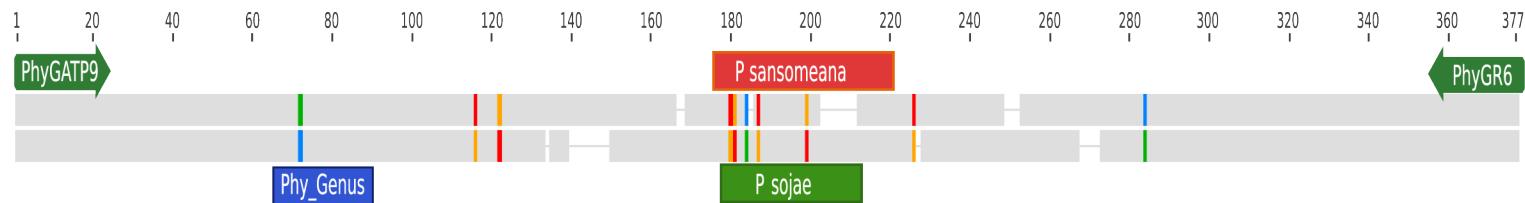


- Intraspecific variability
 - 67 different strains of *P. sojae*
 - 30 different strains of *P. sansomeana*



Diagnostic qPCR for *P. sojae* and *P. sansomeana*

- Multiplex qPCR for the detection of *Phytophthora* on soybean



- Internal control

