

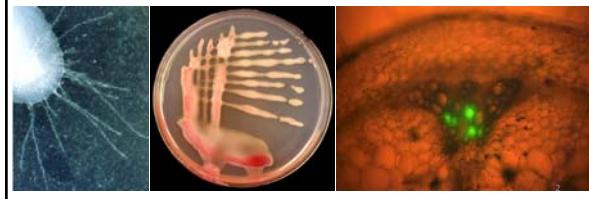
An update on *Ralstonia solanacearum* and Bacterial Wilt disease

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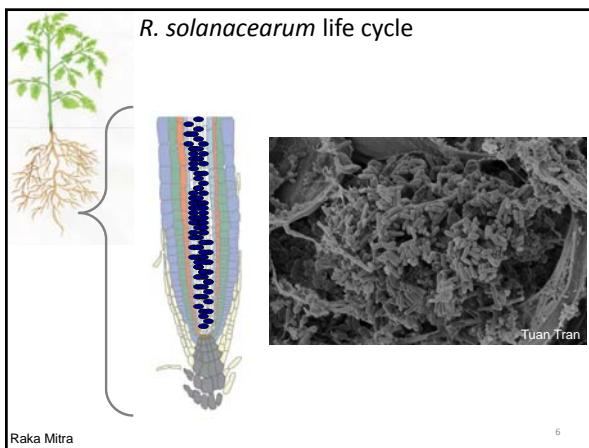
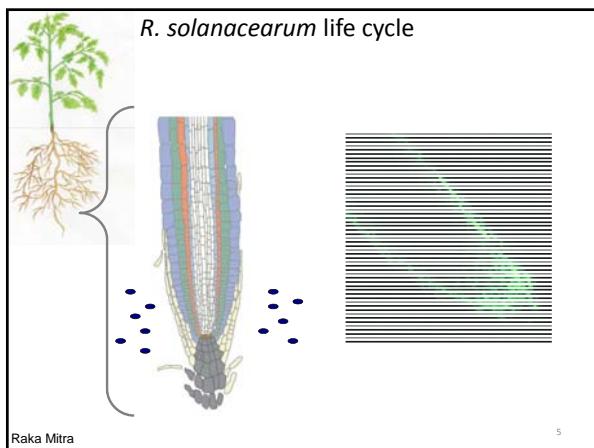
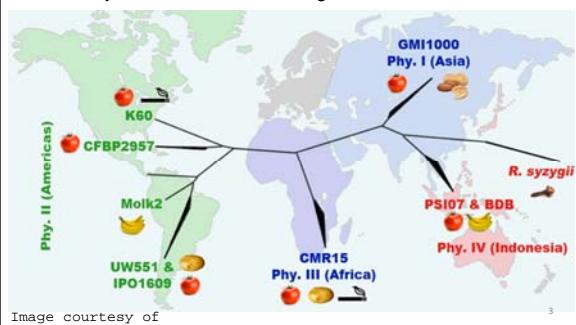
Ralstonia solanacearum

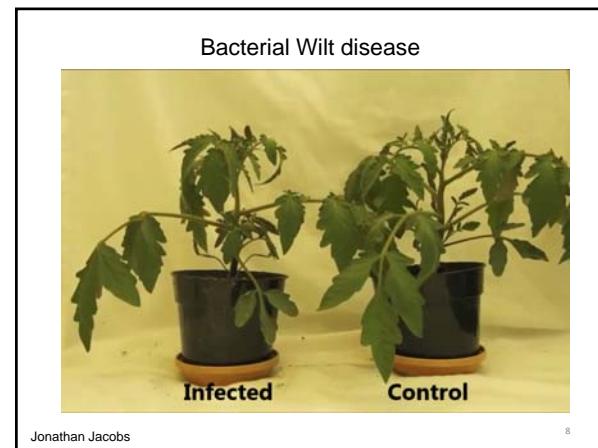
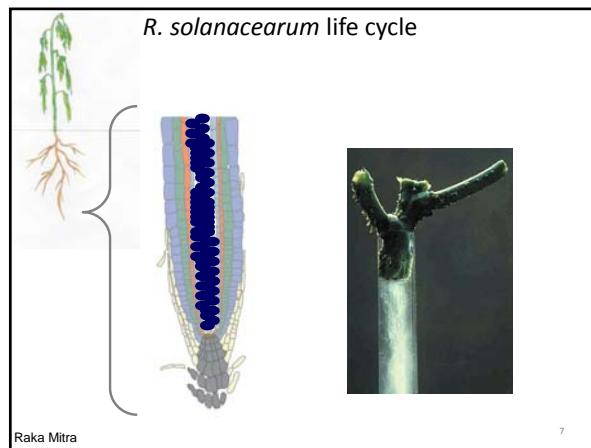
- Gram-negative
- β -proteobacterium
- Rod-shaped, xylem inhabiting
- Survive long-term in water, soil and infected plant materials



