Supplementary

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SUPPL. TABLE 1. Genetic similarities of *Aspergillus niger* AUMC 14260 (accession number: MN701881) isolated from rhizosphere of pepper with the closest match in the GenBank database and sequence similarity in percent to the match as inferred from Blastn searches of ITS sequences

Fungal name	Deposition no.	Sequence similarities	Length	Accession No.	Source of isolation	Country	Year of isolation	Reference
Aspergillus niger Tiegh	ATCC 16888	572/572(100%)	623	AY373852.1	Unknown	USA	2003	Haugland *et al.* (2004)
Aspergillus foetidus Thom & Raper	CBS 121.28	572/572(100%)	601	(NR163668.1) T	Awamori koji alcoholic beverage	Japan	-	Vu *et al.* (2019)
Aspergillus welwitschiae	CBS 139.54	572/572(100%)	596	(NR137513.1) T	Welwitschia mirabilis female inflorescence	Namibia	2013	Hong *et al.* (2013)
Aspergillus awamori Nakaz	CBC 557.65	572/572(100%)	608	(NR077143.1) T	Unknown	Netherlands	2005	Perrone *et al.* (2006)
Aspergillus niger Tiegh	ATCC 16888	565/565(100%)	576	(NR111348.1) T	Unknown	Unknown	2008	Unpublished
Aspergillus costaricaensis Samson & Frisvad	CBS 115574	569/572(99%)	596	(NR103604.1) T	Soil	Costa Rica	2000	Meijer *et al.* (2011)
Aspergillus piperis Samson & Frisvad	CBS 112811	569/573(99%)	597	(NR077191.1) T	Black pepper	Denmark	2003	Meijer *et al.* (2011)
Aspergillus brasiliensis Varga, Frisvad & Samson	CBS 101740	568/573(99%)v	597	FJ629321.1	Unknown	Unknown	-	Unpublished

SUPPL. TABLE 2. Genetic similarities of *Penicillium chrysogenum* AUMC 14100 (accession number: MN219732) isolated from rhizosphere of wheat with the closest match in the GenBank database and sequence similarity in percent to the match as inferred from Blastn searches of ITS sequences

Fungal name	Deposition no.	Sequence similarities	Length	Accession no.	source of isolation	Country	Year of isolation	Reference
Penicillium chrysogenum Thom	CBS 306.48	571/571(100%)	589	MH856357.1	Unknown	USA	-	Vu et al. (2019)
Penicillium chrysogenum Thom	FRR 807	572/572(100%)	609	AY373902.1	Unknown	USA	2004	Haugland et al. (2004)
Penicillium chrysogenum Thom	ATCC 10106	572/572(100%)	693	HQ026745.1	Cheese	USA	2010	Unpublished
Penicillium tardochrysogenum Frisvad, Houbraken & Samson	CBS 132200	568/568(100%)	590	MH865983.1	Soil	Antarctica	2012	Vu et al. (2019)
Penicillium flavigenum Frisvad & Samson	CBS 419.89	570/571(99%)	585	(NR_103695.1)T	Wheat flour	Denmark	1985	Schoch et al. (2014)
Penicillium vanluykii Frisvad, Houbraken & Samson	CBS 131539	570/571(99%)	585	(NR_111813.1)T	Lechuiguila Cave	USA	2012	Houbraken et al. (2012)
Penicillium rubens Biourge	CBS 129667	570/571(99%)	585	(NR_111815.1)T	Unknown	USA	2012	Houbraken et al. (2012)
Penicillium nalgiovense Laxa	CBS 352.48	569/571(99%)	585	(NR_103694.1)T	Ellischauer cheese	Czechoslovakia	2012	Houbraken et al. (2012)
Penicillium goetzii Rogers, Frisvad, Houbraken & Samson	CBS 285.73	569/571(99%)	585	(NR_111820.1)T	Soil	Canada	2012	Houbraken et al. (2012)
Penicillium halotolerans Frisvad, Houbraken & Samson	CBS 131537	569/571(99%)	585	(NR_111812.1)T	Salt marsh	Egypt	2012	Houbraken et al. (2012)

SUPPL. TABLE 3. Wheat soil properties (pH, EC, TSS, and organic matter) for different treatments

