



Figure S1. Agarose-gel electrophoresis of PpIRV1_4018 dsRNA RT-PCR products. M: 1kb ladder; I-VI: RT-PCR amplicons obtained by primer walking.

Table S1. *Phytophthora pluvialis* isolates used for virus genome characterisation in this study. All *P. pluvialis* isolates were sourced from Scion (Rotorua, New Zealand).

Isolate	Cluster ¹	Geographical location	Host
NZFS 3000	NZ2	Gisborne	<i>Pinus radiata</i>
NZFS 3046	NZ1	Northland	<i>Pinus radiata</i>
NZFS 3052	NZ1	Northland	<i>Pinus radiata</i>
NZFS 3132	NZ1	Coromandel	<i>Pinus radiata</i>
NZFS 3440	NZ1	Taupo	<i>Pinus radiata</i>
NZFS 3447	NZ1	Nelson	<i>Pinus radiata</i>
NZFS 3564	NZ1	Hawke's Bay	<i>Pinus radiata</i>
NZFS 3608	NZ1	Northland	<i>Pinus radiata</i>
NZFS 3619	NZ1	Nelson	<i>Pinus radiata</i>
NZFS 3632	NZ2	Bay of Plenty/Wanganui	<i>Pinus radiata</i>
NZFS 3635	NZ1	Nelson	<i>Pinus radiata</i>
NZFS 3880	NZ2	Wairarapa	<i>Pseudotsuga menziesii</i>
NZFS 3894	NZ1	Northland	<i>Pinus radiata</i>
NZFS 3990	NZ1	Auckland	<i>Pinus radiata</i>
NZFS 3998	NZ2	Coromandel	<i>Pinus radiata</i>
NZFS 4014	NZ2	Gisborne	<i>Pinus radiata</i>
NZFS 4015	NZ2*	Gisborne	<i>Pinus radiata</i>
NZFS 4016	NZ2	Gisborne	<i>Pinus radiata</i>
NZFS 4017	NZ2*	Gisborne	<i>Pinus radiata</i>
NZFS 4018	NZ2	Gisborne	<i>Pinus radiata</i>
NZFS 4019	NZ2	Gisborne	<i>Pinus radiata</i>
NZFS 4021	NZ1	Northland	<i>Pinus radiata</i>
NZFS 4293	NZ1	Taranaki	<i>Pinus radiata</i>

¹ The cluster nomenclature was according to Tibima et al. (2021).

*Isolate classification was based on the virus phylogenetic analysis referred to in **Figure 3**.

Table S2. A list of primers used for *Phytophthora pluvialis* RNA virus 1 (PplRV1) dsRNA sequencing and PplRV1 detection and diagnostics.

Primer name	Sequence (5' – 3')	Position (nt)	Purpose
SEQ31 ¹	CCATCGTCTTGGCCTATG	31-48	Sequencing primer, detection primer
SEQ997 ¹	GATTCGTCTCGATGTCCC	1,014-997	Sequencing primer
SEQ718 ¹	CGCGACAGAGTTTTTACG	718-735	Sequencing primer
SEQ1566 ¹	GGTCTTCGATACGACACG	1,583-1,566	Sequencing primer
SEQ903 ¹	GTGGTTGGACACACCCCG	903-920	Sequencing primer
SEQ1980 ¹	TACCAGAAAGCCTCAGC	1,996-1,980	Sequencing primer
SEQ1561 ¹	CTAACCGTGTCGTATCG	1,561-1,577	Sequencing primer
SEQ2786 ¹	CCATGCCGAACCTGGATAC	2,803-2,786	Sequencing primer
SEQ1702 ²	CGCTAATGGGCTAGACAC	1,702-1,719	Sequencing primer
SEQ3147 ²	GGGCGATCAGAGTGAATC	3,147-3,130	Sequencing primer
SEQ2679 ¹	CCTCATCTCATCGCTCCACC	2,679-2,698	Sequencing primer
SEQ3504 ¹	GCCATGGGTAGAACTGG	3,520-3,504	Sequencing primer
SEQ3018 ¹	AACTTCGTGAGCCACG	3,018-3,034	Sequencing primer
SEQ4120 ¹	GTGTACCCATGAACGCCCTC	4,139-4,120	Sequencing primer
SEQ4029 ¹	GTGCCTTTCCTGTGAGTC	4,029-4,046	Sequencing primer
SEQ5136 ¹	AGCCAGCATGATGAACTG	5,153-5,136	Sequencing primer
SEQ4664 ²	TGCATACTGACCCAACACTG	4,683-4,664	Sequencing primer
SEQ5210 ¹	CCACGGTTTAGGTATCCAGC	5,210-5,229	Sequencing primer
SEQ5877 ¹	TACAGAGTGACATGTCCTGC	5,895-5,877	Sequencing primer
SEQ4269 ²	CCAACATACGCGCGGGCG	4,269-4,286	Sequencing primer
SEQ4961 ²	ACCATCCGACTCAGCATTTTC	4,980-4,961	Sequencing primer
SEQ4606 ²	TGATTACGCAACCCAACC	4,606-4,623	Sequencing primer
SEQ5928 ²	ATTCAAACCGGGTCCACCTC	5,947-5,928	Sequencing primer
SEQ5495 ²	ATCGTCGATTACCGTGGTCG	5,495-5,514	Sequencing primer

