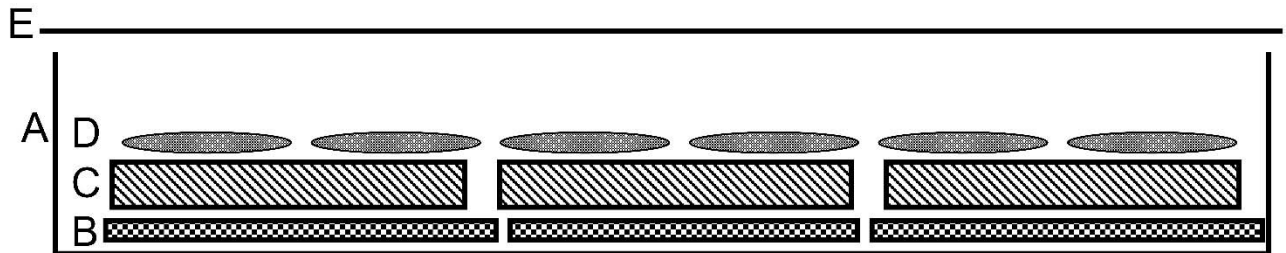
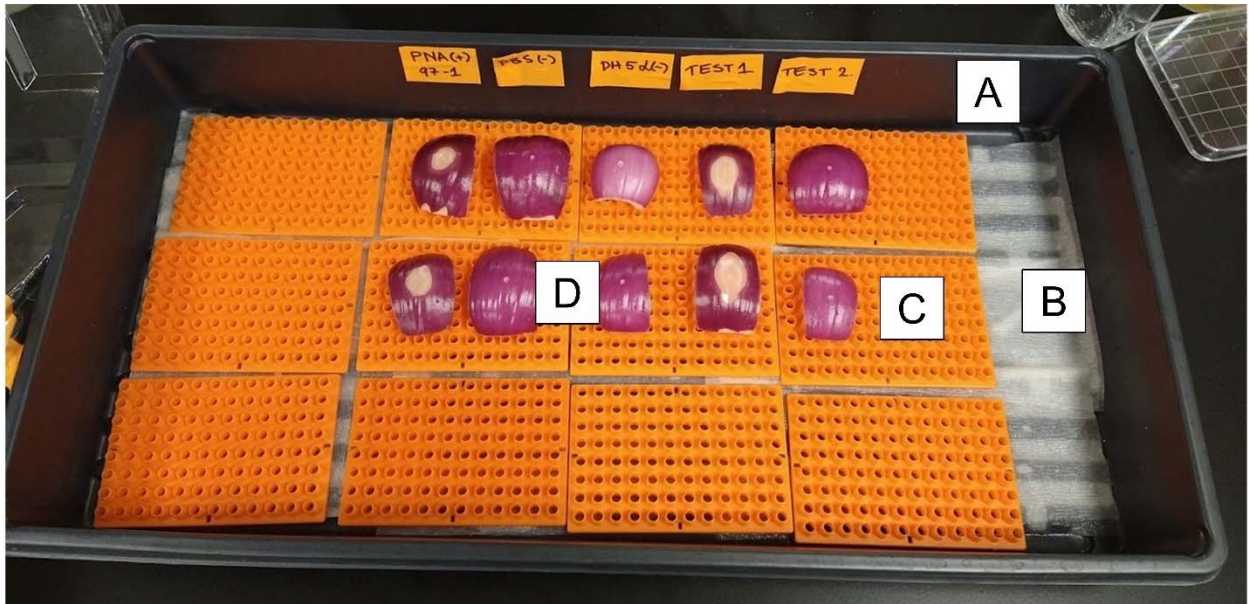
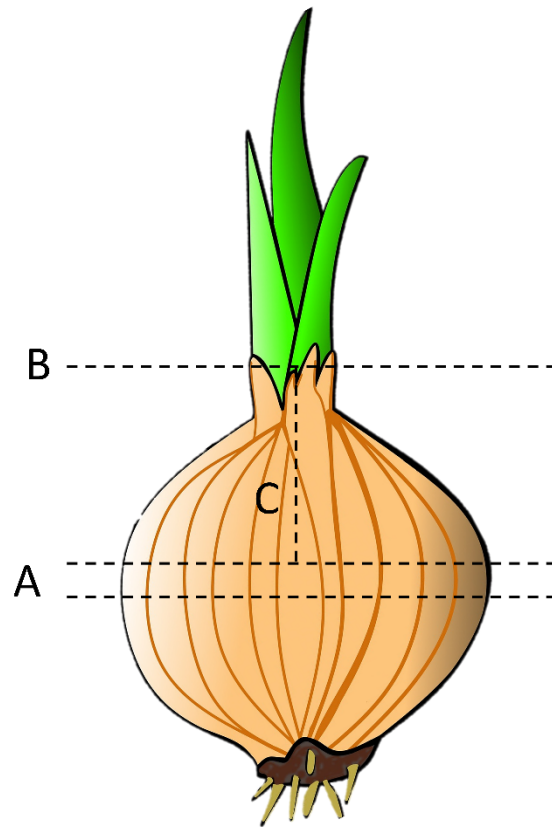


Supplementary Material



Supplementary Figure 1. High-throughput red scale necrosis assay. (Top) humid-chamber set-up for UGA-CPES assay. (Bottom) Graphical representation of humid-chamber set-up. (A) Plastic potting tray (27 × 52 cm) or plastic container (B) Pre-moistened paper towels (C) Plastic removable portion of 20 μ l pipette trays or similar to prevent direct contact between scales and paper towels (D) Bleach disinfested red onion scales (E) Plastic humidity dome or loose-fitting plastic cover. Detached red onion scales are disinfested, wounded, inoculated with a 10 μ L bacterial suspension, and assessed for the red scale necrosis phenotype (PNA 97-1, Test1) after 3 days.



