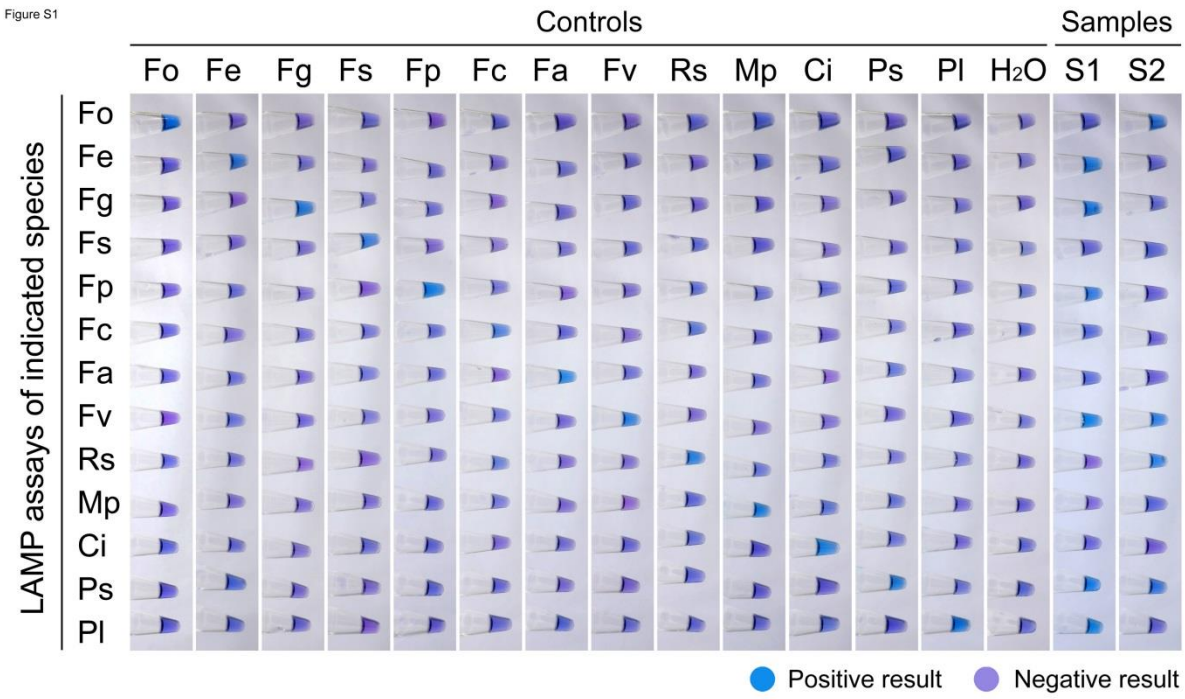
SUPPLEMENTARY INFORMATION



Appendix A. Results of loop-mediated isothermal amplification (LAMP) assays. DNA was analysed using 13 LAMP assays. Results shown in the 14 columns on the left (controls) were obtained using either DNA of the indicated species or sterile ultra-pure water as templates. The 15th and 16th columns represent assay results for samples S7-07 (S1) and J7-13 (S2). Sky-blue colour indicates a positive result; purple indicates a negative result.

Appendix B. Information of the 13 LAMP assays used in this study

Target species (abbreviation)	Target gene[a]	Sensitivity	Publication
Phytophthora sojae (Ps)	*A3apro*	10 pg·μl^{-1}	(Dai et al., 2012)
Fusarium oxysporum (Fo)	*Cyp51c*	100 pg·μl^{-1}	(Zeng et al., 2016)
F. equiseti (Fe)	*Cyp51c*	100 pg·μl^{-1}	(Zeng et al., 2016)
F. graminearum (Fg)	*Cyp51c*	100 pg·μl^{-1}	(Lu et al., 2015b)
F. virguliforme (Fs)	*Tef-1α*	100 pg·μl^{-1}	(Lu, 2015)
F. proliferatum (Fp)	*Red1*	400 pg·μl^{-1}	(Rong et al., 2018)
F. culmorum (Fc)	*Cyp51c*	100 pg·μl^{-1}	(Zeng et al., 2017)
F. sambucinum (Fa)	*Tef-1α*	100 pg·μl^{-1}	(Xu *et al.*, 2018)
F. verticillioides (Fv)	*Pgk*	100 pg·μl^{-1}	(Zeng et al., 2018)
Rhizoctonia solani (Rs)	*ITS*	10 pg·μl^{-1}	(Lu et al., 2015a)
Macrophomina phaseolina (Mp)	*ITS*	100 pg·μl^{-1}	(Lu et al., 2015a)
Calonectria ilicicola (Ci)	*β-tublin*	10 pg·μl^{-1}	(Lu, 2015)
Phomopsis longicolla (Pl)	*Tef-1α*	100 pg·μl^{-1}	(Dai et al., 2016)

[a]*A3aPro* is a 300-bp transposon-like element initially identified in the promoter region of the *P. sojae* avirulence gene *Avr3a*; *Red1* encodes a reductase; *Pgk* encodes a 3-phosphoglycerate kinase; *Rpb1* encodes the large subunit of RNA polymerase II.

