

APPENDIX

**TABLE - 3 : ANNUAL AVERAGE CONCENTRATIONS OF
POLLUTANTS AT DIFFERENT LOCALITIES ($\mu\text{g m}^{-3}$)**

Location	Distance from Source (Km)	SO ₂	NO _x	SPM
Reference (R1)	20.00 - 22.00	4.0 (1.4 - 8.2)	28.5 (7.0 - 33.9)	235 (88 - 374)
Reference (R2)	24.00 - 25.00	2.5 (2.0 - 3.5)	12.5 (9.8 - 16.1)	135 (88 - 135)
Locality 1	0.75 - 1.00	6.5 (1.2 - 24.5)	23.2 (4.7 - 58.7)	272 (88-374)
Locality 2	0.75 - 1.00	7.6 (1.6 - 23.2)	32.6 (8.7 - 86.8)	255 (53-483)
Locality 3	0.50 - 0.75	13.7 (1.6 - 96.4)	60.7 (7.8 - 131.5)	207 (100 - 364)
Locality 4	0.50 - 0.75	15.4 (1.6 - 76.1)	45.4 (7.3 - 116.3)	253 (74 - 497)
Locality 5	0.30 - 0.40	20.9 (4.6 - 125.4)	61.6 (9.8 - 243.0)	178 (101 - 441)

Values given in parentheses are minimum and maximum concentration of pollutants over the period for one year.

**TABLE - 4 : SEASONAL AVERAGE CONCENTRATIONS OF POLLUTANTS
AT DIFFERENT LOCALITIES ($\mu\text{g. m}^{-3}$)**

Location	Distance from source (Km)	Summer (March to June)			Monsoon (July to Oct.)			Winter (Nov. to Feb.)		
		SO ₂	NO _x	SPM	SO ₂	NO _x	SPM	SO ₂	NO _x	SPM
Reference (R1)	20.00 - 22.00	4.1	24.2	221	3.0	27.5	134	5.0	33.9	351
Reference (R2)	24.00 - 25.00	3.0	15.2	100	2.1	10.0	115	2.5	12.3	135
Locality 1	0.75 - 1.00	4.6	25.3	268	5.2	28.4	176	10.5	45.9	374
Locality 2	0.75 - 1.00	6.1	25.6	366	4.4	20.8	116	12.5	51.4	284
Locality 3	0.50 - 0.75	11.4	40.0	195	15.3	43.3	180	14.5	98.8	246
Locality 4	0.50 - 0.75	9.4	37.3	258	14.8	34.0	160	22.1	64.9	341
Locality 5	0.30 - 0.40	29.9	87.5	202	22.8	50.9	141	10.0	46.4	192

**TABLE - 5 : METEOROLOGICAL PARAMETERS RECORDED
IN THE STUDY AREA***

Month	Temperature °C		Wind Speed (Km/h)	Relative Humidity (%)
	Minimum	Maximum		
March	18.9	35.4	6.4	41
April	19.6	38.3	8.2	52
May	25.9	39.5	8.5	54
June	28.1	39.0	13.6	62
July	26.1	35.2	12.4	74
August	25.4	31.9	9.7	85
September	24.8	35.0	7.3	71
October	23.2	36.5	4.1	55
November	20.3	31.8	6.3	67
December	12.1	32.0	5.2	60
January	12.5	30.2	5.4	57
February	14.0	30.5	6.0	48

* Data given are monthly averages for the period 1983-1986; obtained from the Meteorological Observatory, M.S. University, Baroda.

TABLE - 6 : SPECIES DISTRIBUTION ON WINDWARD AND LEEWARD DIRECTIONS

WINDWARD DIRECTION :