Supplementary Figure 2. Dissection of onions in systemic onion pathogenicity assay. (A) Onions were cut twice transversely at the center of the onion to produce a 1.5 cm section of the center of the onion. (B) Foliage removed. (C) Remaining top portion of bulb cut longitudinally. See **Figure 3** for images of cut onions.

Supplementary Table 1. Strains tested for Red Scale Necrosis and virulence gene clusters (*alt* / HiVir primer assay).

Species	Strain	Source	Location [Country (State/Region) city/subregion]	Year	GenBank Accession	Publication	Red Scale Necrosis	HiVir2p F/R	alt1p F/R
<i>P. ananatis</i> ^A	PNA 97-1R ¹	onion	U.S.A. (Georgia) Toombs	1997	CP020943.2 - CP020945.2	Gitaitis & Gay 1997	1	1	1
<i>P. ananatis</i> ^A	PNA 99-7 ¹	onion	U.S.A. (Georgia) Tattnall	1999	NMZW00000000	Stice et al. 2018	0	0	0
<i>P. ananatis</i> ^A	PANS 99-23 ¹	yellow nutsedge	U.S.A. (Georgia) Terrell	1999	NMZS00000000	Stice et al. 2018	0	0	0
<i>P. ananatis</i> ^A	PANS 99-36 ¹	florida pusley	U.S.A. (Georgia) Tifton	1999	NMZT00000000	Stice et al. 2018	0	0	0
<i>P. ananatis</i> ^A	PANS 04-2 ¹	tobacco thrips	U.S.A. (Georgia) Toombs	2004	NMZV00000000	Stice et al. 2018	0	0	0
<i>P. ananatis</i> ^A	PNA 15-1 ¹	onion	U.S.A. (Georgia) Tattnall	2015	NMZZ00000000	Stice et al. 2018	1	1	1
<i>P. ananatis</i> ^A	PNA 200-3 ¹	onion	U.S.A. (Georgia) Tifton	2000	NMZX00000000	Stice et al. 2018	0	0	1
<i>P. ananatis</i> ^A	PANS 99-3 ¹	florida pusley	U.S.A. (Georgia) Tifton	1999	NMZR00000000	Stice et al. 2018	1	1	1
<i>P. ananatis</i> ^A	PANS 01-2 ¹	onion thrips	U.S.A. (Georgia) Tifton	2001	NMZU00000000	Stice et al. 2018	1	1	1
<i>P. ananatis</i> ^A	PNA 06-1 ¹	onion	U.S.A. (Georgia) Wayne	2006	NMZY00000000	Stice et al. 2018	1	1	1
<i>P. ananatis</i> ^A	PNA 200-7 ¹	onion	U.S.A. (Georgia) Tifton	2000	QGGN00000000	this paper	1	1	1
<i>P. ananatis</i> ^A	PNA 07-10 ¹	onion	U.S.A. (Georgia) Toombs	2007	QTTO00000000	this paper	1	1	1
<i>P. ananatis</i> ^A	PNA 02-18 ¹	slender onion	U.S.A. (Georgia) Tattnall	2002	RBXY00000000	Stice et al. 2020	1	1	0
<i>P. ananatis</i> ^A	PANS 200-1 ¹	amaranth	U.S.A. (Georgia) Lyons	2000	QTTV00000000	this paper	0	0	0
<i>P. ananatis</i> ^A	PNA 07-1 ¹	onion	U.S.A. (Georgia) Tifton	2007	QICU00000000	this paper	1	1	1
<i>P. ananatis</i> ^A	PANS 02-01 ¹	tobacco thrips	U.S.A. (Georgia) Tattnall	2002	QRDI01000000	this paper	0	0	0
<i>P. ananatis</i> ^A	PNA 86-1 ¹	peach	U.S.A. (Georgia) -	1986	QLSY00000000	this paper	0	0	0
<i>P. ananatis</i> ^A	PNA 98-11 ¹	onion	U.S.A. (Georgia) Evans	1998	QGTO00000000	this paper	0	0	0
<i>P. ananatis</i> ^A	PNA 14-1 ¹	onion	U.S.A. (Georgia) -	2014	QEKS00000000	this paper	0	0	1
<i>P. ananatis</i> ^A	PNA 11-1 ¹	onion	U.S.A. (Georgia) Lyons	2011	QGTK00000000	this paper	0	0	0
<i>P. allii</i> ^A	PNA 200-10 ¹	onion	U.S.A. (Georgia) -	2000	QGHF00000000	this paper	0	0	0
<i>P. agglomerans</i> ^A	PNG 97-1 ¹	onion	U.S.A. (Georgia) -	1997	SOSD00000000	this paper	0	0	0
<i>P. agglomerans</i> ^A	PNG 92-11 ¹	onion	U.S.A. (Georgia) -	1992	QGHE00000000	this paper	0	0	1
<i>P. stewartii</i> subsp. <i>indologens</i> ^A	PNA 14-12 ¹	onion	U.S.A. (Georgia) Vidalia	2014	SOAJ00000000	Stumpf et al. 2017	0	0	0
<i>P. stewartii</i> subsp. <i>indologens</i> ^A	PNA 03-3 ¹	onion	U.S.A. (Georgia) Toombs	2003	QICO00000000	Stumpf et al. 2017	1	1	1
<i>P. ananatis</i> ^B	PANS 1-5 ¹	tobacco thrips	U.S.A (Georgia) Tifton	2001	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PNA 18-5S ¹	onion	U.S.A (Georgia) Vidalia	2018	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PANS 1-6 ¹	thrips from thrips from	U.S.A (Georgia) Tifton	2001	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PANS 2-5 ¹	peanut	U.S.A (Georgia) Tifton	2002	-	this paper	1	1	0
<i>P. ananatis</i> ^B	PNA 18-7S ¹	onion	U.S.A (Georgia) Tifton	2018	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PNA 18-1 ¹	onion	U.S.A (Georgia) Tifton	2018	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PNA 6-1 ¹	onion	U.S.A (Georgia) Wayne	2006	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PNA 99-2 ¹	onion	U.S.A (Georgia) Tattnall	1999	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PNA 7-10 ¹	onion	U.S.A (Georgia) Toombs	2007	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PNA 18-9S ¹	onion thrips from	U.S.A (Georgia) Vidalia	2018	-	this paper	1	0	1
<i>P. ananatis</i> ^B	PANS 2-6 ¹	peanut	U.S.A (Georgia) Tifton	2002	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PNA 7-1 ¹	onion	U.S.A (Georgia) Tattnall	2007	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PANS 99-33 ¹	florida pusley	U.S.A (Georgia) Coffee	1999	-	this paper	1	1	0
<i>P. ananatis</i> ^B	PANS 99-25 ¹	bristly starbur	U.S.A (Georgia) Vidalia	1999	-	this paper	1	1	0

