

Acknowledgements

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Date:

Place:

Richa Jindal

List of Abbreviations

$\mu\text{g/g fw}$:	Micro gram per gram fresh weight
μl	:	Micro liter
$^{\circ}\text{C}$:	Degree celsius
$^1\text{Chl}^*$:	Singlet chlorophyll
$^1\text{O}_2$:	Singlet oxygen
$^3\text{Chl}^*$:	Chlorophyll triplet
$^3\text{O}_2$:	Ground state triplet oxygen
16S rRNA	:	16S ribosomal RNA
AA	:	Ascorbic acid
AA-GSH cycle	:	Glutathione-ascorbate cycle
ABA	:	Abscisic acid
APX	:	Ascorbate peroxidase
Arg	:	Arginine
BSA	:	Bovine serum albumin
BTB	:	Bromothymol blue
C	:	Control plant
CAS dye	:	Chromeazurol S dye
CAT	:	Catalase
CFU	:	Colony forming unit
Chl a	:	Chlorophyll a
Chl b	:	Chlorophyll b
Chl^3	:	Triplet sensitizer
cm	:	Centimetre
Conc.	:	Concentration
CR	:	Congo red
cP	:	Centipoise
Cu/Zn-SOD	:	Copper, zinc Superoxide Dismutase
cv.	:	Cultivar
D	:	Day
DAS	:	Day after sowing

Days* treat.	:	Days*treatment
DNA	:	Deoxy ribonucleic acid
DNase	:	Deoxy ribonuclease
dNTP	:	Deoxy nucleotide tri phosphate
DPPH	:	2,2-diphenyl-1-picrylhydrazyl
EC ₅₀	:	Half maximal effective concentration
EDTA	:	Ethylene diamine tetraacetic acid
EPS	:	Extracellular polysaccharide
Fe	:	Iron
Fe-SOD	:	Iron superoxide dismutase
Fig.	:	Figure
FTIR	:	Fourier transform infrared spectroscopy
FESEM	:	Field Emission Scanning Electron Microscope
g/l	:	Gram per litre
GB	:	Glycinebetaine
GPX	:	Guaiacol peroxidase
GR	:	Glutathione reductase
GSH	:	Reduced glutathione
GSSG	:	Oxidized glutathione
h	:	Hour
HCl	:	Hydrochloric acid
HCN	:	Hydrogen cyanide
HgCl ₂	:	Mercury chloride
IAA	:	Indole-3-acetic acid
IGP	:	Indole-3-glycerol phosphate
KCN	:	Potassium cyanide
K ₂ HPO ₄	:	Di potassium orthophosphate
KNO ₃	:	Potassium nitrate
KOH	:	Potassium hydroxide
kPa	:	Kilopascal
LSD	:	Least significant difference

M	:	Mole
MD	:	Malate dehydrogenase
MDA	:	Malondialdehyde
mg	:	Milli gram
mg/g fw	:	Milli gram per gram fresh weight
MgSO ₄	:	Magnesium sulfate
min	:	Minute
ml	:	Milli liter
ml/L	:	Milli liter per liter
mM	:	milli molar
Mn-SOD	:	Manganese superoxide dismutase
Mo	:	Molybdenum
MPa	:	Megapascal
MR-VP	:	Methyl red-Voges proskauer
NaCl	:	Sodium chloride
NAD	:	Nicotinamide adenine dinucleotide
NADP	:	Nicotinamide adenine dinucleotide phosphate
NaNO ₃	:	Ammonium nitrate
NBT	:	Nitro-blue tetrazolium
NCBI	:	National centre for biotechnology information
NH ₄ Cl	:	Ammonium chloride
NH ₄ (SO ₄) ₂	:	Ammonium sulphate
ngkat/mg protein	:	Nanokatal per milli gram protein
nm	:	Nano meter
NO _x	:	Air pollutants
NR	:	Nitrate reductase
O ₂ ^{•-}	:	Superoxide radical
O.D	:	Optical density
PAL	:	Phenylalanine ammonia lyase
PCR	:	Polymerase chain reaction
PDA	:	Potato dextrose agar

PEG	:	Polyethylene glycol
PGPR	:	Plant growth promoting rhizobacteria
Picokat/mg protein	:	Picokatal per milli gram protein
POD	:	Peroxidase
Pro	:	Proline
PSI	:	Photo system I
PS II	:	Photo system II
PUFA	:	Poly unsaturated fatty acid
R	:	Recovered plant
Rf	:	Retention factor
RNA	:	Ribonucleic acid
RO*	:	Excited carbonyl
RO [·]	:	Alkoxy radical
ROO [·]	:	Peroxy radical
ROS	:	Reactive Oxygen Species
rpm	:	Revolutions per minute
SD	:	Standard deviation
SDS	:	Sodium dodecyl sulfate
sec	:	Second
Sig.	:	Significance at p=0.05
SO ₂	:	Sulphur Dioxide
SOD	:	Superoxide dismutase
tAPX	:	thylakoid Ascorbate peroxidase
taq	:	Thermal aquaticus
TBA	:	Thiobarbituric acid
TCA	:	Tri-carboxylic acid
temp	:	Temperature
TLC	:	Thin layer chromatography
Trp	:	Tryptophan
U/mg protein	:	Unit per milli gram protein
UV radiation	:	Ultra violet radiation

UV-B	:	Ultraviolet- B
v/v	:	Volume per volume
w/v	:	Weight per volume
Wt	:	Weight
YEMA	:	Yeast extract mannitol agar
YEMB	:	Yeast extract mannitol broth