

Supplementary Table S1: Colony forming units (CFUs) enumeration of the current study bacteria at different dilution factors

Serial no.	Dilution factor	No. of colonies	CFUs/ml
1	Original	213	213
2	10^{-1}	40	4×10^2
3	10^{-2}	5	5×10^2

Supplementary Table S2: Morphological characterization of PVC-degrading isolates

Sr No.	Isolate Name	Shape	Size	Texture	Color	Edges
1	<i>Achromobacter xylosoxidans</i> SBBPVC1	Circular	Medium-large	Smooth	Pale yellow	Entire
2	<i>Bacillus licheniformis</i> SBBPVC2	Circular	Large	Dry	Off white	Undulate
3	<i>Pseudomonas citronellolis</i> SBBPVC3	Circular	Medium	Mucoid	Yellowish	Entire
4	<i>Pseudomonas stutzeri</i> SBBPVC4	Irregular	Medium	Dry	Cream to tan	Irregular
5	<i>Bacillus flexus</i> SBBPVC5	Circular	Large	Dry	White to pale yellow	Wavy

Supplementary Table S3: Absorbance values of bacterial isolates at 600 (nm) over 72 h' period

Time (hrs)	<i>A. xyloso</i> <i>idans</i>		<i>B. licheniformis</i>		<i>P. citronellolis</i>		<i>P. stutzeri</i>		<i>B. flexus</i>	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
0	0.237	0.006	0.22	0.0025	0.188	0.013	0.118	0.005	0.1	0.003
3	0.324	0.0065	0.362	0.0025	0.327	0.006	0.323	0.006	0.208	0.002
6	0.414	0.006	0.494	0.001	0.474	0.0025	0.352	0.0015	0.326	0.0025
24	0.534	0.0115	0.667	0.001	0.666	0.003	0.524	0.0145	0.442	0.0015
27	0.565	0.0015	0.69	0.0045	0.692	0.0015	0.542	0.005	0.452	0.009
30	0.568	0.016	0.694	0.0055	0.68	0.0075	0.544	0.0115	0.448	0.0145
48	0.523	0.003	0.667	0.008	0.657	0.013	0.511	0.016	0.433	0.002
54	0.433	0.003	0.592	0.0015	0.575	0.0015	0.444	0.0005	0.359	0.0245
72	0.35	0.003	0.513	0.009	0.514	0.0055	0.392	0.006	0.265	0.003

Supplementary Table S4: Growth phases of PVC degrading bacterial isolates measured based on OD⁶⁰⁰

Strain	Lag phase (hrs.)	Log phase (hrs.)	Stationary phase (hrs.)	Death phase (hrs.)
<i>A. xylosohdans</i> <i>SBBPVC1</i>	0-3	3< - 24	24< - 30	30< - onwards
<i>B. licheniformis</i> <i>SBBPVC2</i>	0-3	3< - 24	24< - 30	30< - onwards
<i>P. citronellolis</i> <i>SBBPVC3</i>	0-3	3< - 24	24< - 27	30< - onwards
<i>P. stutzeri</i> <i>SBBPVC4</i>	0-6	6< - 24	24< - 30	30< - onwards
<i>B. flexus</i> <i>SBBPVC5</i>	0-6	6< - 24	24< - 30	30< - onwards

Supplementary Table S5: Statistical analysis of growth curve study via time-point-by-time-point comparison and growth parameter extraction