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<i>P. ananatis</i> ^B	PNA 18-2 ¹	onion	U.S.A (Georgia) Tifton	2018	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PNA 03-2 ¹	onion	U.S.A (Georgia) Tifton	2003	-	this paper	0	0	1
<i>P. ananatis</i> ^B	PANS 99-32 ¹	florida pusley	U.S.A (Georgia) Vidalia U.S.A (Georgia)	1999	-	this paper	0	1	0
<i>P. ananatis</i> ^B	PNA 98-3 ¹	onion	Dougherty	1998	-	this paper	0	0	0
<i>P. ananatis</i> ^B	PNA 13-1 ¹	onion	U.S.A (Georgia) Lyons	2013	-	this paper	0	0	0
<i>P. ananatis</i> ^B	PNA 14-2 ¹	onion	-	2014	-	this paper	0	0	0
<i>P. ananatis</i> ^B	PNA 15-3 ¹	onion	U.S.A (Georgia) Tattnall	2015	-	this paper	0	0	0
<i>P. ananatis</i> ^B	PNA 18-10 ¹	onion	U.S.A (Georgia) Vidalia	2018	-	this paper	0	0	1
<i>P. ananatis</i> ^B	PNA 18-6S ¹	onion	U.S.A (Georgia) Vidalia	2018	-	this paper	0	0	1
<i>P. ananatis</i> ^B	PNA 18-8S ¹	onion	U.S.A (Georgia) Vidalia	2018	-	this paper	0	0	1
<i>P. ananatis</i> ^B	PNA 200-1 ¹	onion	U.S.A (Georgia) Toombs	2000	-	this paper	0	0	1
<i>P. ananatis</i> ^B	PNA 200-8 ¹	onion	U.S.A (Georgia) Tifton	2000	-	this paper	0	0	1
<i>P. ananatis</i> ^B	PANS 99-5 ¹	prairie verbena	U.S.A (Georgia) Tifton	1999	-	this paper	0	0	0
<i>P. ananatis</i> ^B	PANS 99-4 ¹	florida pusley	U.S.A (Georgia) Tifton	1999	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PANS 200-2 ¹	pink purslane	U.S.A (Georgia) Tifton	2000	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PANS 99-29 ¹	crab grass thrips from peanut	U.S.A (Georgia) Tifton	1999	-	this paper	1	1	0
<i>P. ananatis</i> ^B	PANS 2-7 ¹	peanut	U.S.A (Georgia) Tifton	2002	-	this paper	1	1	0
<i>P. ananatis</i> ^B	PNA 18-5 ¹	onion	U.S.A (Georgia) Vidalia	2018	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PNA 99-14 ¹	onion thrips from	U.S.A (Georgia) Tattnall	1999	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PANS 1-2 ¹	onion	U.S.A (Georgia) Tifton	2001	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PNA 99-9 ¹	onion	U.S.A (Georgia) Tattnall	1999	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PNA 18-3S ¹	onion thrips from	U.S.A (Georgia) Vidalia	2018	-	this paper	1	1	0
<i>P. ananatis</i> ^B	PANS 2-8 ¹	peanut	U.S.A (Georgia) Tifton	2002	-	this paper	1	1	0
<i>P. ananatis</i> ^B	PANS 99-11 ¹	crab grass	U.S.A (Georgia) Tifton	1999	-	this paper	1	1	0
<i>P. ananatis</i> ^B	PNA 97-3 ¹	onion	-	1997	-	this paper	1	1	1
<i>P. ananatis</i> ^B	PANS 99-09 ¹	prairie verbena	U.S.A (Georgia) Tifton	1999	-	this paper	0	1	1
<i>P. ananatis</i> ^B	PNA 98-7 ¹	onion thrips feces	U.S.A (Georgia) Tifton	1998	-	this paper	0	1	0
<i>P. ananatis</i> ^B	PANS 01-10 ¹	from peanut	U.S.A (Georgia) Tifton	2001	-	this paper	0	0	0
<i>P. ananatis</i> ^B	PANS 99-22 ¹	crab grass	U.S.A (Georgia) Tifton	1999	-	this paper	0	0	0
<i>P. ananatis</i> ^B	PANS 99-26 ¹	hyssop spurge	U.S.A (Georgia) Vidalia	1999	-	this paper	0	0	0
<i>P. ananatis</i> ^B	PANS 01-8 ¹	tobacco thrips thrips feces	U.S.A (Georgia) Tifton	2001	-	this paper	0	0	0
<i>P. ananatis</i> ^B	PANS 01-09 ¹	from peanut	U.S.A (Georgia) Tifton	2001	-	this paper	0	0	0
<i>P. ananatis</i> ^B	PNA 18-10S ¹	onion	U.S.A.(Georgia) Vidalia	2018	-	this paper	0	0	0
<i>P. ananatis</i> ^B	PNA 07-13 ¹	onion	-	2007	-	this paper	0	1	0
<i>P. ananatis</i> ^B	PNA 07-14 ¹	onion	-	2007	-	this paper	0	1	0
<i>P. ananatis</i> ^C	PNA 98-2 ^{II}	onion	U.S.A. (Georgia) - U.S.A. (California)	1998	-	-	1	1	1
<i>P. stewartii</i> subsp. <i>indologenes</i> ^C	0696-21 ^{II}	sudangrass	Imperial Valley	1996	-	Azad et al. 2000	0	0	0
<i>P. ananatis</i> ^D	LMG 2676 ^{II}	stem rust	U.S.A (-) -	1954	FJ611846	Pon et al. 1954	0	0	0
<i>P. ananatis</i>	LMG 2667 ^{II} ATCC 35400 ^{II}	pineapple	U.S.A. (Hawaii) -	1958	-	-	0	1	0
<i>P. ananatis</i>		honey melons	Ecuador (-) -	1981	-	Wells et al. 1986	0	0	0
<i>P. ananatis</i> ^C	Q12 ^{II}	onion	South Africa (-) -	-	-	-	0	0	1
<i>P. stewartii</i> subsp. <i>indologenes</i> ^D	LMG 2631 ^{II}	pearl millet	India (-) -	1961	KF482585	-	0	0	0
<i>P. ananatis</i> ^D	Uruguay 37 ^{II}	eucalyptus	Uruguay (-) -	2004	-	-	1	1	0