Ralstonia solanacearum

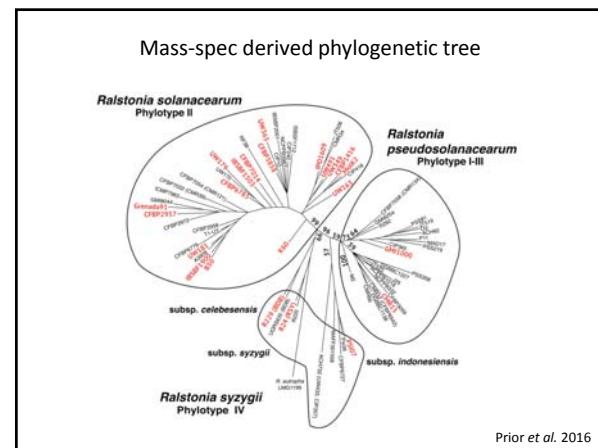
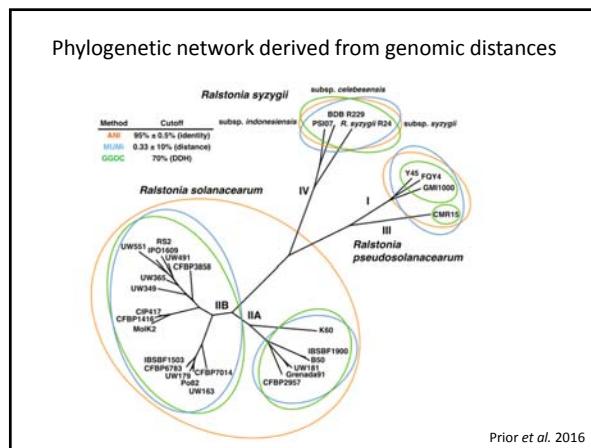
- Top 10 bacterial phytopathogens
- Widely distributed around the globe