Isolate	Time (h)	Mean_OD600	SD	Control_OD600	t-statistic	p-value	Significance
<i>A. xyloso</i> <i>dans</i> SBBPVC1	0	0.237	0.006	0.108	37.24	0.0004	***
<i>A. xyloso</i> <i>dans</i> SBBPVC1	3	0.324	0.0065	0.102	59.16	0.0001	***
<i>A. xyloso</i> <i>dans</i> SBBPVC1	6	0.414	0.006	0.112	87.18	<0.0001	***
<i>A. xyloso</i> <i>dans</i> SBBPVC1	24	0.534	0.0115	0.1041	64.75	0.0001	***
<i>A. xyloso</i> <i>dans</i> SBBPVC1	27	0.565	0.0015	0.093	545.02	<0.0001	***
<i>A. xyloso</i> <i>dans</i> SBBPVC1	30	0.568	0.016	0.114	49.15	0.0002	***
<i>A. xyloso</i> <i>dans</i> SBBPVC1	48	0.523	0.003	0.102	243.06	<0.0001	***
<i>A. xyloso</i> <i>dans</i> SBBPVC1	54	0.433	0.003	0.114	184.17	<0.0001	***
<i>A. xyloso</i> <i>dans</i> SBBPVC1	72	0.35	0.003	0.086	152.42	<0.0001	***
<i>B. licheniformis</i> SBBPVC2	0	0.22	0.0025	0.108	77.6	<0.0001	***
<i>B. licheniformis</i> SBBPVC2	3	0.362	0.0025	0.102	180.13	<0.0001	***
<i>B. licheniformis</i> SBBPVC2	6	0.494	0.001	0.112	661.64	<0.0001	***
<i>B. licheniformis</i> SBBPVC2	24	0.667	0.001	0.1041	974.97	<0.0001	***
<i>B. licheniformis</i> SBBPVC2	27	0.69	0.0045	0.093	229.79	<0.0001	***
<i>B. licheniformis</i> SBBPVC2	30	0.694	0.0055	0.114	182.65	<0.0001	***
<i>B. licheniformis</i> SBBPVC2	48	0.667	0.008	0.102	122.33	<0.0001	***
<i>B. licheniformis</i> SBBPVC2	54	0.592	0.0015	0.114	551.95	<0.0001	***
<i>B. licheniformis</i> SBBPVC2	72	0.513	0.009	0.086	82.18	<0.0001	***
<i>P. citronellolis</i> SBBPVC3	0	0.188	0.013	0.108	10.66	0.0043	**
<i>P. citronellolis</i> SBBPVC3	3	0.327	0.006	0.102	64.95	0.0001	***
<i>P. citronellolis</i> SBBPVC3	6	0.474	0.0025	0.112	250.8	<0.0001	***
<i>P. citronellolis</i> SBBPVC3	24	0.666	0.003	0.1041	324.41	<0.0001	***
<i>P. citronellolis</i> SBBPVC3	27	0.692	0.0015	0.093	691.67	<0.0001	***
<i>P. citronellolis</i> SBBPVC3	30	0.68	0.0075	0.114	130.71	<0.0001	***
<i>P. citronellolis</i> SBBPVC3	48	0.657	0.013	0.102	73.95	<0.0001	***

<i>P. citronellolis</i> SBBPVC3	54	0.575	0.0015	0.114	532.32	<0.0001	***
<i>P. citronellolis</i> SBBPVC3	72	0.514	0.0055	0.086	134.79	<0.0001	***
<i>P. stutzeri</i> SBBPVC4	0	0.118	0.005	0.108	3.46	0.0371	*
<i>P. stutzeri</i> SBBPVC4	3	0.323	0.006	0.102	63.8	0.0001	***
<i>P. stutzeri</i> SBBPVC4	6	0.352	0.0015	0.112	277.13	<0.0001	***
<i>P. stutzeri</i> SBBPVC4	24	0.524	0.0145	0.1041	50.16	0.0002	***
<i>P. stutzeri</i> SBBPVC4	27	0.542	0.005	0.093	155.54	<0.0001	***
<i>P. stutzeri</i> SBBPVC4	30	0.544	0.0115	0.114	64.76	0.0001	***
<i>P. stutzeri</i> SBBPVC4	48	0.511	0.016	0.102	44.28	0.0003	***
<i>P. stutzeri</i> SBBPVC4	54	0.444	0.0005	0.114	1143.15	<0.0001	***
<i>P. stutzeri</i> SBBPVC4	72	0.392	0.006	0.086	88.33	<0.0001	***
<i>B. flexus</i> SBBPVC5	0	0.1	0.003	0.108	-4.62	0.9781	ns
<i>B. flexus</i> SBBPVC5	3	0.208	0.002	0.102	91.8	<0.0001	***
<i>B. flexus</i> SBBPVC5	6	0.326	0.0025	0.112	148.26	<0.0001	***
<i>B. flexus</i> SBBPVC5	24	0.442	0.0015	0.1041	390.17	<0.0001	***
<i>B. flexus</i> SBBPVC5	27	0.452	0.009	0.093	69.09	0.0001	***
<i>B. flexus</i> SBBPVC5	30	0.448	0.0145	0.114	39.9	0.0003	***
<i>B. flexus</i> SBBPVC5	48	0.433	0.002	0.102	286.65	<0.0001	***
<i>B. flexus</i> SBBPVC5	54	0.359	0.0245	0.114	17.32	0.0017	**
<i>B. flexus</i> SBBPVC5	72	0.265	0.003	0.086	103.35	<0.0001	***

Supplementary Table S6: Statistical analysis of antibiotic sensitivity profiling of PVC degrading isolates via One-Sample T-test