Name of the species	Distance from the source																			
	1.25 km					1.75 km					2.5 km					3.0 km				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
<u>Zizyphus jujuba</u> lam.	++		+	+			++	++		++		++			++		+	++	+	+
<u>Calotropis procera</u> (L.) R.Br.	+	++		+	++	+	+			+	+		++	+		+	+			+
<u>Prosopis juliflora</u> (Sw.) DC.	+	+	++		+	++	+	++	+		++	++		++	+	++		+	++	
<u>Portulaca oleracea</u> L.		++	+	+	+			+	++	++	++	+		+		++	++	+	++	+
<u>Boerhavia diffusa</u> L.	+	+	+	+	+			++	++		++		++		+		+	+		+
<u>Cenchrus ciliaris</u> L.	+		+	+	+	+		++	+	++		+		+		++			++	+
<u>Chloris barbata</u> Sw.	++	++		++	+						++		++	++	+		++		+	++
<u>Achyranthes aspera</u> L.		+	+	+	++	++	++	+	+		++	+		++	+	+	++			
<u>Cocculus hirsutus</u> (L.) Diels.	+	+	+	++		+	+	+		+	+		+	++	+		+	+	+	+
<u>Capparis decidua</u> (Forsk.) Edgew.	++	+	++		++						++		+	+	+	++		++	++	++
<u>Tridax procumbens</u> L.						++	+		++	+	++		+	+	+	++	+	++		++
<u>Euphorbia hirta</u> L.						+		+	++	++		+	+		++		+		++	
<u>Rhynchosia minima</u> (L.) DC.						+	++		+		+		++	+		+		+		+
<u>Goniogyna hirta</u> (Willd.) Ali.						++	+	++		+					++		++		+	++
<u>Pergularia daemia</u> (Forsk) Chiov.						+	+		++		++	+	+	+		++				
<u>Cynodon dactylon</u> (L.) Pers.						+	++	++		++		+	+	++	++	+	+	++	++	++
<u>Ipomoea alba</u> L.													+		+		++	+	++	++
<u>Bergia suffruticosa</u> (Del.) Fenzl.						+	+		+	+	++	+	+				+	++	++	
<u>Cassia tora</u> L.								+	+	++		+	++		++	++	++			++
<u>Tephrosia villosa</u> (L.) Pers.											+			++		++		++		
<u>Chloris montana</u> Roxb.											+	++	+	++		+	+	++	+	+
<u>Phyllanthus niruri</u> acut non L.											+	+	++		+		++	++	++	++
<u>Hydrocotyl asiatica</u> L.											+				+	+	+		+	
<u>Vernonia cinerea</u> (L.) Less.																++	+	+		++
<u>Eclipta prostrata</u> (L.) L.																+	+	++	+	+

LEEWARD DIRECTION :

Name of the species	Distance from the source														
	1.25 km					1.75 km					2.00 km				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
<u>Evolvulus</u> <u>alsinoides</u> (L.) L.	+			+	+	++	+		++	+	+	+	+	+	+
<u>Launaea</u> <u>residifolia</u> (L.) Druce	++	+	+		++	+	++	+		++	+	++	+	+	++
<u>Withania</u> <u>somnifera</u> (L.) Dunal		+	+	++		++	+	+	+	+	+		+	++	++
<u>Datura</u> <u>innoxia</u> Mill.	+	+	++		+		+	+	+		++	+		+	+
<u>Blumea</u> <u>obliqua</u> (L.) Druce.	+	+	+	+		+		+	++	++	+	++	+	+	
<u>Zaleya</u> <u>govindia</u> (Buch-Ham) Narr.	+	+		+	+	+	+	+		+		+	+	+	+
<u>Alternanthera</u> <u>sessilis</u> (L.) DC.	++		++	+	+	+	++		+	+	++	+	+		+
<u>Azadirachta</u> <u>indica</u> Juss. (Saplings)		+		+	+	+	+	++	++		+	+	++	+	++
<u>Tridax</u> <u>procumbens</u> L.	+		+		+	+	++	++		+	++	++		+	++
<u>Ipomoea</u> <u>alba</u> L.	+	+		+	+	++			+	++	+		+	+	+
<u>Tephrosia</u> <u>villosa</u> (L.) Pers.		+	+	+			+	++	++	+	+	+	++	+	+
<u>Cynodon</u> <u>dactylon</u> (L.) Pers.	+		+	+		+	++	++		+	+	+			+
<u>Calotropis</u> <u>gigantia</u> (L.) R.Br.	+	+	+		++	+	+	+	+	+		+	+	+	+
<u>Phyllanthus</u> <u>niruri</u> acut non L.		++	+	+	+	+	+	+	+	++	+	+	+		+
<u>Cassia</u> <u>tora</u> L.	+		+	+		+		+	+		+	+		++	
<u>Ipomea</u> <u>pes-caprae</u> (L.) Sw.			+		+	+	+	+	+	++	++	+	++	++	++
<u>Zizyphus</u> <u>jububa</u> Lam.		+		++	+	+	+	+	+	+	+	+	+	+	+
<u>Chloris</u> <u>montana</u> Roxb.											++	+	++	++	+
<u>Prosopis</u> <u>juliflora</u> (Sw.) DC							+			++	+	+	++	++	++

All the species were present at Reference (R1); each quadrat has an average of 18 species.