<i>P. ananatis</i> ^D	BD 315 ^{II}	onion	U.S.A. (Georgia) -	-	AY579212	Goszczynska et al. 2007	1	1	1
<i>P. ananatis</i>	ICMP 10132 ^{II}	sugar cane	Brazil (-) -	1991	-	-	0	0	0
<i>P. allii</i> ^D	BD 309 ^{II}	onion	U.S.A. (-) -	1994	AY579210	Goszczynska et al. 2011	0	0	1
<i>P. allii</i> ^D	BD 377 ^{II}	onion	South Africa (-) -	2004	DQ512491	Goszczynska et al. 2011	0	0	1
<i>P. ananatis</i> ^D	BD 577 ^{II}	maize	(Mpumalanga) -	2004	DQ133547	Goszczynska et al. 2007	0	0	0
<i>P. stewartii</i> subsp. <i>indologenes</i> ^D	LC31 ^{II}	eucalyptus	South Africa (Mpumalanga) -	2006	-	-	0	0	0
<i>P. ananatis</i> ^D	LC 3 ^{II}	eucalyptus	South Africa (Mpumalanga) -	2006	-	-	1	1	0
<i>Pantoea</i> sp. ^E	3095 ^{II}	-	U.S.A. (-) -	2015	-	-	0	0	0
<i>P. ananatis</i> ^D	BD 251 ^{II}	onion	South Africa (-) -	2002	-	-	1	1	1
<i>P. ananatis</i> ^D	BD 297 ^{II}	onion	South Africa (-) -	2002	-	-	0	0	0
<i>P. ananatis</i> ^D	BD 330 ^{II}	onion	South Africa (-) -	2002	-	-	0	0	1
<i>P. allii</i> ^D	BD 391 ^{II}	onion	South Africa (-) -	2003	-	-	0	0	1
<i>P. ananatis</i> ^D	BD 491 ^{II}	maize	South Africa (-) -	2005	-	-	1	1	0
<i>P. ananatis</i> ^D	BD 570 ^{II}	maize	South Africa (-) -	2005	-	-	0	0	0
<i>P. ananatis</i> ^D	BD 647 ^{II}	maize	South Africa (-) -	2005	DQ195525	Goszczynska et al. 2007	1	1	1
<i>P. ananatis</i> ^D	SUPP2113 ^{II}	rice	Japan (-) -	2004	-	Kido et al. 2010	1	1	0
<i>P. ananatis</i> ^D	MBB 35+ ^{II}	eucalyptus	South Africa (KwaZulu- Natal) Mtunzini	-	-	-	0	0	0
<i>P. dispersa</i> ^D	TMA 7 ^{II}	eucalyptus	Thailand (-) -	-	-	-	0	0	0
<i>P. ananatis</i>	LMG 20104 ^{II}	eucalyptus	South Africa (KwaZulu- Natal) Harding	2001	-	Coutinho et al. 2002	0	0	0
<i>P. ananatis</i>	0197-28 ^{II}	sudangrass	U.S.A. (California) Imperial Valley	1996	-	Azad et al. 2000	0	0	0
<i>P. ananatis</i>	LMG 2666 ^{II}	pineapple	U.S.A. (Hawaii) -	1957	-	-	1	1	0
<i>P. ananatis</i> ^C	CTB1135 ^{II}	rice	Japan (Chūgoku) Tottori	1995	-	Kido et al. 2008	1	0	0
<i>P. ananatis</i>	LMG 2101 ^{II}	rice	India (-) -	2001	-	-	0	0	0
<i>P. ananatis</i> ^D	DAR76141 ^{II}	rice	Australia (New South Wales) Whitton	2004	-	Cother et al. 2004	1	1	0
<i>P. agglomerans</i> ^D	LMG 2596 ^{II}	onion	South Africa (Western Cape) Little Karoo	1977	EF988816	Hattingh & Walters 1981	1	0	1
<i>P. ananatis</i> ^D	BD 301 ^{II}	onion	U.S.A. (Georgia) Tifton	-	AY579209	Goszczynska et al. 2006	1	1	1
<i>P. ananatis</i> ^D	BD 315 ^{II}	onion	U.S.A. (Georgia) -	-	AY579212	Goszczynska et al. 2006	1	1	1
<i>P. ananatis</i> ^D	BD 435 ^{II}	maize	South Africa (Mpumalanga) -	2004	AY898642	Goszczynska et al. 2007	0	0	0
<i>P. ananatis</i> ^D	BD 543	maize	South Africa (Northwest)	2004	DQ133545	Goszczynska et al. 2007	0	0	0
<i>P. ananatis</i> ^D	BD 561 ^{II}	maize	South Africa (Northwest)	2004	DQ133546	Goszczynska et al. 2007	0	0	0
<i>P. ananatis</i> ^D	BD 588 ^{II}	maize	South Africa (Mpumalanga) -	2004	DQ133548	Goszczynska et al. 2007	1	1	0
<i>P. ananatis</i> ^D	BD 647 ^{II}	maize	South Africa (Mpumalanga) -	2004	DQ195525	Goszczynska et al. 2007	1	1	0
<i>P. allii</i> ^D	BD 304 ^{II}	onion	South Africa (-) -	2002	-	-	0	1	0
<i>P. ananatis</i> ^D	BD 546 ^{II}	maize	South Africa (-) -	2005	-	-	1	1	0
<i>P. vagans</i> ^C	LMG 24196 ^{II}	eucalyptus	Argentina (-) -	-	EF988758	Brady et al. 2009	1	0	0
<i>P. dispersa</i> ^D	TMA 3 ^{II}	eucalyptus	Thailand (-) -	-	-	-	0	0	0
<i>P. ananatis</i> ^C	Mmir 7+ ^{II}	capsid bug	South Africa (-) -	-	-	-	0	0	0
<i>P. ananatis</i> ^C	Mmir 8+ ^{II}	capsid bug	South Africa (-) -	-	-	-	0	0	0
<i>P. ananatis</i> ^C	Mmir 10+ ^{II}	capsid bug	South Africa (-) -	-	-	-	1	1	0
<i>P. eucalypti</i> ^A	LMG 24197 ^T ^{II}	eucalyptus	Uruguay (-) -	-	VHJB00000000	Brady et al. 2009	0	0	0
<i>P. eucalypti</i> ^D	LMG 24198 ^{II}	eucalyptus	Uruguay (-) -	-	EF988763	Brady et al. 2009	0	0	0
<i>P. vagans</i> ^C	BCC0079 ^{II}	eucalyptus	Uruguay (-) -	-	-	Brady et al. 2008	0	0	0

