SUPPLEMENTARY MATERIAL

Table S1. Information on fungal strains

Fungal strains	Accession number	Place of origin	Place of preservation
Fusarium sp. FH	Q025621	Centro de Investigación de la Biodiversidad y Recursos Genéticos de Ancash (CIByRGA), Facultad de Ciencias, Universidad Nacional Santiago Antúnez de Mayolo.	Laboratorio de Investigación en Biotecnología Microbiana, Universidad Nacional de Frontera, Sullana, Piura-Perú
F. oxysporum CTLM12	MH980126		
Alternaria sp. ATCC20084	-	ATCC collection	
Aspergillus niger ATCC7275	-		
Neofusicoccum sp. PT-S	PX735905	Isolated from avocado fruits showing signs of disease	

Table S2. Thermotolerance of endophytic bacteria of *Morisonia scabrida*.

Strains	Temperature	Time (h)							
	(°C)	0	24	48	72	96	120	144	168
S1R20	25	0.020±0.001	0.364±0.002	0.364±0.004	0.386±0.001	0.400±0.006	0.513±0.008	0.622±0.007	0.655±0.004
	30	0.020±0.001	0.569±0.001	0.861±0.002	1.025±0.003	1.048±0.005	1.177±0.047	1.505±0.012	1.617±0.004
	37	0.020±0.001	0.957±0.007	1.133±0.005	1.299±0.001	1.352±0.005	1.512±0.004	1.505±0.005	1.673±0.005
	42	0.020±0.001	1.267±0.010	1.282±0.007	1.443±0.006	1.621±0.008	1.642±0.002	1.697±0.008	1.744±0.006
	50	0.020±0.001	0.296±0.004	0.415±0.012	0.697±0.006	0.745±0.004	0.832±0.050	1.007±0.006	1.020±0.007
S1R21	25	0.024±0.001	0.374±0.002	0.402±0.002	0.443±0.006	0.443±0.003	0.765±0.003	0.812±0.004	0.894±0.003
	30	0.024±0.001	0.878±0.006	1.041±0.058	1.346±0.004	1.362±0.002	1.364±0.004	1.469±0.003	1.566±0.008
	37	0.024±0.001	0.972±0.008	1.204±0.008	1.422±0.002	1.471±0.003	1.473±0.007	1.503±0.010	1.518±0.008
	42	0.024±0.001	1.115±0.007	1.152±0.006	1.454±0.005	1.490±0.002	1.543±0.003	1.622±0.011	1.724±0.008
	50	0.024±0.001	0.113±0.002	0.183±0.005	0.255±0.003	0.302±0.012	0.394±0.005	0.557±0.006	0.640±0.002

A: Growth curve data (0 – 168 h) of S1R20 and S1R21 under different temperatures (25, 30, 37, 42, and 45 °C). Values represent the mean ± SD.

Table S3. Closely related reference sequences of endophytic bacteria from *Morisonia scabrida* obtained from GenBank

Strain	Code	Number of base pairs (bp)	Accession number	Percentage identity (%)	E value	Query coverage (%)
Gram-positive bacteria						
*Bacillus albus**	S1H21	1449	PX752826	-	-	-
*Bacillus cereus**	S1R21	1481	PX752827	-	-	-
*Lysinibacillus fusiformis**	S1R9	813	PX752828	-	-	-
Bacillus proteolyticus	MCCC 1A00365	1419	NR157735.1	99.72	0.0	100
Bacillus sanguinis	BML-BC004	1555	NR_175555.1	99.72	0.0	100
Bacillus wiedmannii	FSL_W8-0169	1540	NR_152692.1	99.72	0.0	100
Bacillus albus	KTMIC	1437	PV573378.1	99.72	0.0	100
Bacillus albus	MCCC 1A02146	1509	NR_157729.1	99.93	0.0	100
Bacillus albus	ASSF01	1384	MW741611.1	99.93	0.0	100
Bacillus anthracis	ATCC 14578	1306	NR_041248.1	99.85	0.0	90
Bacillus paramycoides	MCCC 1A04098	1509	NR_157734.1	99.86	0.0	100
Bacillus cereus	CCM 2010	1535	NR_115714.1	99.79	0.0	100
Bacillus cereus	ATCC 14579	1489	NR_114582.1	99.79	0.0	100
Bacillus cereus	JCM 2152	1474	NR_113266.1	99.79	0.0	100
Bacillus cereus	IAM 12605	1486	NR_115526.1	99.79	0.0	99
Bacillus cereus	*NBRC 15305*	*1476*	*NR_112630.1*	*99.79*	*0.0*	*99*
Lysinibacillus sphaericus	DSM 28	1515	NR_042073.1	98.88	0.0	99
Lysinibacillus sphaericus	KCTC 3346(T)	879	MK744160.1	100	0.0	99
Lysinibacillus sphaericus	IAM 13420	1484	NR_115529.1	98.11	0.0	97
Lysinibacillus fusiformis	DSM 2898	1515	NR_042072.1	100	0.0	99
Lysinibacillus fusiformis	NBRC 15717	1382	OQ618954.1	100	0.0	99
Lysinibacillus fusiformis	DSM 2898	1419	MN598655.1	100	0.0	97
Lysinibacillus fusiformis	NBRC15717	1474	NR_112569.1	100	0.0	97
Gram-negative bacteria						
Enterobacter sp.*	S1H5	1471	PX752829	-	-	-
Enterobacter sp.*	S1R8	1486	PX752832	-	-	-
*Stutzerimonas stutzeri**	S1T11	1473	PX752831	-	-	-
Klebsiella sp.*	S1R16	1404	PX752830	-	-	-
Enterobacter asburiae	JCM6051	1422	NR_024640.1	99.02	0.0	97
Enterobacter asburiae	GM3-3	1400	AB675718.1	99.02	0.0	97
Enterobacter asburiae	NC16	1373	MK968154.1	99.02	0.0	97
Enterobacter bugandensis	247BMC	1444	NR_148649.1	98.54	0.0	98
Enterobacter cancerogenus	LMG 2693	1387	NR_116756.1	99.28	0.0	94
Enterobacter hormaechei subsp. *Xiangfangensis*	10-17	1429	NR_126208.1	98.60	0.0	97
Stutzerimonas stutzeri	CCUG 11256	1456	NR_118798.1	100	0.0	99
Stutzerimonas stutzeri	DSM_5190	1369	NR_114751.1	100	0.0	93
Stutzerimonas stutzeri	NBRC 14165	1462	NR_113652.1	99.93	0.0	99
Stutzerimonas stutzeri	VKM B-975	1495	NR_116489.1)	99.80	0.0	100
Stutzerimonas nitrititolerans	GL14	1459	NR_169495.1	98.49	0.0	99
Stutzerimonas chloritidismutans	AW-1	1501	NR_115115.1	98.30	0.0	100
Stutzerimonas kunmingensis	HL22-2	1498	NR_133828.1	98.10	0.0	100
Klebsiella pneumoniae	JCM 1662	1462	NR_113240.1	99.71	0.0	100
Klebsiella pneumoniae	ATCC_13883	1436	NR_114506.1	99.79	0.0	100
Klebsiella variicola	F2R9	1412	NR_025635.1	99.56	0.0	98
Klebsiella quasivariicola	KPN1705	1505	NR_181901.1	99.43	0.0	100
Klebsiella africana	SB5857	1462	NR_180233.	99.43	0.0	100
Lactiplantibacillus plantarum	COE4	1116	PV197668	-	-	-

