

Rose Rosette Disease  
Diagnostics: *Rose rosette virus*  
Primer Evaluations

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# Rose Rosette Disease Diagnostics

- Detection of the virus is typically limited to symptomatic plants
- Plants can be infected and asymptomatic for 18+ months
- Better RNA extraction and PCR detection protocols needed to detect the virus consistently in both symptomatic and asymptomatic plants

# Samples Tested

- 50 Samples from 4 Texas counties were tested
  - 37 Different Varieties were screened
  - All Samples had cT values of 21-29 with TPDDL standard protocol (RRV2)

# Extraction Method

- Modified Direct Antigen Capture RNA Extraction Method

# Reagents/Kits used

- Conventional PCR: Qiagen<sup>®</sup> One-Step Rt-PCR Kit
- Real Time PCR (qPCR): Taq-Man Fast Virus 1-Step Master Mix

# RRV Available Primers

Primer	RRV	RRV	RRV3/RRV4	RRV2	RRV_2.1/ RRV_2.2	RRV_3.2/ RRV3.5
Author	Laney	Di Bello	Bratsch	Dobhal	Binoy	Binoy
Yr. published	2011	2018	2017	2015	2016	2016
Segment targeted	1	3	3 / 4	3	2	3
PCR type	Conventional	Conventional	Conventional	Conventional /qPCR	qPCR	qPCR

# Best RRV Primer

- When combined with TPDDL Modified Direct Antigen Extraction, RRV (271 bp) is the most sensitive primer of the nine published RRV primers
- There is evidence that when using the given primer and extraction method that it is possible to detect RRV in asymptomatic plants