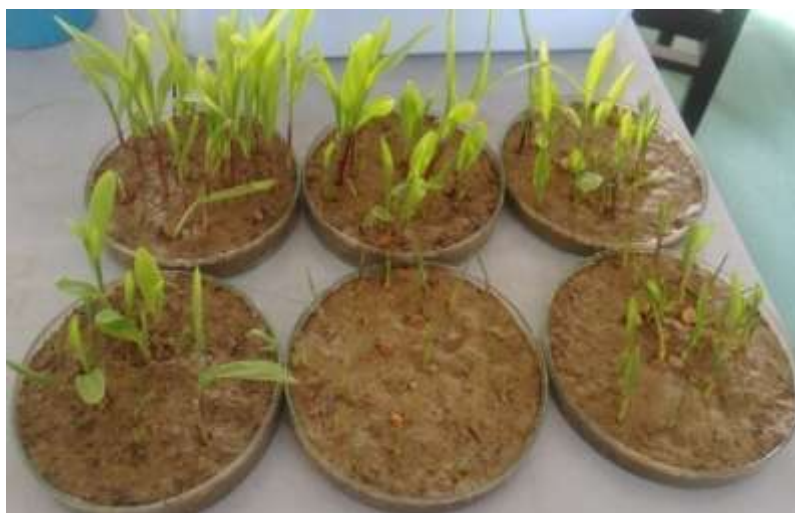
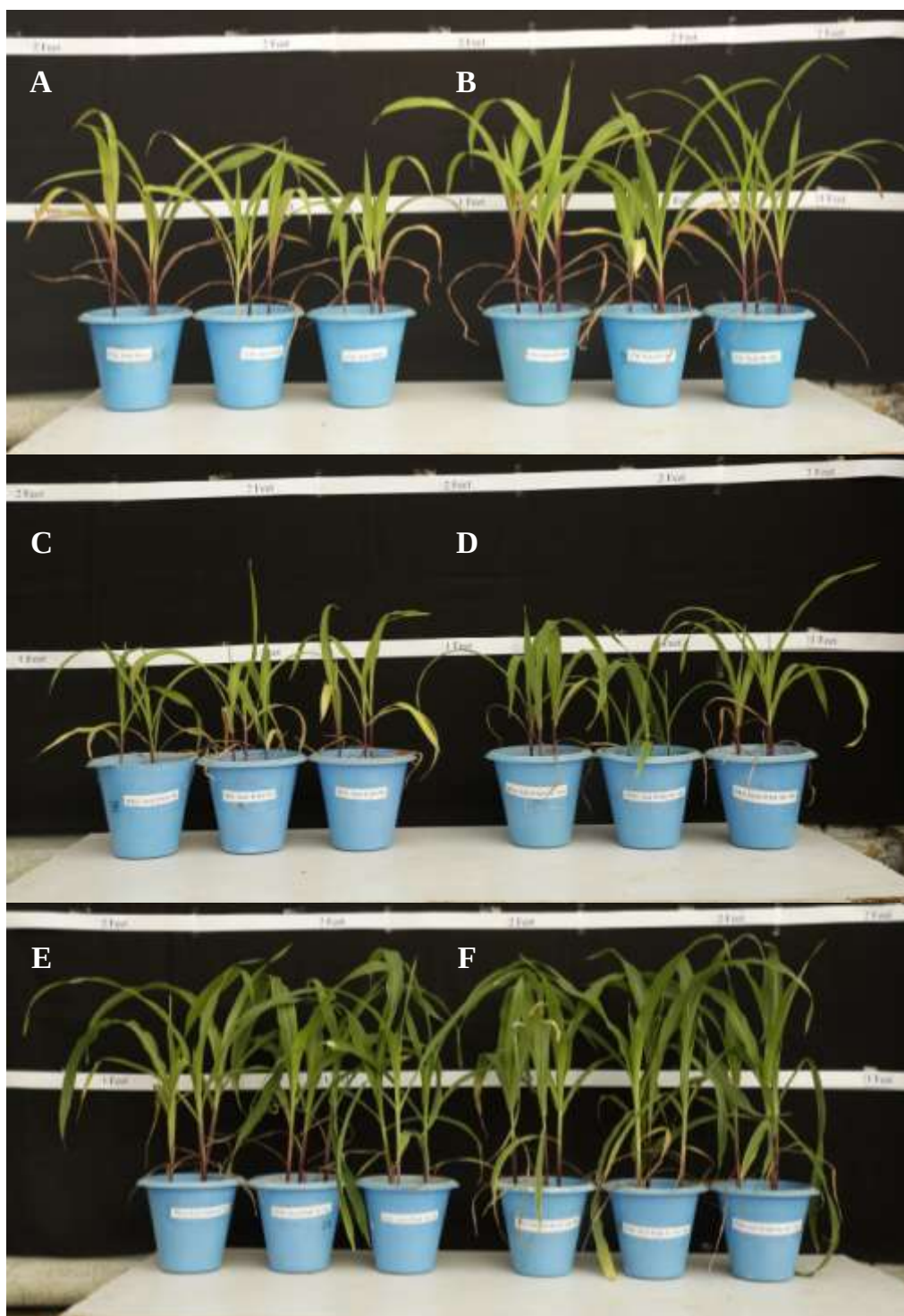