Isolate	Dose (μ L)	Mean $\pm$ SD (mm)	t- statistic	p- value	Significance
<i>A. xylosoxidans</i> SBBPVC1	5	9.50 $\pm$ 0.71	19.00	0.0167	*
<i>A. xylosoxidans</i> SBBPVC1	10	11.50 $\pm$ 0.71	23.00	0.0138	*
<i>A. xylosoxidans</i> SBBPVC1	15	14.50 $\pm$ 0.71	29.00	0.0110	*
<i>B. licheniformis</i> SBBPVC2	5	10.50 $\pm$ 0.71	21.00	0.0151	*
<i>B. licheniformis</i> SBBPVC2	10	12.50 $\pm$ 0.71	25.00	0.0127	*
<i>B. licheniformis</i> SBBPVC2	15	15.50 $\pm$ 0.71	31.00	0.0103	*
<i>P. citronellolis</i> SBBPVC3	5	9.50 $\pm$ 0.71	19.00	0.0167	*
<i>P. citronellolis</i> SBBPVC3	10	10.50 $\pm$ 0.71	21.00	0.0151	*
<i>P. citronellolis</i> SBBPVC3	15	21.00 $\pm$ 1.41	21.00	0.0151	*
<i>P. stutzeri</i> SBBPVC4	5	1.50 $\pm$ 0.71	3.00	0.1024	ns
<i>P. stutzeri</i> SBBPVC4	10	6.50 $\pm$ 0.71	13.00	0.0244	*
<i>P. stutzeri</i> SBBPVC4	15	8.50 $\pm$ 0.71	17.00	0.0187	*
<i>B. flexus</i> SBBPVC5	5	2.50 $\pm$ 0.71	5.00	0.0628	ns
<i>B. flexus</i> SBBPVC5	10	7.00 $\pm$ 1.41	7.00	0.0452	*
<i>B. flexus</i> SBBPVC5	15	10.50 $\pm$ 0.71	21.00	0.0151	*



(A)

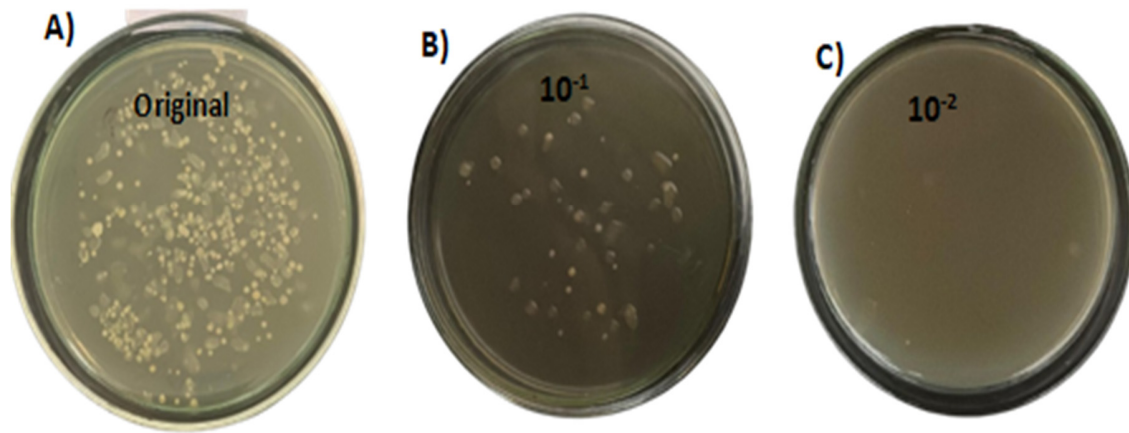


(B)



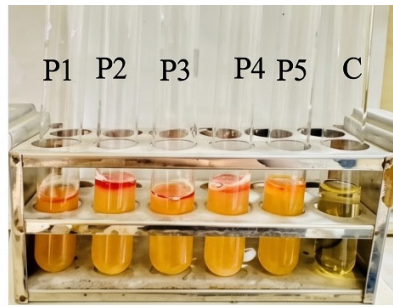
(C)

Supplementary Figure S1: Sites in Multan selected for soil sample collection for isolation of PVC degrading bacteria (A and B) and Cling foil used as PVC substrate for current study documented bacteria (C)

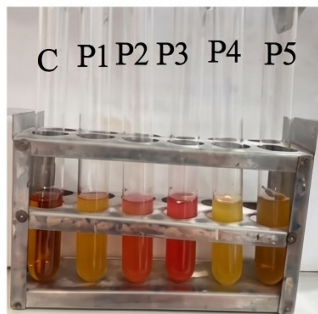


Supplementary Figure S2: CFUs of PVC-degrading bacteria isolated by the serial dilution method

