

## Supporting information

### Collection, Nucleic Acid Release, Amplification, and Visualization Platform for Rapid Field Detection of Rice False Smut

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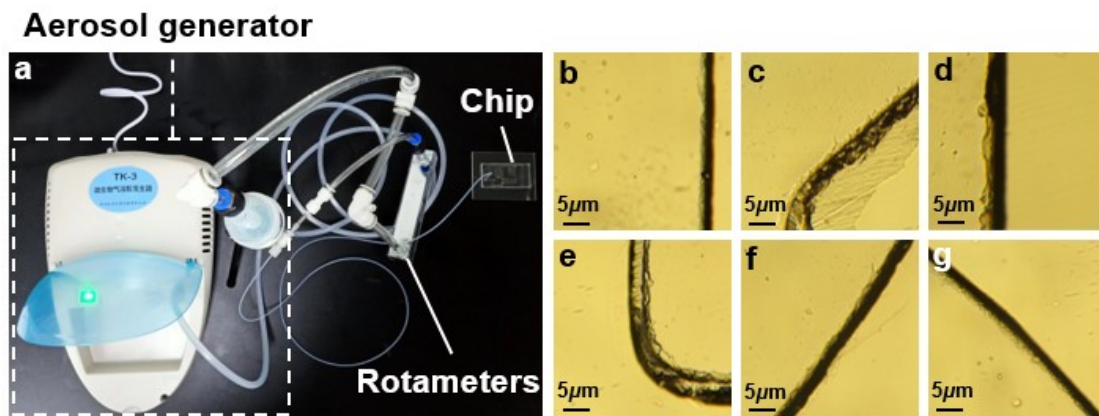
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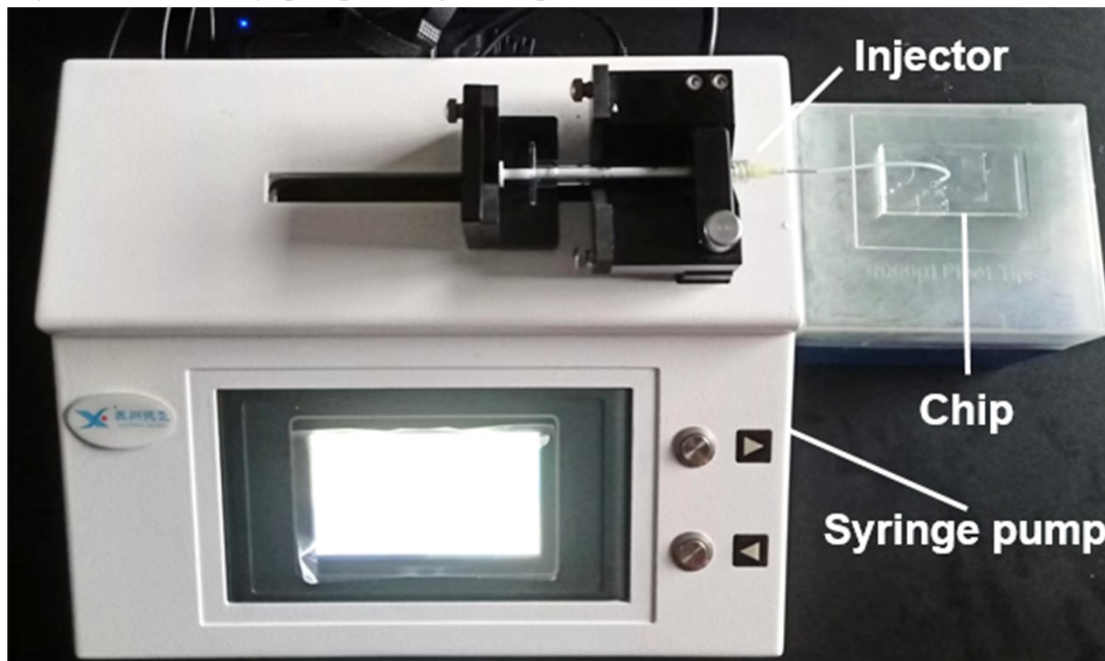
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**Figure S1. The collection device and internal structure of the chip.**



**Figure S1.** (a) The collection device. The internal structure of the chip (b-g): (b) The inner wall of the pretreatment channel. (c) The inner wall of the collection chamber. (d) The inner wall of the lysis chamber. (e) The inner wall of the dilution chamber. (f) The inner wall of the amplification chamber. (g) The inner wall of the control room.