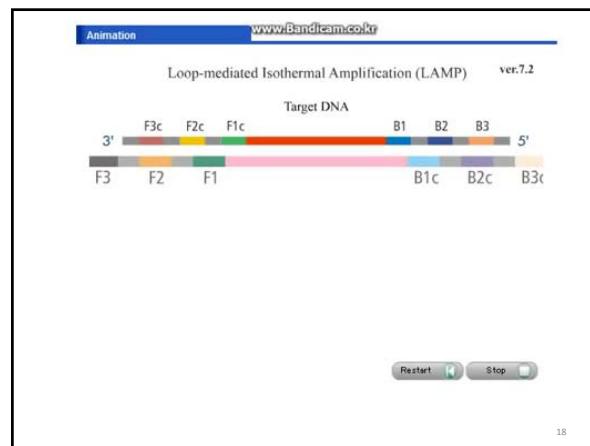
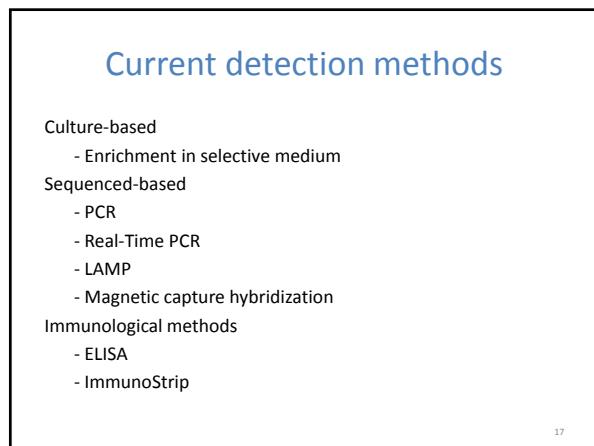
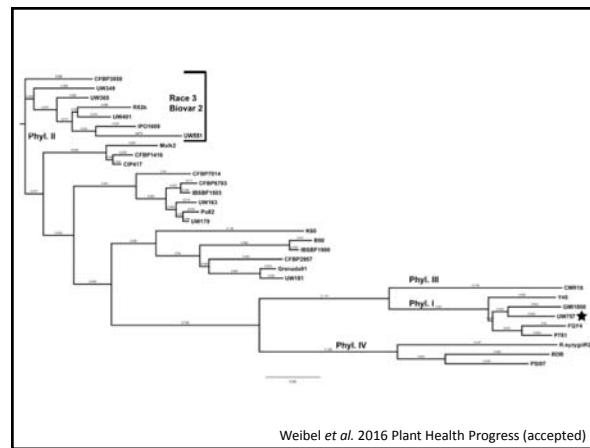
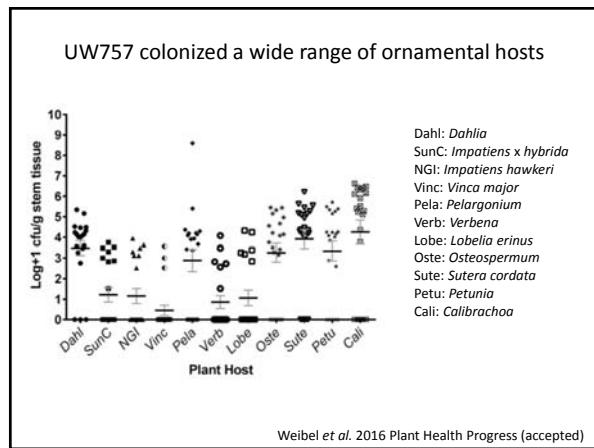
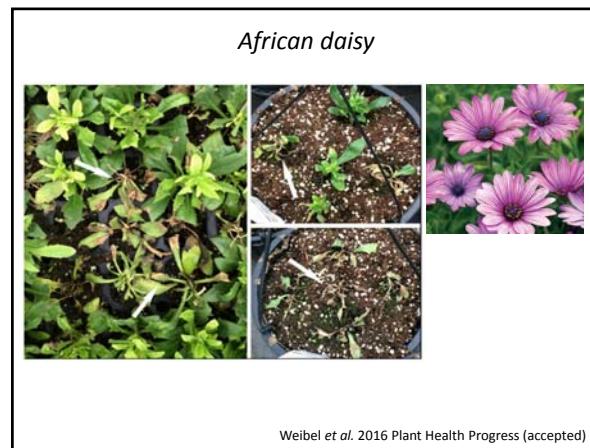
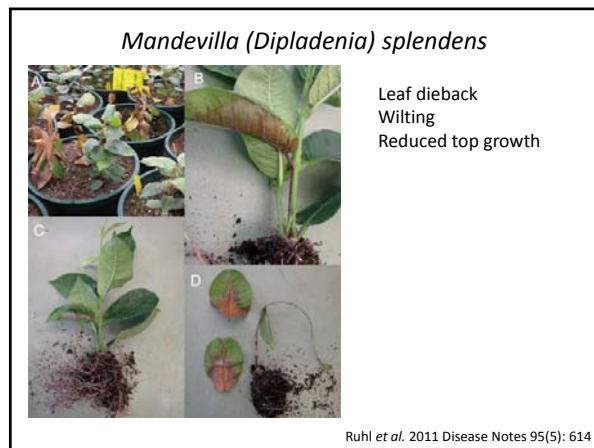