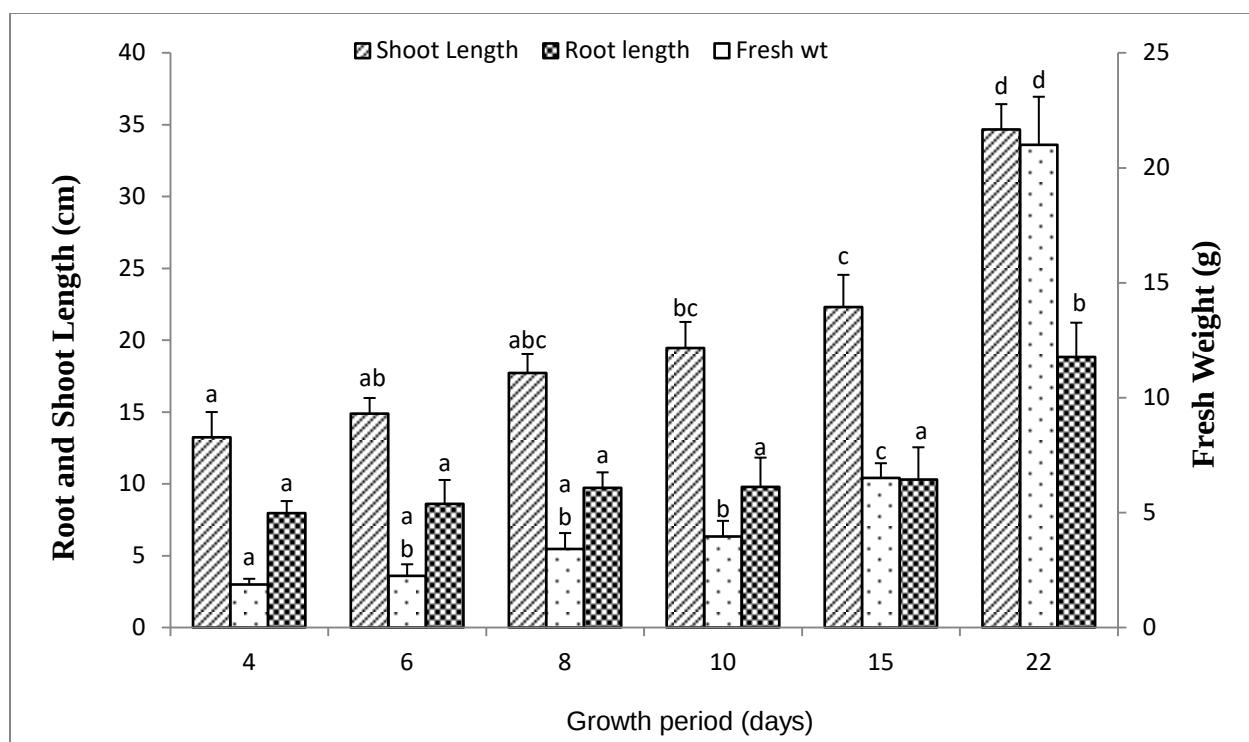
Supplementary Fig. S1: Seed (n=30 in each petridish) germination in petri-dishes having soil supplemented with 1000 µg PAHs g⁻¹ soil; (300 µg g⁻¹ PHE, 300 µg g⁻¹ ANT, 200 µg g⁻¹ FLU and 200 µg g⁻¹ PYR) (3 petri-dishes in front) and without PAH as control (3 petri-dishes in back).



Supplementary Fig. S2: Above ground growth of maize in soil A: without PAHs; B: in presence of bioaugmented microbial combination (BP10 + PS10) without PAHs; C: supplemented with $1000 \mu\text{g PAHs g}^{-1}$; D: PAHs + microbial combination; E: PAHs + fertilizer; F: PAHs + fertilizer + microbial combination. PAHs: $1000 \mu\text{g PAHs g}^{-1}$ (mixture of $300 \mu\text{g g}^{-1}$ Phenanthrene, + $300 \mu\text{g g}^{-1}$ Anthracene, + $200 \mu\text{g g}^{-1}$ Fluoranthene + $200 \mu\text{g g}^{-1}$ Pyrene)



Supplementary Fig. S3: Root growth of maize in soil A: without PAHs; B: in presence of bioaugmented microbial combination (BP10 + PS10) without PAHs; C: supplemented with 1000 μg PAHs g^{-1} ; D: PAHs and microbial combination; E: PAHs + fertilizer; F: PAHs + fertilizer and microbial combination. PAHs: 1000 μg PAHs (mixture of 300 μg g^{-1} Phenanthrene, + 300 μg g^{-1} Anthracene, + 200 μg g^{-1} Fluoranthene + 200 μg g^{-1} Pyrene).