**TABLE - 8 : CHANGES IN VARIOUS GROWTH AND REPRODUCTIVE PARAMETERS
IN MORINGA PTERYGOSPERMA GOERT., GROWING AT DIFFERENT
LOCALITIES**

Locality	Height of the tree (mtrs.)	C B H (mtrs.)	Canopy cover (mtr. ²)	Leaf area per leaf (cm)	Leaf area damage (%)	Leafless- ness (%)	Flowering (%)	Fruiting (%)
Reference 1	11.97	0.89	121.30	100	-	-	100	100
Locality 1	11.20	0.85	94.36	90	5	15	85	78
Locality 2	11.10	0.85	93.60	90	8	25	80	76
Locality 3	10.53	0.83	75.74	85	10	25	80	75
Locality 4	10.22	0.82	63.68	80	12	30	80	70
Locality 5	9.87	0.73	58.72	65	20	25	75	70

**TABLE - 9 : CHANGES IN VARIOUS GROWTH AND REPRODUCTIVE PARAMETERS
IN TAMARINDUS INDICA L., GROWING AT DIFFERENT LOCALITIES**

Locality	Height of the tree (mt.s.)	C B H (mt.s.)	Canopy cover (mt.s. ²)	Leaf area per leaf (cm)	Leaf area damage (%)	Leafless- ness (%)	Flowering (%)	Fruiting (%)
Reference 1	13.90	1.35	110.8	11.0	-	-	100	100
Locality 1	13.56	1.31	100.4	10.7	5	5	90	86
Locality 2	13.40	1.23	87.1	10.0	9	10	85	83
Locality 3	12.97	1.24	82.7	9.4	10	12	85	80
Locality 4	12.80	1.23	78.9	9.0	10	15	83	77
Locality 5	12.68	1.19	73.7	8.5	10	15	80	72

BIOCHEMICAL CHANGES IN THE THREE TREE SPECIES
GROWING AT DIFFERENT LOCALITIES

(TABLES 10 - 20)

R₁ Reference 1

L Locality

Sp₁ Azadirachta indica Juss.

Sp₂ Moringa pterygosperma Goert.

Sp₃ Tamarindus indica Linn.

TABLE - 10 : TOTAL CHLOROPHYLL (mg-g.⁻¹ Fr.Wt.)