**Figure S2. The syringe pump driving the chip.**



**Table S1. The primer sequences of G544 used in this study**

Target	Primer name	Sequence (5'-3')
	F3	GCAAGTCTGCATCCCAAGTC
	B3	CGACGGCAGCTTCATGG
G544	FIP	TGCAAAGAGACTGACTGGCCCCTTGCGACCCGAACCCG
	BIP	CCTCCGGTTCATCCCACGAGCTGGAGGGGAGCGA
	LF	TGTTTCAGGAACCTTGGGTGG
	LB	TCCTGCTGCCTTACCGC

**Table S2. The concentrations of each composition (for a single reaction) in the amplification chamber**

Item	Volume ( $\mu$ L, for a single reaction)
ddH <sub>2</sub> O	0.3
MgSO <sub>4</sub> (100mM)	0.4
10 × Buffer (Mg <sup>2+</sup> free)	1
dNTP (10mM)	1.4
Betaine	1.2
Primer Mix	2.8
10 × SYBR Green I	1
Bst DNA polymerase	0.4

**Table S3 The CT value of each sample using two methods**

CT value		
Target: <i>U. virens</i>	Strong positive samples	Weak positive samples
1	8.622	19.573
2	8.952	20.042
3	7.677	20.363
4	7.996	20.622
5	8.421	20.952
6	7.931	18.677
7	8.268	18.996
8	8.937	18.421
9	8.070	17.931
10	8.074	19.268
11	7.775	17.937
12	7.411	20.070
13	8.640	19.074
14	8.253	18.775
15	8.088	20.411
16	8.430	20.640
17	7.899	20.253
18	8.535	18.088
19	8.353	19.430
20	8.254	18.899

**Table S4. The one-on-one comparison of the CT value from common methods and the proposed method**

No.	CT value											
	RT-PCR	LAMP	POCT-PCR	No.	RT-PCR	LAMP	POCT-PCR	No.	RT-PCR	LAMP	POCT-PCR	
1	26.51	18.96	27.48	41	29.62	23.87	30.51	81	0	0	0	
2	24.63	17.02	26.14	42	33.75	26.96	0	82	0	0	0	
3	27.92	20.17	29.41	43	31.28	25.26	0	83	0	0	0	
4	27.60	20.53	27.99	44	32.95	27.08	34.87	84	0	0	0	
5	25.08	17.45	26.87	45	26.19	20.80	26.55	85	0	0	0	
6	29.91	21.33	30.74	46	24.32	15.07	25.83	86	0	0	0	
7	30.49	22.89	30.81	47	32.71	0	33.97	87	0	0	0	
8	28.63	21.27	29.75	48	28.90	21.46	29.15	88	0	0	0	
9	33.67	27.09	0	49	27.33	22.02	29.84	89	0	0	0	
10	32.05	26.76	34.37	50	30.67	24.01	32.71	90	0	0	0	
11	32.87	25.45	34.50	51	33.65	27.07	0	91	0	0	0	
12	29.95	22.70	30.72	52	30.12	23.75	31.74	92	0	0	0	
13	34.73	27.69	0	53	28.83	20.62	30.45	93	0	0	0	
14	31.56	25.97	0	54	27.46	20.21	28.05	94	0	0	0	
15	29.81	0	31.46	55	30.78	24.09	0	95	0	0	0	
16	31.78	24.07	33.29	56	26.67	19.89	28.33	96	0	0	0	
17	35.59	28.48	37.25	57	29.97	0	31.55	97	0	0	0	
18	0	0	0	58	30.40	23.99	30.83	98	0	0	0	
19	0	0	0	59	27.70	20.69	28.85	99	0	0	0	
20	0	0	0	60	29.08	22.54	0	100	0	0	0	
21	0	0	0	61	29.75	22.06	30.66	101	0	0	0	
22	0	0	0	62	28.44	21.97	29.31	102	0	0	0	
23	0	0	0	63	25.88	17.18	26.35	103	0	0	0	
24	0	0	29.97	64	26.07	20.34	28.63	104	0	0	0	
25	0	0	0	65	29.47	20.87	31.67	105	0	0	32.25	
26	0	0	0	66	32.98	26.85	34.03	106	0	0	30.53	
27	0	0	0	67	30.01	24.40	31.17	107	0	0	0	
28	0	0	0	68	28.59	21.70	29.83	108	0	0	0	
29	0	0	0	69	27.66	20.55	29.40	109	0	0	0	
30	0	0	0	70	25.84	16.68	27.77	110	0	0	0	
31	0	0	0	71	29.48	0	30.70	111	0	0	0	
32	0	0	0	72	31.33	23.67	32.09	112	0	0	0	
33	0	0	0	73	28.74	21.19	30.06	113	0	0	0	
34	0	0	0	74	30.85	23.07	0	114	0	0	0	
35	0	0	0	75	26.63	19.04	27.80	115	0	0	0	
36	0	0	0	76	27.11	19.08	28.35	116	0	0	0	
37	0	0	0	77	0	0	0	117	0	0	0	

38	0	0	0	78	0	0	0	118	0	0	0
39	0	0	0	79	0	0	32.80	119	0	0	0
40	0	0	0	80	0	0	0	120	0	0	0

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