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<i>P. ananatis</i> ^C	BCC0083 ^{II}	onion	U.S.A. (-) -	-	-	Brady et al. 2007	1	1	1
<i>P. vagans</i> ^A	LMG 24199 ^{T,II}	eucalyptus	Uganda (-) -	-	CP038853 - CP038855	Brady et al. 2008	0	0	0
<i>P. deleyi</i> ^A	LMG 24200 ^{T,II}	eucalyptus	Uganda (-) -	-	MIPO00000000	Brady et al. 2008	0	0	0
<i>P. stewartii</i> subsp. <i>indologenes</i> ^C	BCC0118 ^{II}	eucalyptus	South Africa (KwaZulu-Natal) Futululu	-	-	Brady et al. 2008	0	0	0
<i>P. stewartii</i> subsp. <i>indologenes</i> ^E	MKB 0035 ^{II}	eucalyptus	South Africa (KwaZulu-Natal) Futululu	-	-	-	0	0	0
<i>P. stewartii</i> subsp. <i>indologenes</i> ^C	LMG 2671 ^{II}	pineapple	U.S.A. (Hawaii) -	1948	EF988826	Brady et al. 2008	0	0	0
<i>P. agglomerans</i> ^C	LMG 1286 ^{II}	human wound	Zimbabwe (-) -	1956	NR_116751	Rezzonico et al. 2009	0	0	0
<i>P. stewartii</i> subsp. <i>indologenes</i> ^A	LMG 2632 ^{T,II}	foxtail millet	India (-) -	1960	JPKO00000000	Brady et al. 2008	0	0	0
<i>P. agglomerans</i>	BD 176 ^{II}	onion	South Africa (-) -	-	-	-	0	0	0
<i>P. agglomerans</i>	BD 109 ^{II}	onion	South Africa (-) -	-	-	-	0	0	1
<i>P. ananatis</i> ^D	LMG 2680 ^{II}	stem rust	Hungary (-) -	1956	-	Mergaert et al. 1993	0	0	0
<i>P. ananatis</i> ^D	LMG 2807 ^{II}	orchid	Brazil (-) -	1965	-	Gehring et al. 2014	1	0	0
<i>P. dispersa</i> ^C	LMG 2604 ^{II}	wild rose	Netherlands (-) -	1969	EF988819	Brady et al. 2008	0	0	0
<i>P. agglomerans</i> ^C	LMG 2660 ^{II}	japanese wistaria	Japan (-) -	1970	Z96083	Hauben et al. 1998	0	0	0
<i>P. dispersa</i> ^C	LMG 2749 ^{II}	human wound	- (-) -	1979	EF988833	Brady et al. 2008	0	0	0
<i>P. agglomerans</i> ^C	LMG 2565 ^{II}	oat	Canada (-) -	1979	Z96082	Hauben et al. 1998	0	0	0
<i>P. agglomerans</i>	LMG 2570 ^{II}	mountain-ash	U.S.A. (-) -	1980	-	Buttimer et al. 2017	0	0	0
<i>P. dispersa</i> ^C	LMG 2603 ^{T,II}	soil	Japan (-) -	1979	NR_043883	Chang et al. 2018	0	0	0
<i>P. stewartii</i> subsp. <i>stewartia</i> ^C	LMG 2715 ^{T,II}	maize	U.S.A. (-) -	-	Z96080	Hauben et al. 1998	0	0	0
<i>P. agglomerans</i> ^E	Uruguay 41 ^{II}	eucalyptus	Uruguay (-) -	2004	-	-	0	0	0