SEQ6663 ²	CAATGACCCGTACAGTCG	6,680-6,663	Sequencing primer, detection primer
RACE1	GATGGCAGCAGTAGTGTA	457-440	5'RACE primer
RACE2	CACTACTCGGACTGTTTC	542-525	5'RACE primer
RACE3	TCTCCAGGAGCACACCGGGC	219-200	5'RACE primer
RACE4	CGTGTGCTATGCTCATAC	5,454-5,437	5'RACE primer
RACE5	TGTTAGTGATGGGTCTGG	5,594-5,577	5'RACE primer
RACE6	GCAAGTGTGCAGACGCGGCG	5,873-5,854	5'RACE primer
PpIRV1_qPCR_F1	GAACCCGAAACAGTCCGAGT	434-453	Diagnostic primer
PpIRV1_qPCR_R1	AGAACCCACCGAAGTTAGCG	596-577	Diagnostic primer
PpIRV1_probe1 ⁵	TGCTGCCATCCTCGTTTTCTTCGCG	533-557	Diagnostic probe
PpIRV1_qPCR_F2	GCTCGGTTGTCGGTTTTTCC	4,186-4,205	Diagnostic primer
PpIRV1_qPCR_R2	AGACCACATTTGCGAGCGTA	4,328-4,309	Diagnostic primer
PpIRV1_qPCR_F3	GATACCCGGACAGGCTGATG	5,366-5,385	Diagnostic primer
PpIRV1_qPCR_R3	CGACCACGGTAATCGACGAT	5,527-5,508	Diagnostic primer
^{3,4} PhyG-F2	CGTGGAATCATAATCCT	7,524-7,541	Diagnostic primer
^{3,4} PhyG-Rb	CAGATTATGAGCCTGATAAG	7,745-7,726	Diagnostic primer
^{3,4} TrnM_PhyG_probe2 ⁶	ATRTTGTAGGTTCAARTCCTAYCATCAT	7,543-7,570	Diagnostic probe
^{3,4} PhyP_ATP9_F1	AGTAAGTATTTACGTATCCA	28,465-28,484	Diagnostic primer
^{3,4} PhyP_ATP9_R1	GAAATCCTTCTTTACAACAAG	28,654-28,634	Diagnostic primer

¹Primer was used for NZ1 PpIRV1 dsRNA sequencing. Primer position is given relative to the reference PpIRV1_4018.

²Primer was used for NZ2 PpIRV1 dsRNA sequencing. Primer position is given relative to the reference PpIRV1_3052.

³Primers and probe are originated from Bilobeau et al. (2014).

⁴Primer position is given relative to the reference NZFS3000 *P. pluvialis* mitogenome.

⁵The probe was labeled with the fluorescent dye FAM.

⁶The probe was labeled with the fluorescent dye Quasar 705.

Table S3. The optimized reaction of RT-qPCR for *Phytophthora pluvialis* RNA virus 1 detection. The RT-qPCR targets both virus and host sequences in a single reaction. Details of primers and probes are listed in **Table S2**.

Component		Volume per 20 µL reaction
iTaQ Universal Probes rxn Mix (2×)		10 µL
iScript Reverse Transcriptase		0.5 µL
Virus	10 µM PplRV1_qPCR_F1	0.8 µL (400 nM)
	10 µM PplRV1_qPCR_F1	0.8 µL (400 nM)
	10 µM PplRV1_probe1	0.5 µL (250 nM)
Host	10 µM PhyG-F2	1 µL (500 nM)
	10 µM PhyG-Rb	1 µL (500 nM)
	10 µM TrnM_PhyG_probe2	0.5 µL (250 nM)
Nuclease-free H ₂ O		2.9 µL
RNA template		2 µL

Table S4. A panel of *Phytophthora/Nothophytophthora* isolates used for the virus screen, including 25 *Phytophthora pluvialis* isolates, nine other *Phytophthora* species/isolates and one *Nothophytophthora* species. NZFS isolates were sourced from Scion (Rotorua, New Zealand). International Collection of Microorganisms from Plants (ICMP) isolates were sourced from Manaaki Whenua – Landcare Research (Auckland, New Zealand).