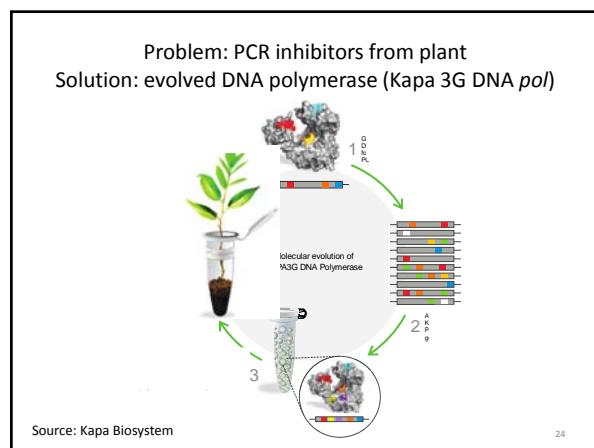
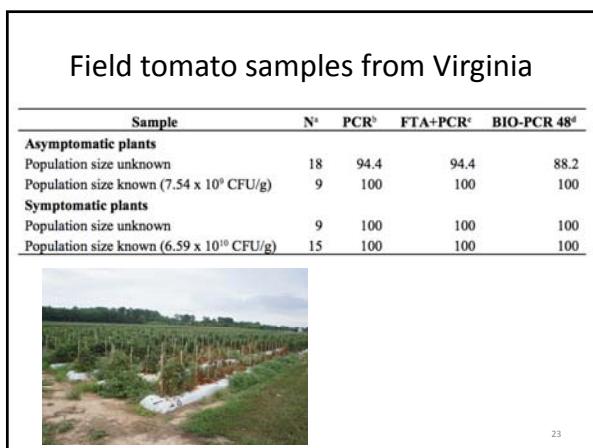
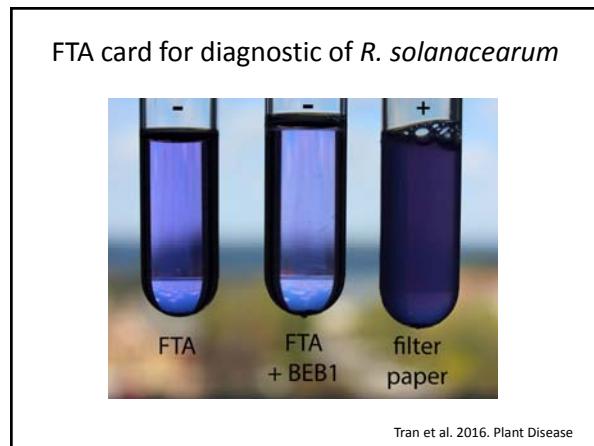
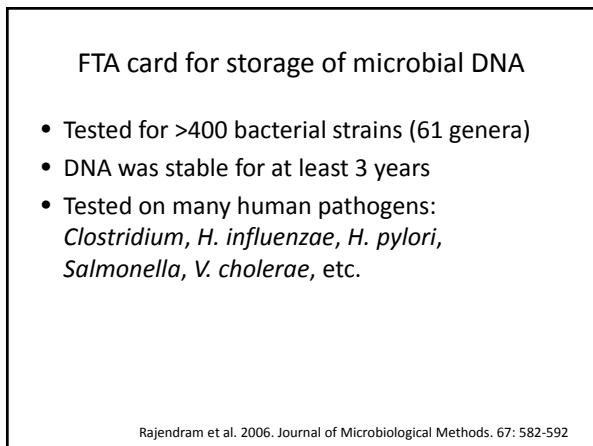
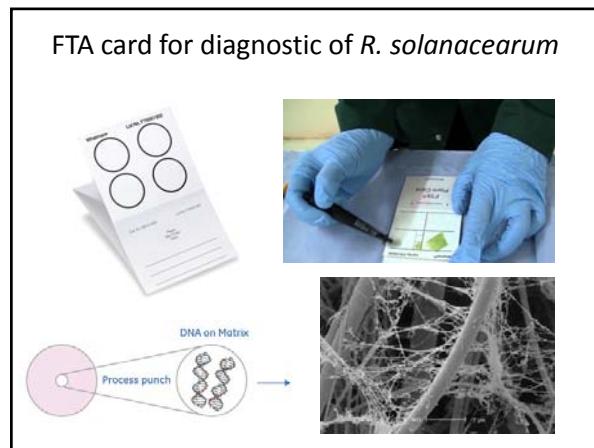
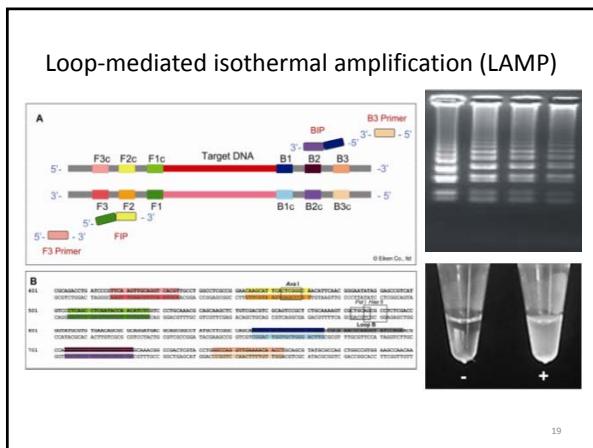