<i>P. ananatis</i> ^D	BD 335 ^{II}	onion	South Africa (-) -	-	-	-	0	0	1
<i>P. agglomerans</i> pv. <i>gypsophilae</i>	LMG 2553 ^{II}	baby's-breath	U.S.A.	1946	EF988810	Brady et al. 2008	0	0	0
<i>P. allii</i> ^A	LMG 24248 ^{T,II}	onion	South Africa (-) -	2004	MLFE00000000	Brady et al. 2011	0	0	1
<i>P. ananatis</i> ^A	BD 442 ^{II}	maize	South Africa (Mpumalanga) -	2004	JMJL00000000	Goszczynska et al. 2007	0	0	0
<i>P. ananatis</i>	BD 640 ^{II}	maize	South Africa (Mpumalanga) -	2004	DQ195524	Goszczynska et al. 2007	0	0	0
<i>P. wallisii</i> ^A	LMG 26277 ^{T,II}	eucalyptus	South Africa (White River) -	2006	MLFS00000000	Brady et al. 2012	0	0	0
<i>P. eucalypti</i>	LC53 ^{II}	eucalyptus	South Africa (White River) -	2006	-	-	0	0	0
<i>P. agglomerans</i> ^C	LMG 2941 ^{II}	crab apple	- (-) -	1979	FJ611837	Rezzonico et al. 2009	0	0	0
<i>P. anthophila</i> ^D	LMG 2558 ^{T,II}	garden balsam	India (-) -	1981	VHIZ00000000	Brady et al. 2009	0	0	0
<i>P. agglomerans</i> pv. <i>betae</i> ^C	PAB4188 ^{II}	beet	U.S.A. (New York) Geneva	-	-	Burr et al. 1991	0	0	0
<i>P. dispersa</i> ^D	LMG 2605 ^{II}	cowpea	Tanzania (-) -	1965	FJ611866	Rezzonico et al. 2009	0	0	0
<i>P. agglomerans</i> ^D	LMG 2554 ^{II}	runner bean	U.K. (-) -	1981	EF988811	Brady et al. 2008	0	0	0
<i>P. agglomerans</i> ^D	LMG 2572 ^{II}	wheat	Canada (-) -	-	EF988815	Brady et al. 2008	0	0	0
<i>P. eucalypti</i> ^D	Uruguay 17 ^{II}	eucalyptus	Uruguay (-) -	2004	-	-	0	0	0
<i>P. eucalypti</i> ^D	31b g ^{II}	eucalyptus	Uruguay (-) -	2004	-	-	0	0	0
<i>P. agglomerans</i> ^D	NCCP222 ^{II}	soil	Pakistan (-) -	2010	-	-	0	0	0
<i>P. agglomerans</i> ^D	NCCP222 ^{II}	soil	Pakistan (-) -	2010	-	-	0	0	0
<i>P. rodasii</i> ^D	BD943 ^{II}	eucalyptus	Colombia (-) -	2005	MLFP00000000	Brady et al. 2012	0	0	0
<i>P. wallisii</i> ^D	BD946 ^{II}	eucalyptus	South Africa (-) -	2006	MLFS00000000	Brady et al. 2012	0	0	0
<i>P. rwandensis</i> ^D	BD944 ^{II}	eucalyptus	Rwanda (-) -	2005	MLFR00000000	Brady et al. 2012	0	0	0
<i>P. beijingensis</i> ^D	BCC1348 ^{II}	oyster mushroom	China (-) -	2014	JMEE00000000	Liu et al. 2013	0	0	0

