



Figure S1. Surface spreading colonies of B02 (a), L3 (b) and Sp20 (c) at 48 hours post inoculation on semi-solid modified MM (MMS). Bars, 0.5 cm.

Table S1. Media composition for the photometric phosphate test

Media components	Concentration (g/L)				
	Mnn/Ye	Mnn/NH ₄	Glc/NH ₄	Suc/NH ₄	Frtn/NH ₄
Mannitol	10	10			
Sucrose			10		
Glucose				10	
Fructose					10
Yeast extract	0.5				
NH ₄ SO ₄		0.5	0.5	0.5	0.5
MgSO ₄ · 7H ₂ O	0.2	0.2	0.2	0.2	0.2
NaCl	0.1	0.1	0.1	0.1	0.1
Phosphate rock	5	5	5	5	5

Mnn/ye (mannitol/yeast extract), Mnn/NH₄ (mannitol/NH₄SO₄), Glc/NH₄ (Glucose/NH₄SO₄), Suc/NH₄ (Sucrose/NH₄SO₄) and Frtn/NH₄ (Fructose/NH₄SO₄).

Table S2. Final viability (Ln CFU/mL) and pH

Measured factor	Mnn/Ye	Mnn/NH ₄	Glc/NH ₄	Suc/NH ₄	Frt/NH ₄
Ln CFU/mL B02	24.3 ± 0.046	24.1 ± 0.17	24.5 ± 0.035	23.6 ± 0.061	23.9 ± 0.075
Ln CFU/mL L3	22.9 ± 0.029	22.3 ± 0.079	22.2 ± 0.022	22.1 ± 0.056	20.1 ± 0.073
Ln CFU/mL Sp20	24.4 ± 0.052	23.0 ± 0.033	23.1 ± 0.16	24.6 ± 0.11	23.6 ± 0.19
pH B02	6.67 ± 0.01	4.15 ± 0.014	4.28 ± 0.008	4.28 ± 0.021	4.3 ± 0.011
pH L3	6.69 ± 0.005	4.41 ± 0.013	4.34 ± 0.011	4.41 ± 0.011	4.61 ± 0.014
pH Sp20	6.86 ± 0.021	4.17 ± 0.015	4.39 ± 0.017	4.15 ± 0.014	4.22 ± 0.016

*average value ± TE. Colony forming units (CFU)

Table S3. Multicriteria decision analysis weighted scores assigned to the bacterial traits evaluated for B02, L3 and Sp20.