Treatments		pH	EC	TSS	Organic Matter
Negative control	Seedless	6.96^{b}±0.03	0.86^{m}±0.01	0.55^{m}±0.004	0.55^{l}±0.05
	Seedless+RP	7.37^{a}±0.09	0.91^{lm}±0.01	0.59^{lm}±0.004	0.65^{kl}±0.10
	Seedless+SP	6.92^{b}±0.05	0.93^{lm}±0.02	0.6^{lm}±0.011	0.65^{kl}±0.05
	Plants	6.89^{bc}±0.02	0.89^{lm}±0.01	0.57^{lm}±0.004	0.75^{kl}±0.09
	Plants +RP	7.22^{a}±0.13	0.93^{lm}±0.01	0.59^{lm}±0.007	0.90^{k}±0.09
	Plants +SP	6.94^{b}±0.05	0.95^{lm}±0.01	0.61^{lm}±0.004	0.85^{k}±0.10
A. niger	CF+Control	6.46^{ghi}±0.08	1.08^{Ijk}±0.03	0.69^{Ijk}±0.020	2.04^{h}±0.05
	CF+RP	6.60^{efg}±0.04	1.11^{ij}±0.02	0.71^{ij}±0.010	2.64^{efg}±0.10
	CF+SP	6.70^{Cde}±0.04	1.41^{ed}±0.03	0.90^{DE}±0.020	2.74^{def}±0.05
P. chrysogenum	CF+Control	6.24J^{kl}±0.05	1.07I^{jk}±0.03	0.68^{jk}±0.017	1.69^{i}±0.13
	CF+RP	6.51^{fgh}±0.03	1.2^{ghI}±0.04	0.77^{ghi}±0.023	2.14^{h}±0.13
	CF+SP	6.57^{efg}±0.05	1.27^{fgh}±0.03	0.81^{fgh}±0.021	2.49^{fg}±0.13
A. nr + P. chrysogenum	CF+Control	6.53^{fgh}±0.03	1.74^{a}±0.05	1.11^{a}±0.030	3.04^{bc}±0.05
	CF+RP	6.13^{l}±0.10	1.64^{ab}±0.04	1.05^{ab}±0.026	3.78^{a}±0.10
	CF+SP	6.51^{fgh}±0.07	1.65^{ab}±0.04	1.06^{ab}±0.027	3.18^{b}±0.10
A. niger	CS+Control	6.7^{cde}±0.02	1.30^{efg}±0.07	0.83^{efg}±0.042	1.6^{i}±0.10
	CS+RP	6.53^{fgh}±0.07	1.24^{fgh}±0.05	0.79^{fgh}±0.030	1.55^{i}±0.13
	CS+SP	6.77^{bcd}±0.03	1.34^{ef}±0.03	0.86^{ef}±0.018	1.69^{i}±0.13
P. chrysogenum	CS+Control	6.62^{def}±0.04	0.99^{kl}±0.02	0.64^{kl}±0.010	1.25^{j}±0.13
	CS+RP	6.39^{hij}±0.09	1.17^{hij}±0.07	0.75^{hij}±0.043	1.25^{j}±0.05
	CS+SP	6.19^{kl}±0.07	1.18^{hij}±0.06	0.75^{hij}±0.036	1.45^{ij}±0.05
A.niger + P. chrysogenum	CS+Control	6.65^{def}±0.04	1.47^{cd}±0.06	0.94^{cd}±0.037	2.44^{g}±0.10
	CS+RP	6.28^{jkl}±0.09	1.55^{bc}±0.03	0.99^{bc}±0.017	2.94^{bcd}±0.13
	CS+SP	6.33^{ijk}±0.07	1.63^{ab}±0.05	1.04^{ab}±0.031	2.89^{cde}±0.10
F-test		23.64**	53.11**	53.11**	97.07**

CF= Culture filtrate, CS= Conidial suspension, RP= Rock phosphate, SP= Superphosphate

SUPPL. TABLE 4. Soil chemical properties of wheat plant (*viz.*, Mg^{+2}, and Ca^{+2} contents, soluble and total phosphate contents) under different treatments