<i>P. beijingensis</i> ^D	BCC1349 ^{II}	oyster mushroom	China (-) -	2014	KC846071	Liu et al. 2013	0	0	0
<i>P. pleuroti</i> ^D	BCC1352 ^{II}	oyster mushroom	China (-) -	2014	KJ654341	Ma et al. 2016	0	0	0
<i>P. pleuroti</i> ^D	BCC1353 ^{II}	oyster mushroom	China (-) -	2014	KJ654341	Ma et al. 2016	0	0	0
<i>P. ananatis</i> ^A	AJ13355 ^{II}	soil	Japan (-) -	-	NC_017531 - NC_017533	Hara et al. 2012	0	0	0
<i>P. eucalypti</i> ^D	BD 300 ^{II}	onion	South Africa (-) -	2002	-	-	0	0	1
<i>P. ananatis</i> ^D	BD 307 ^{II}	onion	South Africa (-) -	2002	-	-	0	0	1
<i>P. agglomerans</i> ^D	BD 378 ^{II}	onion	South Africa (-) -	2003	-	-	0	0	1
<i>P. allii</i> ^D	BD 379 ^{II}	onion	South Africa (-) -	2003	-	-	0	0	1
<i>P. allii</i> ^D	BD 380 ^{II}	onion	South Africa (-) -	2003	GU458415	Goszczynska et al. 2011	1	0	1
<i>P. allii</i> ^D	BD 381 ^{II}	onion	South Africa (-) -	2003	GU458416	Goszczynska et al. 2011	1	0	1
<i>P. allii</i> ^D	BD 382 ^{II}	onion	South Africa (-) -	2003	-	-	1	0	0
<i>P. allii</i> ^D	BD 383 ^{II}	onion	South Africa (-) -	2003	GU458417	Goszczynska et al. 2011	1	0	1
<i>P. allii</i> ^D	BD 384 ^{II}	onion	South Africa (-) -	2003	-	-	1	0	1
<i>P. allii</i> ^D	BD 385 ^{II}	onion	South Africa (-) -	2003	-	-	1	0	1
<i>P. allii</i> ^D	BD 386 ^{II}	onion	South Africa (-) -	2003	-	-	1	0	1
<i>P. allii</i> ^D	BD 387 ^{II}	onion	South Africa (-) -	2003	-	-	1	0	1
<i>P. allii</i> ^D	BD 388 ^{II}	onion	South Africa (-) -	2003	-	-	1	0	1
<i>P. allii</i> ^D	BD 389 ^{II}	onion	South Africa (-) -	2003	-	-	1	0	1
<i>P. conspicua</i> ^D	BD 479 ^{II}	maize	South Africa (-) -	2005	-	-	0	1	0
<i>P. anthophila</i> ^D	BD 589 ^{II}	maize	South Africa (-) -	2005	-	-	0	0	0
<i>P. anthophila</i> ^D	BD 590 ^{II}	maize	South Africa (-) -	2005	-	-	0	0	0
<i>P. eucrina</i> ^D	BD 591 ^{II}	maize	South Africa (-) -	2005	-	-	0	0	0
<i>P. eucrina</i> ^D	BD 592 ^{II}	maize	South Africa (-) -	2005	-	-	0	0	0
<i>P. stewartii</i> ^D	BD 641 ^{II}	maize	South Africa (-) -	2005	-	-	0	0	0
<i>P. anthophila</i> ^D	BD 644 ^{II}	maize	South Africa (-) -	2005	-	-	0	0	0
<i>P. anthophila</i> ^D	BD 645 ^{II}	maize	South Africa (-) -	2005	-	-	0	0	0
<i>P. agglomerans</i> ^D	BD 653 ^{II}	maize	South Africa (-) -	2005	-	-	0	0	0
<i>P. eucrina</i> ^D	BD 680 ^{II}	watermelon	South Africa (-) -	2005	-	-	0	0	0
<i>P. agglomerans</i> ^D	BD 689 ^{II}	onion	South Africa (-) -	2005	-	-	0	0	1
<i>Pantoea</i> sp. ^D	YR343 ^{II}	eastern cottonwood	- (-) -	2012	AKIT00000000	Brown et al. 2012	0	0	0
<i>P. ananatis</i> ^D	ICMP10132 ^{II}	maize	Brazil (-) -	1989	-	-	0	0	0
<i>P. stewartii</i> subsp. <i>indologenes</i> ^D	ICMP 12183 ^{II}	maize	Brazil (-) -	1991	-	-	0	0	0
<i>P. vagans</i> ^D	MP7 ^{II}	termites	South Africa (-) -	2012	JPKP00000000	Palmer et al. 2016	0	0	0
<i>P. agglomerans</i> ^D	MAI 6000 ^{III}	onion	Uruguay (Canelones) -	2015			0	0	1
<i>P. agglomerans</i> ^D	MAI 6001 ^{III}	onion	Uruguay (Canelones) -	2015			0	0	1
<i>P. agglomerans</i> ^D	MAI 6002 ^{III}	onion	Uruguay (Canelones) -	2015			0	0	1
<i>P. eucalypti</i> ^D	MAI 6003 ^{III}	onion	Uruguay (Canelones) -	2015			0	0	0
<i>P. allii</i> ^D	MAI 6004 ^{III}	onion	Uruguay (Canelones) -	2018			0	0	1
<i>P. agglomerans</i> ^D	MAI 6005 ^{III}	onion	Uruguay (Canelones) -	2018			0	0	1
<i>P. allii</i> ^D	MAI 6006 ^{III}	onion	Uruguay (Canelones) -	2018			0	0	1
<i>P. allii</i> ^D	MAI 6007 ^{III}	onion	Uruguay (Canelones) -	2018			0	0	0
<i>P. eucalypti</i> ^D	MAI 6008 ^{III}	onion	Uruguay (Canelones) -	2018			0	0	0
<i>P. eucalypti</i> ^D	MAI 6009 ^{III}	onion	Uruguay (Canelones) -	2018			0	0	1
<i>P. agglomerans</i> ^D	MAI 6010 ^{III}	onion	Uruguay (Canelones) -	2018			0	0	1