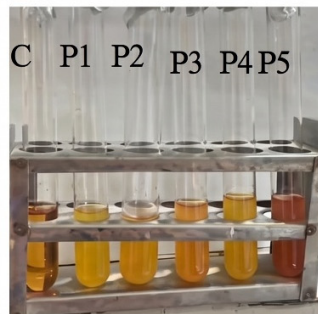
a) Colonies formed in the original plate b) Colonies formed in 10^{-1} dilution c) Colonies obtained in 10^{-2} dilution



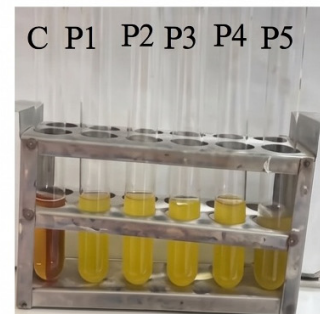
A



B



C



D

Supplementary Figure S3: Biochemical characterization of current study bacteria via indole acetic acid (IAA) production and glucose (Glu), sucrose (SUC) and lactose (LAC) fermentation tests

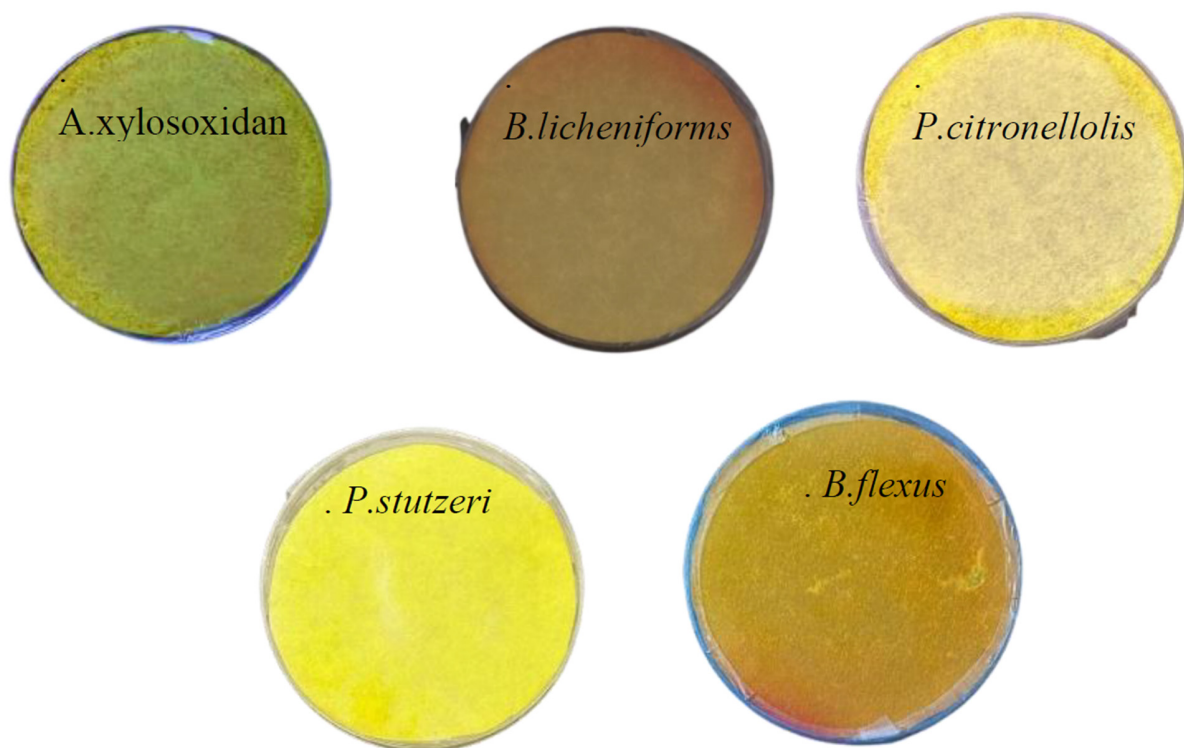
A: IAA test, B: GLU test, C: SUC test, D: LAC test, P1: *A. xylosoxidans* SBBPVC1, P2: *B. licheniformis* SBBPVC2, P3: *P. citronellolis* SBBPVC3, P4: *P. stutzeri* SBBPVC4, P5: *B. flexus* SBBPVC5



(A)