	SUMMER						MONSOON						WINTER					
	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅
Sp ₁	2.25	2.02	1.84	1.71	1.68	1.52	2.45	2.26	2.02	1.89	1.94	1.60	2.00	1.84	1.76	1.58	1.14	1.24
	2.00	2.12	1.93	1.87	1.82	1.47	2.58	2.46	2.28	1.92	1.48	1.71	2.15	1.92	1.67	1.48	1.04	1.34
	2.47	1.94	1.87	1.60	1.87	1.28	2.91	2.51	2.17	1.99	1.57	1.68	2.05	1.75	1.88	1.72	1.34	1.48
	2.52	2.28	1.71	1.77	1.72	1.00	2.78	2.16	1.90	2.27	2.21	1.41	1.91	1.77	1.91	1.67	0.96	1.17
	2.49	2.22	2.05	1.81	1.61	1.78	2.50	2.05	1.87	1.70	2.11	1.38	2.28	2.12	2.28	1.38	0.88	1.00
	2.14	1.90	2.18	1.52	1.92	1.92	2.68	2.30	2.31	1.75	1.98	1.78	2.30	2.28	2.17	1.41	1.41	1.10
	2.81	2.31	1.77	1.58	1.44	1.55	2.34	2.41	2.07	2.00	2.31	1.88	1.85	1.99	1.88	1.62	1.11	1.28
	2.70	2.00	1.99	1.74	1.70	1.80	2.80	2.21	2.11	1.68	1.88	1.92	1.99	2.20	1.61	1.43	1.20	1.29
Sp ₂	2.19	2.00	1.91	1.62	1.68	1.44	2.44	2.19	1.97	1.80	1.82	1.62	2.18	1.92	1.85	1.60	1.27	1.32
	2.28	2.48	1.71	1.71	1.72	1.72	2.81	2.33	1.80	1.94	1.97	1.95	2.21	1.71	1.80	1.45	1.21	1.68
	2.37	2.17	1.82	1.82	1.86	1.81	2.88	2.41	1.68	1.72	1.88	1.67	2.31	1.98	1.68	1.52	1.48	1.60
	2.58	2.23	2.40	1.91	1.41	1.32	2.61	2.23	2.22	1.83	2.05	1.90	2.11	2.21	1.62	1.79	1.11	1.41
	2.65	2.40	2.21	1.48	1.52	1.37	2.72	2.00	2.27	1.99	2.17	1.48	2.00	2.30	1.94	1.67	0.92	1.21
	2.77	2.35	1.68	1.53	1.93	1.28	2.58	1.94	2.12	2.08	1.61	1.41	2.21	1.90	1.99	1.83	0.97	1.17
	2.48	1.90	1.80	1.94	1.59	1.31	2.34	2.58	2.08	1.74	1.71	1.38	1.90	1.78	2.05	1.98	1.52	1.30
	2.00	1.98	1.87	1.86	1.64	1.40	2.66	2.64	1.90	1.68	1.90	1.60	2.36	1.84	2.00	1.49	1.25	1.37
Sp ₃	2.59	2.27	2.20	2.10	2.12	1.79	2.78	2.53	2.47	2.25	2.34	1.98	2.52	2.37	2.40	2.14	1.88	2.02
	2.83	2.52	2.17	2.42	2.37	1.70	2.91	2.68	2.53	2.57	2.41	1.84	2.64	2.27	2.58	2.05	1.78	2.09
	2.91	2.32	2.48	2.17	2.48	1.61	2.62	2.57	2.58	2.32	2.58	1.74	2.58	2.10	2.01	2.28	1.71	2.28
	2.62	2.41	2.31	2.00	1.92	1.68	2.54	2.28	2.41	2.48	2.00	2.22	2.41	2.49	2.43	2.17	1.84	1.42
	2.80	2.00	1.82	1.91	1.73	1.98	2.88	2.41	2.32	2.11	2.12	2.45	2.32	2.00	2.52	2.39	2.11	1.84
	2.48	2.44	1.87	1.82	1.82	1.94	2.70	2.68	2.38	2.05	2.17	2.31	2.60	1.94	2.27	1.98	1.67	2.37
	2.40	2.17	2.41	2.11	2.20	1.58	2.94	2.78	2.57	2.18	2.20	1.68	2.48	2.58	2.21	1.90	1.77	2.14
	2.31	1.97	2.38	1.94	2.10	1.84	2.82	2.45	2.63	2.08	1.99	1.94	2.29	2.67	2.08	2.00	2.08	1.65

TABLE - 11 : CHLOROPHYLL a (mg. g.⁻¹ Fr.Wt.)

