

ABBREVIATIONS

$^1\text{O}_2$	Singlet oxygen
2'7'DCF-DA	2'7' dichlorofluorescein diacetate
28-norCS	28-norcastasterone
6-deoxoCS	6-deoxocastasterone
6-deoxoTY	6-deoxotyphasterol
AAS	Atomic absorption microscopy
ABA	Abscisic acid
Ag	Silver
Al	Aluminium
AlCl_3	Aluminium chloride
ANOVA	Analysis of variance
APOX	Ascorbate peroxidase
As	Arsenic
AsA	Ascorbic acid
<i>At</i> COX17	<i>Arabidopsis</i> Cytochrome c oxidase
ATPase	Adenylpyrophosphatase
ATX1	Antioxidant Protein1
Au	Gold
BL	Brassinolide
BRs	Brassinosteroids
C	Carbon
Ca	Calcium
Ca^{2+}	Calcium ions
CAT	Catalase
CCH	Copper chaperons
CCS	Copper chaperons for SOD
Cd	Cadmium
cDNB	1-Chloro-2,4-dinitrobenzene
Chl a	Chlorophyll a
Chl b	Chlorophyll b
Cl	Chlorine
Co	Cobalt
CO_2	Carbon dioxide
COPT	Copper Transporter
COX17	Cytochrome c oxidase
Cr	Chromium
CS	Castasterone
Ctr	Copper Transporter proteins
Cu	Copper
Cu^+	Cuprous ion
Cu^{2+}	Cupric ion
DAF-DA	4,5 diaminofluorescein diacetate
DAS	Days after sowing
DDW	Double distilled water

DHAR	Dehydroascorbate reductase
DNA	Deoxyribonucleic acid
DNPH	2,4-Dinitrophenylhydrazine
DTNB	5,5'-dithiobis-(2-nitrobenzoic acid)
DW	Dry weight
EBL	Epibrassinolide
EDS	Energy dispersive X-ray spectroscopy
EDTA	Ethylene diamine tetra acetic acid (disodium salt)
ESEM	Environmental scanning electron microscope
Fe	Iron
FW	Fresh weight
GDHP	Guaiacol dehydrogenation product
GPOX	Glutathione peroxidase
GR	Glutathione reductase
GSB	Glutathione-s-bimane
GSH	Glutathione
GSSG	Oxidized glutathione
GST	Glutathione-s-transferase
H ₂ O	Water
H ₂ O ₂	Hydrogen peroxide
H ₂ SO ₄	Sulfuric acid
HBL	Homobrassinolide
HCl	Hydrochloric acid
HClO ₄	Perchloric acid
Hg	Mercury
His	Histidine
HMA	Heavy metal ATPases
HNO ₃	Nitric acid
HPLC	High Performance Liquid Chromatography
HSD	Honestly significant difference
IC-50	Half maximal inhibitory concentration
IRGA	Infra-red gas analyzer
K	Potassium
MCB	Monochlorobimane
MDA	Malondialdehyde
MDHAR	Monodehydroascorbate reductase
Met	Methionine
Mg	Magnesium
Mg ²⁺	Magnesium ions
MGDG	Monogalactosyldiglycerol
Mn	Manganese
Mo	Molybdenum
MTs	Metallothioneins
N	Nitrogen
NA	Nicotinamine
Na	Sodium

Na ₂ CO ₃	Sodium carbonate
NADPH	Nicotinamide adenine dinucleotide phosphate
NaNO ₂	Sodium nitrite
NaOH	Sodium hydroxide
NBT	Nitro blue tetrazolium
Ni	Nickel
NO	Nitric oxide
NO ₂ ⁻	Nitrite ion
NPT	Non-protein thiols
N-RAMP	Natural resistance-associated macrophage protein
O ₂	Oxygen
O ₂ ⁻	Superoxide anion radical
OH ⁻	Hydroxyl radical
P	Phosphorus
PAA	P-type ATPase of Arabidopsis
PAGE	Polyacrylamide gel electrophoresis
Pb	Lead
PCD	Programmed cell death
PCH	Periplasmic chaperone
PCs	Phytochelatins
pH	Negative log of hydrogen ion concentration
PI	Propidium iodide
PMSF	Phenylmethylsulfonyl fluoride
POD	Guaiacol peroxidase
PPO	Polyphenol oxidase
PS I	Photosystem I
PS II	Photosystem II
Pt	Platinum
PT	Protein thiols
PVP	Polyvinylpyrrolidone
RAN	Response to antagonist I
ROS	Reactive oxygen species
S	Sulfur
SDS	Sodium dodecyl sulfate
SEM	Scanning electron microscope
SOD	Superoxide dismutase
TBA	Thiobarbituric acid
TBARS	Thiobarbituric acid reactive substances
TCA	Trichloroacetic acid
TE	Teasterone
TEMED	Tetramethylethylenediamine
TY	Typhasterol
UHPLC	Ultra high performance liquid chromatography
ZIP	zinc-regulated transporters, iron-regulated transporter-like protein
Zn	Zinc

UNITS

A	Absorbance
%	Per cent
°C	Degree centigrade
µg	Microgram
µM	Micro molar
Cm	Centimeter
G	Gram
H	Hour
Min	Minute
Kg	Kilogram
L	Litre
M	Molar
M	Molal
mA	Milli ampere
mg	Milligram
ml	Milliliter
mM	Milli molar
Mol	Moles
V	Volt
ng	Nano gram
nm	Nanometer
nM	Nano molar
ppm	Parts per million
rpm	Revolutions per minute
µg	Micro gram
µl	Micro liter

SYMBOLS

µ	Micron
α	Alpha
β	Beta
ε	Epsilon
γ	Gamma
Ø	Phi
Δ	Delta
Λ	Lambda