Supplementary Material

<i>P. eucalypti</i> ^D	MAI 6011 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. agglomerans</i> ^D	MAI 6012 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6013 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6014 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6015 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6016 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. agglomerans</i> ^D	MAI 6017 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. agglomerans</i> ^D	MAI 6018 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6019 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>Pantoea</i> sp. ^D	MAI 6020 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6021 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	0
<i>P. allii</i> ^D	MAI 6022 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. agglomerans</i> ^D	MAI 6023 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6024 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. agglomerans</i>	MAI 6025 ^{III}	onion	Uruguay (Canelones) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6026 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6027 ^{III}	onion	Uruguay (Salto) -	2018	0	0	0
<i>P. eucalypti</i> ^D	MAI 6028 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6029 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6030 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6031 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. ananatis</i> ^D	MAI 6032 ^{III}	onion	Uruguay (Salto) -	2018	1	1	1
<i>P. eucalypti</i> ^D	MAI 6033 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6034 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6035 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6036 ^{III}	onion	Uruguay (Salto) -	2018	1	0	1
<i>P. eucalypti</i> ^D	MAI 6037 ^{III}	onion	Uruguay (Salto) -	2018	0	0	0
<i>P. eucalypti</i> ^D	MAI 6038 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. ananatis</i> ^D	MAI 6039 ^{III}	onion	Uruguay (Salto) -	2018	1	1	1
<i>P. eucalypti</i> ^D	MAI 6040 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6041 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6042 ^{III}	onion	Uruguay (Salto) -	2018	0	0	1
<i>P. eucalypti</i> ^D	MAI 6043 ^{III}	onion	Uruguay (Salto) -	2019	0	0	0
<i>P. eucalypti</i> ^D	MAI 6044 ^{III}	onion	Uruguay (Salto) -	2019	0	0	1
<i>P. agglomerans</i> ^D	MAI 6045 ^{III}	onion	Uruguay (Salto) -	2019	1	0	1
<i>P. eucalypti</i> ^D	MAI 6046 ^{III}	onion	Uruguay (Salto) -	2019	0	0	1
<i>P. eucalypti</i> ^D	MAI 6047 ^{III}	onion	Uruguay (Salto) -	2019	0	0	1
<i>P. eucalypti</i> ^D	MAI 6048 ^{III}	onion	Uruguay (Salto) -	2019	0	0	0
<i>Pantoea</i> sp. ^D	MAI 6049 ^{III}	onion	Uruguay (Salto) -	2019	0	0	1
<i>P. vagans</i> ^D	MAI 6050 ^{III}	onion	Uruguay (Salto) -	2019	0	0	0
<i>P. eucalypti</i> ^D	MAI 6051 ^{III}	onion	Uruguay (Salto) -	2019	0	0	1
<i>P. eucalypti</i> ^D	MAI 6052 ^{III}	onion	Uruguay (Salto) -	2019	0	0	1
<i>Pantoea</i> sp. ^D	MAI 6053 ^{III}	onion	Uruguay (Salto) -	2019	0	0	1

Sequence identification method: ^A Whole genome sequencing (WGS), ^B Species specific primers, ^C Amplified fragment length polymorphism (AFLP), ^D Multi Locus Sequence Analysis (MLSA), ^E 16S

rRNA gene sequence. Bacterial culture collection: ^IUGA-CPES, ^{II} UP-BCC, ^{III} UR-MAI. RSN = Red scale necrosis ([1] clearly defined lesion created by bacteria on detached red onion scale 3 DPI; [0] no lesion created by bacteria 3 DPI). HiVir2p_F/R = High Virulence cluster PCR assay result ([1] obvious visible amplicon 857 bp; [0] no visible amplicon or not interpretable). alt1p_F/R = allicin tolerance cluster PCR assay result ([1] obvious visible amplicon 414 bp; [0] no visible amplicon or not interpretable)

Supplementary Table 2. Z-proportional test comparing group totals from Table 2. *Pnan* = *Pantoea ananatis*, *Pn* spp. = *Pantoea* spp. Onion = bacteria originally isolated from diseased onion tissue. Non-onion = bacteria isolate from any sources other than diseased onion tissue. RSN = Red scale necrosis (+ clearly defined lesion created by bacteria on detached red onion scale 3 DPI; – no lesion created by bacteria 3 DPI). *alt* = allicin tolerance cluster PCR assay result (+ obvious visible amplicon 414bp; - no visible amplicon or not interpretable).

Comparison	Z-proportions test			
	RSN+ <i>alt</i> +	RSN- <i>alt</i> +	RSN+ <i>alt</i> -	RSN- <i>alt</i> -
<i>Pnan</i> onion vs. <i>Pnan</i> non-onion	Z=4.062, P<0.00001	Z=3.103, P = 0.0019	Z=-3.55, P=0.00038	Z=0.416, P=0.68
<i>Pn</i> spp onion vs. <i>Pn</i> spp non-onion	Z=3.345, P=0.0008	Z=7.244, P<0.00001	Z=-0.18, P=0.86	Z=-8.93, P<0.00001
<i>Pnan</i> onion vs. <i>Pn</i> spp onion	Z=4.103, P<0.00001)	Z=-4.67, P<0.00001	Z=0.96, P=0.34	Z=0.74, P=0.46
<i>Pnan</i> non-onion vs. <i>Pn</i> spp non-onion	Z=3.193, P=0.0014	Z=-0.066, P=0.94	Z=4.24, P<0.00001	Z=-5.41, P<0.00001
<i>Pnan</i> onion vs. <i>Pn</i> spp non-onion	Z=6.32, P < 0.00001	Z= 2.98, P < 0.003	Z=0.73, P =0.47	Z=-7.74 P<0.00001
<i>Pnan</i> non-onion vs. <i>Pn</i> spp onion	Z=-0.2, P =0.84	Z=-7.45, P<0.0001	Z=4.81, P<0.00001	Z=4.19, P<0.00001