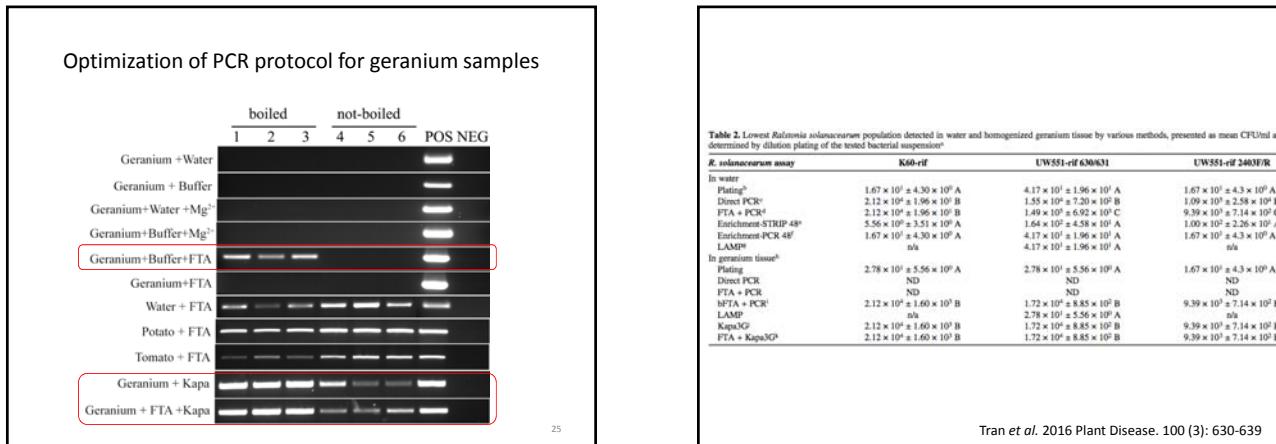
- ### Current classification systems
- Phylotype (sequence-based)
 - Race (host)
 - Biovar (carbon utilization)
 - Sequevar (sequence-based)

- ### Race 3 biovar 2
- A subgroup of *Ralstonia solanacearum*, R3bv2 is a select agent in the US (since 2002) and a quarantine pest in Europe and Canada.
 - New regulations from USDA-APHIS consider all *R. solanacearum* to be R3bv2 until proven not to be
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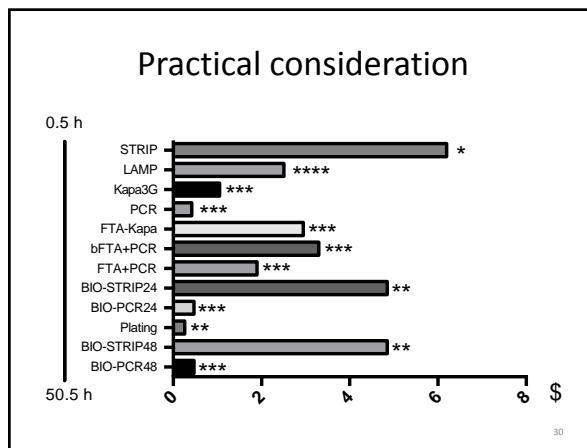
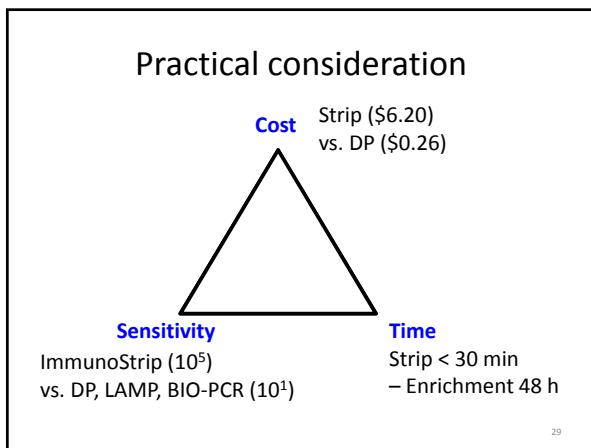
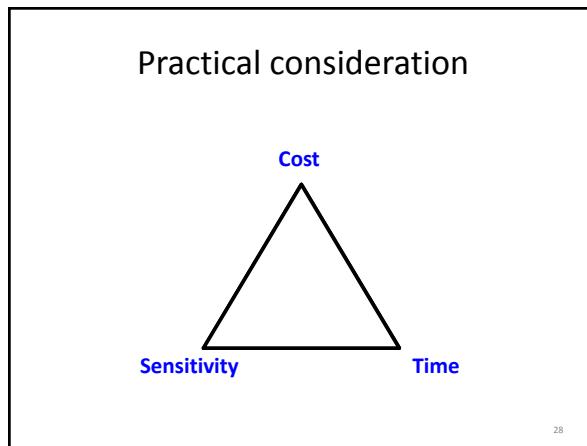
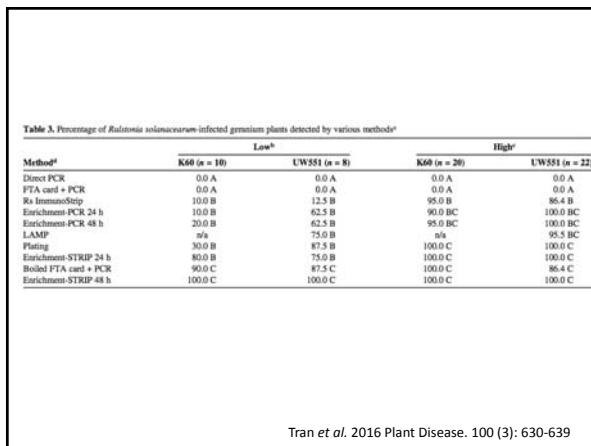