Isolate	Species	Geographical location	Host
ICMP 19002	<i>P. multivora</i>	Auckland	<i>Sophora</i> spp.
ICMP 21309	<i>P. amnicola</i> × <i>chlamydospora</i>	Auckland	Unknown
ICMP 21668	<i>P. cryptogea</i>	South Canterbury	<i>Hebe</i> spp.
ICMP 21670	<i>P. cryptogea</i>	Auckland	<i>Agathis australis</i>
ICMP 21671	<i>P. multivora</i>	Bay of Plenty	<i>Araucaria heterophylla</i>
NZFS 119.03	<i>P. cactorum</i>	Bay of Plenty	<i>Meryta sinclaririi</i>
NZFS 3859	<i>P. cactorum</i>	Bay of Plenty	<i>Diospyros</i> sp.
NZFS 3003	<i>P. pluvialis</i>	Rangitikei	<i>Pinus radiata</i>
NZFS 3092	<i>P. pluvialis</i>	Waikato	<i>Pinus radiata</i>
NZFS 3565	<i>P. pluvialis</i>	Hawke's Bay	<i>Pinus radiata</i>
NZFS 3612	<i>P. pluvialis</i>	Hawke's Bay	<i>Pinus radiata</i>
NZFS 3618	<i>P. pluvialis</i>	Wellington	<i>Pinus radiata</i>
NZFS 3620	<i>P. pluvialis</i>	Rangitikei	<i>Pinus radiata</i>
NZFS 3689	<i>P. pluvialis</i>	Wanganui	<i>Pinus radiata</i>
NZFS 3690	<i>P. pluvialis</i>	Rangitikei	<i>Pinus radiata</i>
NZFS 3697	<i>P. pluvialis</i>	Gisborne	<i>Pseudotsuga menziesii</i>
NZFS 3701	<i>P. pluvialis</i>	Hawke's Bay	<i>Pseudotsuga menziesii</i>
NZFS 3859	<i>P. cactorum</i>	Bay of Plenty	<i>Diospyros</i> sp.
NZFS 3881	<i>P. pluvialis</i>	Wairarapa	<i>Pseudotsuga menziesii</i>

NZFS 3882	<i>P. pluvialis</i>	Wairarapa	<i>Pseudotsuga menziesii</i>
NZFS 3896	<i>P. pluvialis</i>	Wellington	<i>Pinus radiata</i>
NZFS 3897	<i>P. pluvialis</i>	Wellington	<i>Pinus radiata</i>
NZFS 3963	<i>P. pluvialis</i>	Nelson	<i>Pseudotsuga menziesii</i>
NZFS 3987	<i>P. pluvialis</i>	Bay of Plenty	<i>Pinus radiata</i>
NZFS 3993	<i>P. pluvialis</i>	Nelson	<i>Pseudotsuga menziesii</i>
NZFS 4001	<i>P. pluvialis</i>	Nelson	<i>Pseudotsuga menziesii</i>
NZFS 4002	<i>P. pluvialis</i>	Nelson	<i>Pseudotsuga menziesii</i>
NZFS 4020	<i>P. pluvialis</i>	Bay of Plenty	<i>Pinus radiata</i>
NZFS 4034	<i>P. pluvialis</i>	Nelson	<i>Pinus radiata</i>
NZFS 4045	<i>P. pluvialis</i>	Taupo	<i>Pinus radiata</i>
NZFS 4171	<i>P. pluvialis</i>	Taupo	<i>Pinus radiata</i>
NZFS 4273	<i>P. pluvialis</i>	Taupo	<i>Pinus radiata</i>
NZFS 4293	<i>P. pluvialis</i>	Taranaki	<i>Pinus radiata</i>
NZFS 4311	<i>P. amnicola</i> × <i>chlamydospora</i>	Bay of Plenty	Unknown
NZFS 4487	<i>Nothophytophthora</i> sp.	Unknown	Unknown
NZFS 4591	<i>P. amnicola</i> × <i>themophila</i>	Northland	<i>Pinus radiata</i>