

DECLARATION

I, **M. Mythili** declare that the thesis entitled “**Impact of Growth Promoting Substances on the Growth Parameters of Tannery Effluent-fed *Crotalaria juncea* L.**” submitted by me for the award of the degree of Doctor of Philosophy (Ph.D.) is a record of work done by me during the period from January 2014 to February 2019 under the guidance of **Dr. Mujeera Fathima, M.Sc., M.Phil., Ph.D., PGDCA.,** Associate Professor and Head, PG & Research Department of Botany, Government Arts College for Men, Nandanam, Chennai 600 035, Tamilnadu, India, and has not formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or other Titles in this University or any other University or other similar Institutions of higher learning.

Place: Chennai

Signature of the Candidate

Date:

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LIST OF ABBREVIATIONS

AAS	Atomic Absorption Spectrophotometer
AbE	Abaxial Epidermis
AdC	Adaxial Cone
AdE	Adaxial Epidermis
AdS	Adaxial side
AFLP	Amplified Fragment Length Polymorphism
BOD	Biochemical Oxygen Demand
C	Control
CB	Cortical Bundle
CFTI	Central Footwear Training Institute
CGR	Crop growth rate
Chl	Chlorophyll
CLRI	Central Leather Research Institute
Co	Cortex
COD	Chemical Oxygen Demand
Cr	Chromium
Cr (VI)	Hexavalent Chromium
CSIR	Council of Scientific and Industrial Research
Cu	Cuticle
CVB	Cortical Vascular Bundle
(d)	drench
DAS	Days after sowing
DMSO	Dimethyl sulfoxide
DNA	Deoxyribonucleic acid
DO	Dissolved Oxygen

EC	Electrical Conductivity
EDTA	Ethylene diamine tetra acetic acid
Ep	Epidermis
FAA	Formaldehyde-Acetic acid-Ethyl alcohol
FDDI	Footwear Design and Development Institute
Fi	Fibre
(fs)	foliar spray
G	Water (sd) + 100 ppm Gibberellin (fs)
GA/GA ₃	Gibberellin
GF	Gelatinous Fibres
GP	Ground Parenchyma
Gr	Groove
GT	Ground tissue
HgCl ₂	Mercuric chloride
IAA	Indole-3-acetic acid
ICAR	Indian Council of Agricultural Research
La	Lamina
LM	Leaf margin
LSD	Least Significant Difference
MR	Midrib
MSME	Micro, Small and Medium Enterprises
MSW	Municipal Solid Waste
MX	Metaxylem
N	Nitrogen
Na	Sodium
NAA	Naphthalene Acetic Acid
NPK	Nitrogen, Phosphorous, Potassium

PC	Pith Canal
PCR	Polymerase Chain Reaction
PGRs	Plant Growth Regulators
Ph	Phloem
PhF	Phloem Fibres
PhGF	Phloem Gelatinous Fibres
Pi	Pith
PX	Protoxylem
QTL	Quantitative trait locus
RAPD	Random Amplification of Polymorphic DNA
RFLP	Restriction Fragment Length Polymorphism
Ri	Ridge
RNA	Ribonucleic acid
RPM	Revolutions per minute
SAU	South Asian University
Sc	Sclerenchyma
SD	Standard Deviation
SE	Standard Error
SIPCOT	State Industries Promotion Corporation of Tamilnadu
(s)	Spray
(sd)	Soil drench
SPh	Secondary Phloem
SSR	Simple Sequence Repeats
SVI	Seedling Vigour Index
SX	Secondary Xylem
SXF	Secondary Xylem Fibres
T1	50% Tannery effluent (sd) + Deionised water (fs)

T1V1	50% Tannery effluent (sd) + 10% Vermiwash (fs)
T1V2	50% Tannery effluent (sd) + 20% Vermiwash (fs)
T2	100% Tannery effluent (sd) + Deionised water (fs)
T2V1	100% Tannery effluent (sd) + 10% Vermiwash (fs)
T2V2	100% Tannery effluent (sd) + 20% Vermiwash (fs)
T1G	50% Tannery effluent (sd) + 100 ppm Gibberellin (fs)
T2G	100% Tannery effluent (sd) + 100 ppm Gibberellin (fs)
TBA	Tertiary-butyl alcohol
TDS	Total dissolved solids
Tr	Trichome
T.S.	Transverse section
T.S.S.	Total Suspended Solids
UPGMA	Unweighted Pair Group Method with Arithmetic Mean
UV	Ultraviolet
V1	Water (sd) + 10% Vermiwash (fs)
V2	Water (sd) + 20% Vermiwash (fs)
VB	Vascular Bundle
Ve	Vessel
VNTR	Variable Number Tandem Repeat
X	Xylem
XF	Xylem Fibres
XR	Xylem Ray