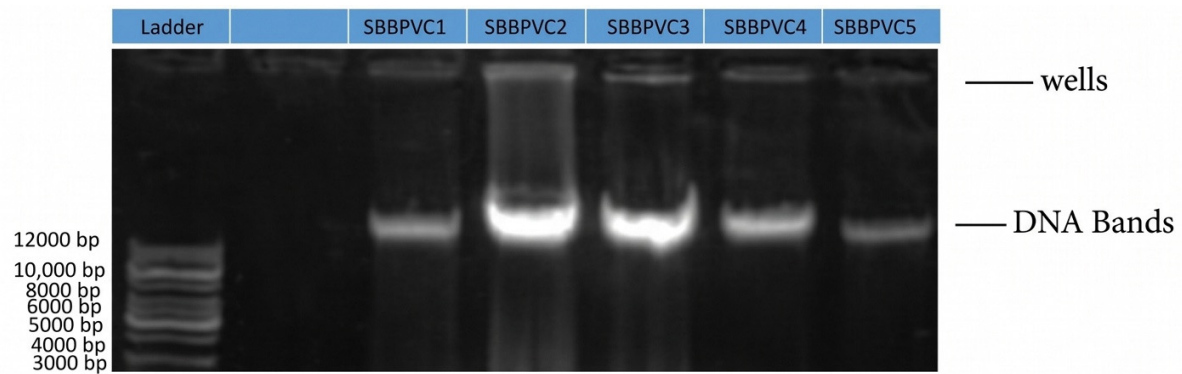
(B)



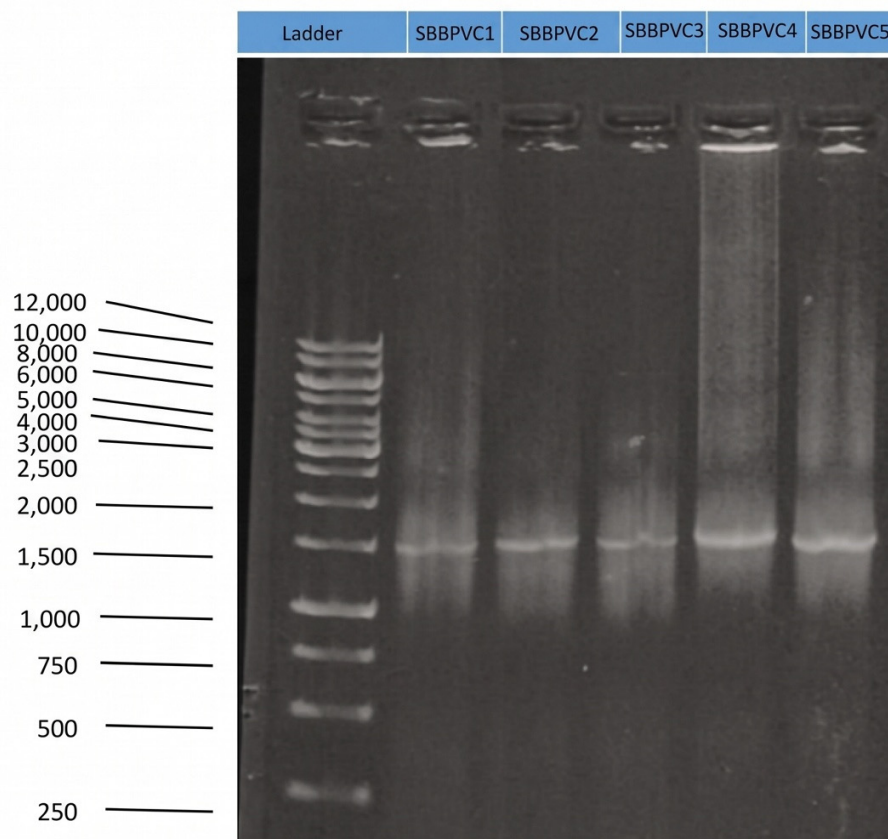
(C)

Supplementary Figure S4: Biochemical characterization of current study bacteria via catalase (CAT), mannitol sorbitol agar (MSA) and hydrogen cyanide (HCN) production tests

A: CAT test, B: MSA test, C: HCN test, P1: *A. xylosoxidans* SBBPVC1, P2: *B. licheniformis* SBBPVC2, P3: *P. citronellolis* SBBPVC3, P4: *P. stutzeri* SBBPVC4, P5: *B. flexus* SBBPVC5



(A)



(B)

Supplementary Figure S5: Agarose gel electrophoresis showing (A) extracted genomic DNA and (B) PCR amplicons of current study PVC degrading bacteria