Treatments		Soluble P	Total P	Ca^{+2}	Mg^{+2}
Negative control	Seedless	$5.3^{j}\pm0.577$	$0.13^{i}\pm0.02$	$0.035^{i}\pm0.005$	$0.035^{i}\pm0.005$
	Seedless+RP	$7.3^{i}\pm0.577$	$0.18^{gh}\pm0.01$	$0.06^{h}\pm0.021$	$0.06^{h}\pm0.021$
	Seedless+SP	$8.3^{h}\pm0.577$	$0.13^{i}\pm0.02$	$0.04^{hi}\pm0.008$	$0.04^{hi}\pm0.008$
	Plants	$9.7^{g}\pm1.155$	$0.26^{def}\pm0.02$	$0.06^{h}\pm0.012$	$0.06^{h}\pm0.012$
	Plants +RP	$10.7^{fg}\pm0.577$	$0.25^{ef}\pm0.04$	$0.09^{g}\pm0.017$	$0.09^{g}\pm0.017$
	Plants +SP	$10^{efg}\pm1$	$0.32^{bc}\pm0.02$	$0.06^{h}\pm0.008$	$0.06^{h}\pm0.008$
A. niger	CF+Control	$11.3^{ef}\pm0.577$	$0.2^{g}\pm0.02$	$0.13^{cde}\pm0.012$	$0.13^{cde}\pm0.012$
	CF+RP	$16.3^{b}\pm0.577$	$0.22^{fg}\pm0.02$	$0.13^{cde}\pm0.005$	$0.13^{cde}\pm0.005$
	CF+SP	$16.67^{b}\pm0.577$	$0.26^{def}\pm0.02$	$0.17^{b}\pm0.014$	$0.17^{b}\pm0.014$
P. chrysogenum	CF+Control	$11^{ef}\pm1$	$0.36^{bc}\pm0.04$	$0.08^{g}\pm0.012$	$0.08^{g}\pm0.012$
	CF+RP	$13.67^{def}\pm0.577$	$0.26^{def}\pm0.02$	$0.14^{cd}\pm0.009$	$0.14^{cd}\pm0.009$
	CF+SP	$15^{bc}\pm1.732$	$0.37^{a}\pm0.01$	$0.09^{g}\pm0.008$	$0.09^{g}\pm0.008$
A. niger + *P. chrysogenum*	CF+Control	$10^{efg}\pm0.1$	$0.3^{cde}\pm0.02$	$0.12^{de}\pm0.005$	$0.12^{de}\pm0.005$
	CF+RP	$15^{bc}\pm1.3$	$0.32^{bc}\pm0.05$	$0.15^{c}\pm0.009$	$0.15^{c}\pm0.009$
	CF+SP	$16.67^{b}\pm1.73$	$0.34^{abc}\pm0.01$	$0.2^{a}\pm0.012$	$0.2^{a}\pm0.012$
A. niger	CS+Control	$13.67^{def}\pm0.577$	$0.14^{hi}\pm0.02$	$0.13^{cde}\pm0.009$	$0.13^{cde}\pm0.009$
	CS+RP	$14.67^{cd}\pm0.577$	$0.15^{hi}\pm0.01$	$0.14^{cd}\pm0.001$	$0.14^{cd}\pm0.001$
	CS+SP	$15^{bc}\pm0.1$	$0.18^{gh}\pm0.03$	$0.13^{cd}\pm0.005$	$0.13^{cd}\pm0.005$
P. chrysogenum	CS+Control	$13^{def}\pm0.1$	$0.31^{bcd}\pm0.01$	$0.1^{fg}\pm0.005$	$0.1^{fg}\pm0.005$
	CS+RP	$16^{b}\pm1$	$0.26^{def}\pm0.04$	$0.14^{cd}\pm0.016$	$0.14^{cd}\pm0.016$
	CS+SP	$16^{b}\pm1$	$0.35^{ab}\pm0.02$	$0.1^{fg}\pm0.008$	$0.1^{fg}\pm0.008$
A.niger + *P. chrysogenum*	CS+Control	$14.3^{cde}\pm1.5$	$0.26^{def}\pm0.04$	$0.14^{cd}\pm0.017$	$0.14^{cd}\pm0.017$
	CS+RP	$20^{a}\pm1$	$0.22^{fg}\pm0.04$	$0.13^{cde}\pm0.012$	$0.13^{cde}\pm0.012$
	CS+SP	$20^{a}\pm0.6$	$0.295^{cde}\pm0.04$	$0.11^{ef}\pm0.016$	$0.11^{ef}\pm0.016$
F-test		23.18**	31.24**	25.15**	38.98**

CF= Culture filtrate, CS=Conidial suspension, RP = Rock phosphate, SP = Superphosphate