	SUMMER						MONSOON						WINTER					
	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅
Sp ₁	1.40	1.22	1.10	1.05	0.93	0.88	1.50	1.41	1.28	1.13	1.15	0.93	1.28	1.20	1.11	0.93	0.70	0.75
	1.28	1.34	1.17	1.15	0.99	0.80	1.61	1.49	1.31	1.38	1.43	0.97	1.45	1.01	1.28	1.27	0.81	0.85
	1.35	1.40	1.28	1.28	0.71	0.95	1.64	1.53	1.12	1.27	1.12	0.81	1.39	1.28	1.30	1.28	0.92	0.89
	1.56	1.12	1.01	0.97	0.86	0.75	1.53	1.24	1.35	1.20	1.27	0.74	1.24	1.17	0.92	0.92	0.97	0.71
	1.51	1.04	0.98	0.84	1.11	0.77	1.49	1.38	1.44	1.03	1.31	1.13	1.17	1.05	0.86	0.81	0.61	0.61
	1.37	1.28	0.96	1.04	1.12	1.01	1.38	1.29	1.17	0.95	1.10	1.07	1.10	1.31	1.09	0.63	0.52	0.52
	1.24	1.23	1.27	1.22	1.02	1.04	1.41	1.59	1.24	1.11	1.05	0.84	1.31	1.37	1.07	0.78	0.54	0.91
	1.62	1.30	1.02	0.79	0.79	0.83	1.45	1.36	1.36	1.08	0.80	1.01	1.27	1.23	1.34	0.81	0.60	0.74
Sp ₂	1.53	1.37	1.21	1.10	0.98	0.90	1.61	1.34	1.18	1.04	1.06	0.90	1.36	1.20	1.10	1.00	0.70	0.82
	1.64	1.45	1.01	1.17	0.94	0.94	1.78	1.30	1.27	1.27	1.42	0.99	1.45	1.34	1.24	0.80	0.85	0.91
	1.71	1.53	1.23	1.38	0.89	0.81	1.83	1.13	1.38	1.21	1.23	1.21	1.49	1.42	1.27	0.81	0.89	0.97
	1.80	1.59	1.07	1.29	0.78	0.73	1.43	1.27	1.08	1.01	1.31	1.13	1.54	1.28	1.01	0.92	0.82	1.08
	1.41	1.26	0.98	0.99	1.12	0.64	1.49	1.24	1.01	0.90	0.91	0.81	1.30	1.11	0.93	1.21	0.65	0.75
	1.47	1.21	1.41	0.97	1.17	1.17	1.51	1.48	0.97	0.81	0.80	0.63	1.17	1.04	0.98	1.15	0.45	0.65
	1.31	1.17	1.38	0.84	1.01	1.00	1.68	1.54	1.30	0.94	0.75	0.68	1.21	1.00	1.14	1.04	0.50	0.68
	1.39	1.34	1.39	1.05	0.96	1.06	1.59	1.45	1.20	1.12	1.02	0.85	1.28	1.21	1.05	1.10	0.72	0.70
Sp ₃	1.61	1.38	1.31	1.28	1.28	1.02	1.72	1.60	1.56	1.41	1.38	1.26	1.53	1.40	1.43	1.31	1.10	1.19
	1.78	1.58	1.48	1.27	1.47	0.90	1.97	1.78	1.68	1.70	1.47	1.47	1.43	1.49	1.47	1.58	1.27	1.38
	1.42	1.44	1.57	1.34	1.38	0.83	1.90	1.84	1.74	1.38	1.56	1.43	1.38	1.58	1.53	1.53	1.39	1.26
	1.83	1.35	1.22	1.12	1.40	0.95	1.48	1.40	1.31	1.65	1.30	1.06	1.37	1.67	1.62	1.26	1.47	1.43
	1.47	1.22	1.10	1.05	1.27	1.16	1.57	1.45	1.42	1.14	1.22	1.16	1.57	1.24	1.24	1.16	1.02	1.35
	1.53	1.37	1.00	1.43	1.31	1.28	1.68	1.54	1.37	1.27	1.07	1.19	1.68	1.24	1.27	1.07	0.87	1.02
	1.57	1.17	1.28	1.29	1.07	1.10	1.70	1.38	1.53	1.28	1.63	1.22	1.75	1.18	1.35	1.40	0.82	0.93
	1.64	1.49	1.53	1.01	1.10	1.05	1.85	1.90	1.80	1.44	1.43	1.30	1.59	1.38	1.48	1.20	0.90	0.98

TABLE - 12 : CHLOROPHYLL b (mg. g.⁻¹ Fr.Wt.)