Supplementary Fig S4: Root length, shoot length and fresh weight of plant grown in PAHs stress with time scale

Supplementary Table S1: Translocation factor of different PAHs (PHN: Phenanthrene; ANT: Anthracene; FLU: Floranthene; PYR: pyrene) along the time scale.

Growth period (days)	Shoot/ Root					Leaves/Shoot				
	PHN	ANT	FLU	PYR	Total	PHN	ANT	FLU	PYR	Total
4	0.91	0.21	0.31	0.45	0.48	0.52	0.21	0.23	0.36	0.42
6	0.22	0.25	0.23	0.38	0.24	0.43	0.17	0.41	0.32	0.34
8	0.28	0.24	0.38	0.44	0.29	0.21	0.46	0.43	0.36	0.32
10	0.37	0.47	0.63	0.77	0.47	0.11	0.24	0.95	0.51	0.36
15	0.28	0.31	0.32	0.53	0.31	0.25	0.47	0.48	0.46	0.37
22	0.29	0.07	0.18	0.33	0.19	0.07	0.28	0.12	0.15	0.12

Supplementary Table S2: Pearson's correlation between the plant parameters and PAHs present in soil and plant tissue. (RL: Root Length; SL: Shoot length; FW: Fresh weight of plant Chl: Chlorophyll; SOD: Superoxide dismutase CAT: Catalase; GPX: Glutathione peroxidase; GR: Glutathione reductase; MDHAR: monodehydroascorbate reductase; DHAR: Dehydroascorbate reductase)

	PAHs in soil	PAHs in Root	PAHs in Shoot	PAHs in leaf	RL	SL	FW	Chla	Chlb	Total Chl	SOD	CAT	GPX	GR	DHA R	MDHA R
PAHs in soil	1.00															
PAHs in Root	0.97	1.00														
PAHs in Shoot	0.97	0.99	1.00													
PAHs in leaf	0.98	0.96	0.98	1.00												
RL	-0.96	-0.94	-0.91	-0.89	1.00											
SL	-0.63	-0.64	-0.71	-0.72	0.42	1.00										
FW	-0.58	-0.60	-0.68	-0.67	0.36	1.00	1.00									
Chla	-0.58	-0.51	-0.60	-0.63	0.37	0.94	0.93	1.00								
Chlb	-0.45	-0.36	-0.45	-0.48	0.26	0.84	0.84	0.97	1.00							
Total Chl	-0.53	-0.45	-0.54	-0.57	0.32	0.91	0.90	1.00	0.99	1.00						
SOD	0.95	0.93	0.89	0.89	-0.98	-0.39	-0.33	-0.31	-0.18	-0.26	1.00					
CAT	0.94	0.86	0.89	0.96	-0.83	-0.65	-0.59	-0.63	-0.48	-0.57	0.86	1.00				
GPX	0.79	0.89	0.85	0.75	-0.88	-0.40	-0.37	-0.24	-0.13	-0.19	0.83	0.56	1.00			
GR	0.96	0.94	0.95	0.95	-0.92	-0.60	-0.56	-0.58	-0.47	-0.53	0.89	0.89	0.79	1.00		
DHAR	0.68	0.62	0.62	0.62	-0.73	-0.30	-0.28	-0.43	-0.47	-0.44	0.62	0.56	0.59	0.82	1.00	
MDHAR	0.99	0.98	0.96	0.95	-0.99	-0.55	-0.49	-0.47	-0.35	-0.42	0.98	0.89	0.87	0.95	0.69	1.00

Supplementary Table S3: Pearson's correlation between PAHs content and other soil parameters (C12O: Catechol 1, 2 dioxygenase; BP10: *Pseudomonas* sp. BP10; PS10: *Penicillium oxalicum*)

	PAHs in soil	Soil Protein	C12O	Laccase	Soil Bacteria	BP10	Soil Fungi	PS10
PAH in soil	1.00							
Soil_Protein	-0.88	1.00						
C12O	-0.89	0.94	1.00					
Laccase	-0.82	0.67	0.87	1.00				
Soil Bacteria	-0.87	1.00	0.93	0.65	1.00			
BP10	-0.74	0.86	0.95	0.82	0.85	1.00		
Soil Fungi	-0.80	0.91	0.93	0.73	0.91	0.84	1.00	
PS10	-0.74	0.82	0.95	0.87	0.81	0.97	0.89	1.00