Group	Associated phenotypes	Abbreviation	Culture conditions	Scenario 1 score										Scenario 2 score				Scenario 3 score				
				Lowest	Midpoint	Highest	B02 MAVF Score	L3 MAVF Score	Sp20 MAVF Score	Group Weight	Weight	B02 Weighted SAVF	L3 Weighted SAVF	Sp20 Weighted SAVF	Group weight	Weight	B02 Weighted SAVF	L3 Weighted SAVF	Sp20 Weighted SAVF	Group weight	Weight	B02 Weighted SAVF
Plant growth promotion	Phosphate solubilization	Pca	NBRIP agar + Ca ₃ PO ₄	0	3.49	50.27	0.41	0.54	0.54	0.03	0.014	0.018	0.018	0.025	0.010	0.013	0.013	0.039	0.016	0.021	0.021	
		Pfe	NBRIP agar + FePO ₄	0	0.46	50.27	0.47	0.54	0.48	0.03	0.016	0.018	0.016	0.025	0.012	0.013	0.012	0.039	0.019	0.021	0.019	
		Prk	NBRIP agar + rock phosphate	0	0.74	50.27	0.50	0.51	0.49	0.03	0.017	0.017	0.016	0.025	0.012	0.013	0.012	0.039	0.020	0.020	0.019	
		PMY	NBRIP broth + mannitol + yeast extract	0	4.47	100	0.55	0.39	0.55	0	0	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		PMN	NBRIP broth + mannitol + NH ₄ SO ₄	0	63.23	100	0.61	0.37	0.53	0.57	0.1	0.061	0.037	0.053	0.074	0.045	0.028	0.039	0.045	0.027	0.017	0.024
		PGN	NBRIP broth + glucose + NH ₄ SO ₄	0	56.42	100	0.49	0.47	0.54	0.425	0.1	0.049	0.047	0.054	0.074	0.036	0.035	0.040	0.045	0.022	0.021	0.024
		PSN	NBRIP broth + sucrose + NH ₄ SO ₄	0	57.23	100	0.51	0.48	0.51	0.333	0.1	0.051	0.048	0.051	0.074	0.038	0.035	0.038	0.045	0.023	0.022	0.023
		PFN	NBRIP broth + fructose + NH ₄ SO ₄	0	36.71	100	0.55	0.34	0.59	0.425	0.1	0.055	0.034	0.059	0.074	0.041	0.025	0.043	0.045	0.025	0.015	0.026
Siderophores production	Sph	Iron deficient medium	0	73.9	100	0.70	0.74	0.33	0.07	0.049	0.052	0.023	0.055	0.038	0.041	0.018	0.035	0.024	0.026	0.011		
Colonization	Swimming	Sw	Bromfield media + 0.3 % agar	0	2.13	50.27	0.51	0.47	0.51	0.07	0.036	0.033	0.036	0.106	0.054	0.050	0.055	0.083	0.043	0.039	0.043	
	Surface spreading	Ss	Modified minimal medium + 0.6 % agar	0	0.71	50.27	0.47	0.60	0.42	0.07	0.033	0.042	0.030	0.106	0.049	0.063	0.045	0.083	0.039	0.050	0.035	
	ROS scavenging	ros	Minimal medium	0	0.87	50.27	0.66	0.47	0.40	0.07	0.046	0.033	0.028	0.106	0.070	0.050	0.043	0.083	0.055	0.039	0.034	
	Biofilm formation	BfM	Modified minimal medium	0	0.51	1	0.45	0.52	0.53	0.07	0.032	0.036	0.037	0.106	0.048	0.055	0.056	0.083	0.038	0.043	0.044	
Persistence	Biofilm formation under stress conditions	BfpH	Modified minimal medium (acidic pH)	0	0.22	1	0.51	0.49	0.51	0.03	0.015	0.015	0.015	0.030	0.015	0.015	0.015	0.067	0.034	0.033	0.034	
		BfT	Modified minimal medium (High temperature)	0	0.23	1	0.48	0.52	0.50	0.03	0.015	0.015	0.015	0.030	0.015	0.015	0.015	0.067	0.032	0.034	0.033	
		Bfrk	Modified minimal medium + rock phosphate	0	0.39	1	0.25	0.68	0.53	0.03	0.008	0.020	0.016	0.030	0.008	0.020	0.016	0.067	0.017	0.045	0.035	
	Metabolic diversity	1	α-D-lactose	0	0.016	0.028	0.07	0.79	0.64	0.003	0.000	0.002	0.002	0.003	0.000	0.002	0.002	0.006	0.000	0.005	0.004	
		2	β-methyl-d-glucoside	0	0.016	0.028	0.47	0.74	0.58	0.150	0.003	0.001	0.002	0.002	0.150	0.003	0.001	0.002	0.003	0.003	0.005	0.003
		3	D-cellobiose	0	0.016	0.028	0.69	0.67	0.35	0.003	0.002	0.002	0.001	0.003	0.002	0.002	0.001	0.006	0.004	0.004	0.002	
		4	D-galactonic acid γ-lactone	0	0.016	0.028	0.85	0.79	0.28	0.003	0.002	0.002	0.001	0.003	0.002	0.002	0.001	0.006	0.005	0.005	0.002	
		6	i-Erythritol	0	0.016	0.028	0.00	0.01	0.00	0.003	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.006	0.000	0.000	0.000	
7	Glucose-1-phosphate	0	0.016	0.028	0.83	0.83	0.48	0.003	0.002	0.002	0.001	0.003	0.002	0.002	0.001	0.006	0.005	0.005	0.003			
8	D-mannitol	0	0.016	0.028	0.82	0.85	0.80	0.003	0.002	0.002	0.002	0.003	0.002	0.002	0.002	0.006	0.005	0.005	0.005			