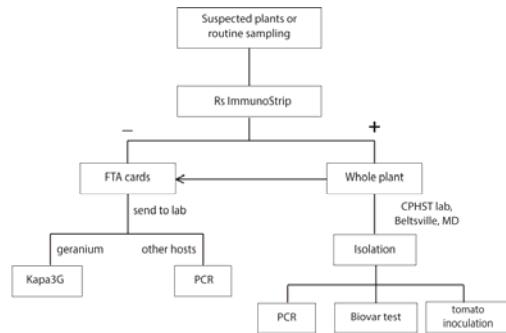


<i>R. solanacearum</i> assay		
	K60-rif	UW551-rif K30/K31
In water		
Plating ^b	$1.67 \times 10^1 \pm 4.30 \times 10^1$ A	$4.17 \times 10^1 \pm 1.96 \times 10^1$ A
Direct PCR ^c	$2.12 \times 10^1 \pm 1.96 \times 10^1$ B	$1.55 \times 10^1 \pm 7.20 \times 10^1$ B
FTA + PCR ^d	$2.12 \times 10^1 \pm 1.96 \times 10^1$ B	$1.49 \times 10^1 \pm 6.92 \times 10^1$ C
Enrichment-STRIP 48 ^e	$5.56 \times 10^1 \pm 3.51 \times 10^1$ A	$1.64 \times 10^1 \pm 4.58 \times 10^1$ A
Enrichment-PCR 48 ^f	$1.67 \times 10^1 \pm 4.30 \times 10^1$ A	$4.17 \times 10^1 \pm 1.96 \times 10^1$ A
LAMP ^g	n/a	$4.17 \times 10^1 \pm 1.96 \times 10^1$ A
In geranium tissue ^h		
Plating	$2.78 \times 10^1 \pm 5.56 \times 10^1$ A	$2.78 \times 10^1 \pm 5.56 \times 10^1$ A
Direct PCR	ND	ND
FTA + PCR	ND	ND
FTA + PCR ⁱ	$2.12 \times 10^1 \pm 1.60 \times 10^1$ B	$1.72 \times 10^1 \pm 8.85 \times 10^1$ B
LAMP	n/a	$2.78 \times 10^1 \pm 5.56 \times 10^1$ A
Kapa3G ^j	$2.12 \times 10^1 \pm 1.60 \times 10^1$ B	$1.72 \times 10^1 \pm 8.85 \times 10^1$ B
FTA + Kapa3G ^k	$2.12 \times 10^1 \pm 1.60 \times 10^1$ B	$1.72 \times 10^1 \pm 8.85 \times 10^1$ B

Tran et al. 2016 Plant Disease. 100 (3): 630-639



Propose pipeline for detection of *Rs*



Acknowledgement

The Allen Lab



USDA-Floral and Nursery Crops Research Initiative
Department of Plant Pathology – UW Madison and CALS
Vietnam Education Foundation

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