Reference

Dai, T., Lu, C., Lu, J., Dong, S., Ye, W., Wang, Y., *et al.* (2012) Development of a loop-mediated isothermal amplification assay for detection of *Phytophthora sojae*. *Fems Microbiology Letters*, 334, 27-34.

Dai, T., Shen, H. and Zheng, X. (2016) Establishment and evaluation of a *TEF1-alpha* based loop-mediated isothermal amplification assay for detection of *Phomopsis longicolla*. *Australasian Plant Pathology*, 45, 335-337.

Lu, C. (2015) Rapid diagnosis of soybean root diseases based on Loop-mediated isothermal amplification (LAMP). Nanjing: Nanjing Agricultural University.

Lu, C., Song, B., Zhang, H., Wang, Y. and Zheng, X. (2015a) Rapid diagnosis of soybean seedling blight caused by *Rhizoctonia solani* and soybean charcoal rot caused by *Macrophomina phaseolina* using LAMP assays. *Phytopathology*, 105, 1612-1617.

Lu, C., Zhang, H., Wang, Y. and Zheng, X. (2015b) Rapid diagnosis of *Fusarium* root rot in soybean caused by *Fusarium equiseti* or *Fusarium graminearum* using loop-mediated isothermal amplification (LAMP) assays. *Australasian Plant Pathology*, 44, 437-443.

Rong, Z., Yuan, Y., Ye, W., Wang, X. and Zheng, X. (2018) Rapid diagnosis of rice bakanae caused by *Fusarium fujikuroi* and *F. proliferatum* using loop-mediated isothermal amplification assays. *Journal of Phytopathology*, 1-8.

Xu, M., Ye, W., Wang, S., Feng, H. and Zheng, X. (2018) Rapid diagnosis of potato dry rot caused by *Fusarium sambucinum* using a loop-mediated isothermal amplification assay. *Acta Phytopathologica Sinica*, 1, 55-60.

Zeng, D., Rong, Z., Yuan, Y., Wang, X. and Zheng, X. (2018) Rapid diagnosis of rice bakanae disease caused by *Fusarium verticillioides* using a loop-mediated isothermal amplification assay. *Journal of Nanjing Agricultural University*, 41, 286-292.

Zeng, D., Ye, W., Xu, M., Lu, C., Tian, Q. and Zheng, X. (2017) Rapid diagnosis of soya bean root rot caused by *Fusarium culmorum* using a loop-mediated isothermal amplification assay. *Journal of Phytopathology*, 165, 249-256.

Zeng, D., Zhang, H., Tian, Q., Xu, M., Wang, Y. and Zheng, X. (2016) Detection of soybean seed-borne pathogens in Huang-huai area using LAMP assays. *Journal of Nanjing Agricultural University*, 39, 947-953.

Appendix C. Primer sequences of the 13 LAMP assays.