*Scientific names marked with an asterisk represent the strains selected from the antimicrobial assays.



Figure S1. Taxonomic identification of *Morisonia scabrida* in the Herbarium Truxillense, Universidad Nacional de Trujillo (UNT), Trujillo, Perú.

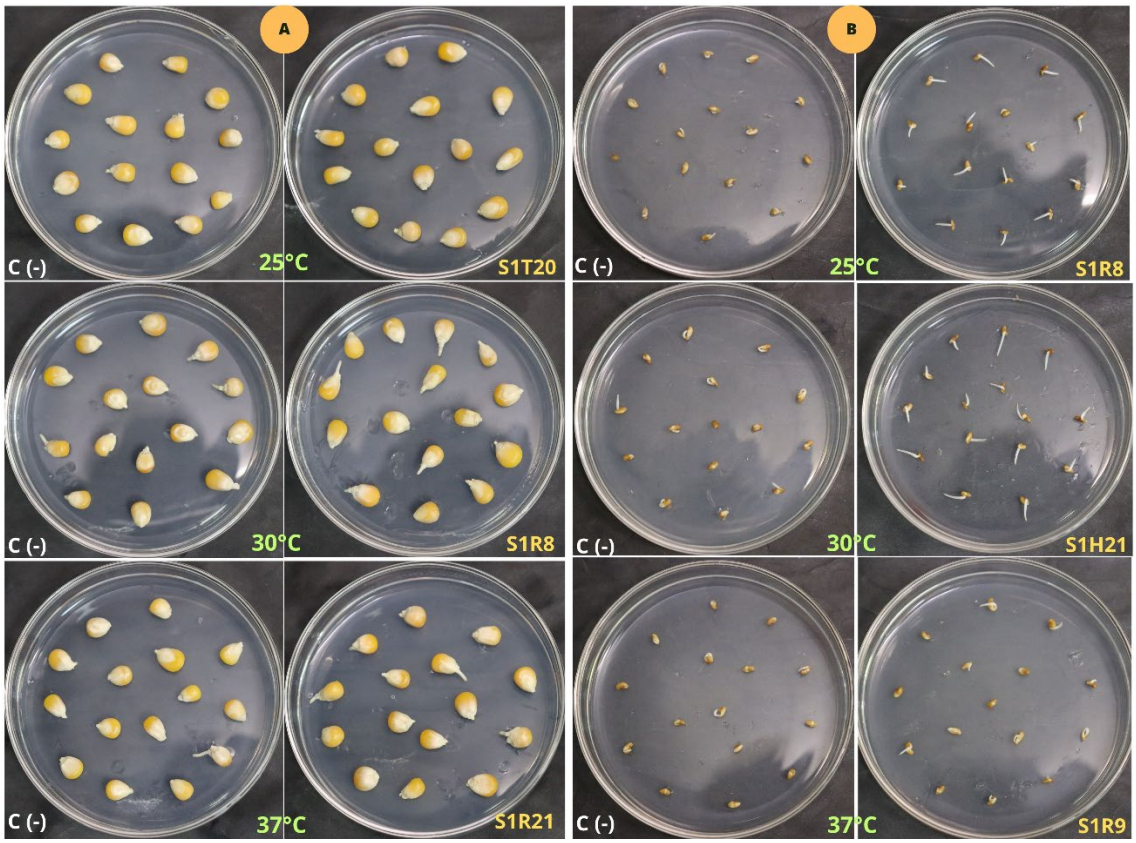


Figure S2. Germination percentage of endophytic bacteria isolated from *Morisonia scabrida* evaluated at 25, 30, and 37 °C. **A.** *Zea mays* (S1T20, S1R8, and S1R21 showed better response) and B. *Medicago sativa* (S1R8, S1H21, and S1R9 showed better response). C (−): Growth control without bacteria.