9	N-acetyl-d-glucosamine	0	0.016	0.028	0.54	0.63	0.53	0.003	0.001	0.002	0.001	0.003	0.001	0.002	0.001	0.006	0.003	0.004	0.003
10	D-Xylose	0	0.016	0.028	0.89	0.70	0.70	0.003	0.002	0.002	0.002	0.003	0.002	0.002	0.002	0.006	0.005	0.004	0.004
12	4-Hydroxybenzoic acid	0	0.016	0.028	0.31	0.42	0.09	0.003	0.001	0.001	0.000	0.003	0.001	0.001	0.000	0.006	0.002	0.003	0.001
13	α -Ketobutyric acid	0	0.016	0.028	0.00	0.05	0.05	0.003	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.006	0.000	0.000	0.000
14	D-Galacturonic acid	0	0.016	0.028	0.72	0.44	0.00	0.003	0.002	0.001	0.000	0.003	0.002	0.001	0.000	0.006	0.004	0.003	0.000
15	D-Glucosaminic acid	0	0.016	0.028	0.09	0.00	0.00	0.003	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.006	0.001	0.000	0.000
16	D-Malic acid	0	0.016	0.028	0.09	0.56	0.00	0.003	0.000	0.002	0.000	0.003	0.000	0.002	0.000	0.006	0.001	0.003	0.000
17	γ -Hydroxybutyric acid	0	0.016	0.028	0.02	0.48	0.03	0.003	0.000	0.001	0.000	0.003	0.000	0.001	0.000	0.006	0.000	0.003	0.000
19	Pyruvic acid methyl ester	0	0.016	0.028	0.49	0.65	0.42	0.003	0.001	0.002	0.001	0.003	0.001	0.002	0.001	0.006	0.003	0.004	0.003
25	Tween 80	0	0.016	0.028	0.00	0.03	0.00	0.003	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.006	0.000	0.000	0.000
26	Glycyl-l-glutamic acid	0	0.016	0.028	0.89	0.45	0.00	0.003	0.002	0.001	0.000	0.003	0.002	0.001	0.000	0.006	0.005	0.003	0.000
27	L-Arginine	0	0.016	0.028	0.78	0.51	0.42	0.003	0.002	0.001	0.001	0.003	0.002	0.001	0.001	0.006	0.005	0.003	0.003
28	L-Asparagine	0	0.016	0.028	0.82	0.91	0.70	0.003	0.002	0.002	0.002	0.003	0.002	0.002	0.002	0.006	0.005	0.006	0.004
30	L-Serine	0	0.016	0.028	1.00	0.44	0.67	0.003	0.003	0.001	0.002	0.003	0.003	0.001	0.002	0.006	0.006	0.003	0.004
31	L-Threonine	0	0.016	0.028	0.57	0.29	0.38	0.003	0.002	0.001	0.001	0.003	0.002	0.001	0.001	0.006	0.003	0.002	0.002

The abbreviations used for each attribute are the following: Phosphate solubilization in NBRIP containing Ca_3PO_4 (Pca), FePO_4 (Pfe), rock phosphate (Prk), mannitol and yeast extract (PMY), NH_4SO_4 and mannitol (PMN), glucose (PGN), sucrose (PSN) or fructose (PFN). Siderophores synthesis (Sph), swimming (Sw), surface spreading (Ss), ROS sensibility (ros). Biofilm formation in modified minimal medium (BfM), at acidic pH (BfpH), at high temperature (BfT) and in presence of rock phosphate (Bfrk). Utilization of α -D-lactose (1), β -methyl-d-glucoside (2), D-cellobiose (3), D-galactonic acid γ -lactone (4), i-Erythritol (6), Glucose-1-phosphate (7), D-mannitol (8), N-acetyl-d-glucosamine (9), D-Xylose (10), 4-Hydroxybenzoic acid (12), α -Ketobutyric acid (13), D-Galacturonic acid (14), D-Glucosaminic acid (15), D-Malic acid (16), γ -Hydroxybutyric acid (17), Pyruvic acid methyl ester (19), Tween 80 (25), Glycyl-l-glutamic acid (26), L-Arginine (27), L-Asparagine (28), L-Serine (30), L-Threonine (31).