Species	Primer name	Primer sequence
Ps	F3	GCGTATTGAGGGTTGCTG
	B3	GCGTCCTATCACCTAGTGC
	FIP	ACGTGGGTTCGGATTGGACCCTTGGGTACTGTGTACCAG
	BIP	CGCCACCGATGATTCGACGAAATCAACCATCACTCACCG
	LF	-
	LB	GTAGGATGATTGGATGAACAC
Fo	F3	CTCGAAGGGTAATGGGGAGA
	B3	ATTGGGATCAGGCTGTTCAA
	FIP	CGCCAAAGGGTAGATATGGGCTAGTTGATTATGGCTTCGGCG
	BIP	GGACGGCATCGCTGTGTTGGTGAAGCAGTCTCACAAACGT
	LF	-
	LB	AGAGAACTACGCGTATGCCC
Fe	F3	ACGATGTTCCTTAGCTTCTC
	B3	GCGGACTTCATTTCCTAGA
	FIP	CTTCGACTTCTTTGACGAATTTGGAAGCTTGGTCTAACTACTGAA
	BIP	CGCACCTCACCCTACTTCAACGGTGTAGATGGTGATTTCAG
	LF	-
	LB	GGGCAACACAGGAATCGTCAAC
Fg	F3	GTCCAATCCACTCCATCCTC
	B3	CGGTCTTCTCGAGAGGTTCA
	FIP	GTGTGTGGGATGGTGGCACTACAAGTCAAATCACCCATGCG
	BIP	CTTTCGTCTCCCGGCACAATGGTCTTGTCCCAACGATGAGGA
	LF	-
	LB	CCCGCTCAGAAGAATTCTTCC
Fs	F3	CCTGCACACAAAAAACACCA
	B3	GGGGAGTCTCGAACTTCCA
	FIP	CGAGCTCAGCGGCTTCCTATTGGCGCATCATCACGTGGTT
	BIP	GTTCCTTCAAGTACGCCTGGGTAGGGCAATGTCGATGGTG
	LF	CGAGCTCAGCGGCTTCCTATTG
	LB	GCGCATCATCACGTGGTT
Fp	F3	ATCGGCGTTTTCAACTCTCT
	B3	TTGGATGCTGACGACATGAA
	FIP	CTATGCCAGAGCCGACGTAGACCCAAGCATTCCTCCCCCT
	BIP	GACCCCAATGGCTGAGGTACCTCGCGAAGTAGTCAACCATCT
	LF	CTTTGCAGCTGGGGCTG
	LB	GTTTAGTTACGCCGCCGCCAAA
Fc	F3	CTACATCCCAAAGTTCATCAA
	B3	ATGGGCTGGAAACCATTG
	FIP	GGCCATGACTTCTGTAATATTGACGAGTTGAAAACTACGTCAAAACATC
	BIP	AATCACAATTTACACAGCATCTGGATAGAGAGTGGCGAATGTG
	LF	TGTCGCCCTTGAAGTATGGA
	LB	TCCCTCCTAGGAAACGAAGTCC
Fa	F3	CTACAATTGGCGGGGTAGC
	B3	TGAACTCGAGCGGGGTAG
	FIP	TCGATACCACCGCACTGGTAGAAAGATACGCTTGTGCTGACA
	BIP	TCTCATTTTCCTCGATCGCGCGGTGTCGAGTCGTATCAGAGC
	LF	TCAAGTGACCGGTCTATGATGTA
	LB	-
Fv	F3	CCCACGCTACATGATGCTAA
	B3	GATCTTGTCGGAGACCTTGG
	FIP	GAAACCGGAGGCCTTCTGGGCTTTCGGCACTGCTCACC
	BIP	GAAGGAGCTCGAGTACTTCGCCAGGATGGCGAGGAAAGGA
	LF	AGGTCGACACCGACCATG
	LB	AAGGCTCTCGAGGAGCCCAAG
Rs	F3	CGAAATGCGATAAGTAATGTGAA

	B3	AGAGGAGCAGGTGTGAAG
	FIP	GCTCCAAGGAATACCAAGGAGCCAGAATTCAGTGAATCATCGAATC
	BIP	TGCCTGTTTGAGTATCATGAATTCTAAAAGACCTCCAATACCAAAG
	LF	-
	LB	-
Mp	F3	GCACATTGCGCCCCTTG
	B3	GTTCAGAAGGTTCGTCCGG
	FIP	AGGACGGTGCCCAATACCAAGCGGGGCATGCCTGTTCGA
	BIP	CTCAAAGACCTCGGCGGTGGGCTCCGAAGCGAGGTGTA
	LF	-
	LB	-
Ci	F3	CGACAGCAACAAAGCTCGA
	B3	AGATGGTCTGCCAGAAAGC
	FIP	CGGTCTGGAGGTGGACCTAGAAGACCCCAAGCACGATGTG
	BIP	TCCAGCTTCCAAAAACTGCCCTAGCACCAATTTGGTTACCCT
	LF	AGTCAGCAACCTTGTCCTCCTCCGATAT
	LB	GGGGATTCACTAACATTCGCG
Pl	F3	CCACCACACGTGCAGCT
	B3	CGACAGGGTTGATGTGTGAG
	FIP	AGCGTCGCAGACAGCGCATGCGCTCCATATCCCTCCA
	BIP	AGGCATTTTCACCCCTCCCTCTTGATAAGCGCACCCCGC
	LF	GCCAACGGTTTCTATGTGCA
	LB	-