	SUMMER						MONSOON						WINTER					
	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅
Sp ₁	0.80	0.71	0.65	0.58	0.68	0.61	0.91	0.81	0.73	0.65	0.67	0.60	0.71	0.67	0.64	0.55	0.42	0.45
	0.87	0.98	0.69	0.68	0.76	0.69	0.93	0.87	0.49	0.74	0.73	0.42	0.82	0.61	0.69	0.40	0.49	0.25
	0.98	0.84	0.46	0.73	0.78	0.94	1.06	0.92	0.58	0.85	0.79	0.45	0.94	0.53	0.85	0.37	0.58	0.20
	0.67	0.93	0.49	0.79	0.83	0.82	1.10	0.97	0.58	0.89	0.84	0.38	0.87	0.47	0.89	0.48	0.43	0.42
	0.72	0.54	0.58	0.51	0.88	0.48	0.81	0.94	0.67	0.52	0.89	0.57	0.68	0.69	0.73	0.67	0.60	0.38
	0.61	0.57	0.77	0.48	0.47	0.40	0.94	0.72	0.85	0.47	0.43	0.72	0.58	0.78	0.42	0.61	0.34	0.62
	0.83	0.49	0.84	0.48	0.58	0.37	0.68	0.60	0.88	0.39	0.40	0.78	0.57	0.84	0.47	0.60	0.22	0.60
	0.94	0.65	0.72	0.38	0.47	0.59	0.87	0.64	0.99	0.62	0.64	0.84	0.48	0.80	0.50	0.76	0.27	0.70
Sp ₂	0.84	0.75	0.68	0.60	0.54	0.48	0.97	0.90	0.79	0.74	0.76	0.68	0.76	0.70	0.66	0.61	0.46	0.51
	0.89	0.79	0.73	0.42	0.60	0.56	0.91	1.12	0.88	0.68	0.64	0.87	0.82	0.61	0.53	0.40	0.51	0.59
	0.88	0.88	0.77	0.47	0.58	0.67	1.20	1.00	0.87	0.62	0.69	0.81	0.87	0.67	0.57	0.38	0.58	0.67
	0.97	0.93	0.84	0.54	0.72	0.62	1.17	1.01	0.92	0.50	0.58	0.85	0.92	0.55	0.68	0.52	0.62	0.64
	0.98	0.77	0.62	0.67	0.77	0.29	1.06	0.97	0.72	0.62	0.71	0.61	0.98	0.59	0.71	0.57	0.49	0.53
	0.72	0.62	0.54	0.75	0.43	0.38	0.86	0.80	0.68	0.87	0.84	0.68	0.53	0.81	0.70	0.72	0.38	0.38
	0.77	0.66	0.55	0.70	0.38	0.37	0.78	0.72	0.81	0.91	0.93	0.33	0.57	0.87	0.82	0.83	0.33	0.38
	0.68	0.59	0.69	0.63	0.31	0.46	0.82	0.68	0.54	0.78	0.95	0.57	0.62	0.79	0.64	0.86	0.27	0.37
Sp ₃	0.93	0.84	0.82	0.78	0.80	0.71	0.99	0.91	0.88	0.80	0.77	0.71	0.89	0.83	0.84	0.77	0.70	0.74
	0.97	0.88	0.89	0.71	0.89	0.78	1.08	0.97	0.93	0.87	0.81	0.79	0.97	0.89	0.88	0.75	0.81	0.81
	1.06	0.98	0.94	0.64	0.94	0.87	1.27	1.08	0.95	0.93	0.87	0.88	0.98	0.95	0.99	0.85	0.86	0.87
	1.12	1.03	0.97	0.73	0.98	0.93	1.20	1.13	0.97	0.98	0.94	0.82	1.04	0.97	0.98	0.89	0.91	0.65
	0.87	0.87	0.87	0.86	0.82	0.63	0.94	0.83	1.03	0.73	0.91	0.93	0.80	0.65	0.78	0.93	0.65	0.61
	0.81	0.63	0.67	0.89	0.63	0.67	0.81	0.84	0.89	0.68	0.62	0.52	0.72	0.69	0.68	0.67	0.62	0.58
	0.75	0.69	0.64	0.69	0.67	0.53	0.83	0.72	0.72	0.64	0.55	0.57	0.75	0.72	0.77	0.69	0.51	0.75
	0.91	0.78	0.75	0.92	0.64	0.57	0.77	0.75	0.69	0.70	0.68	0.49	1.00	0.79	0.78	0.58	0.53	0.90

TABLE - 13 : TOTAL PROTEINS (mg.g.⁻¹ Fr.Wt.)

	SUMMER						MONSOON						WINTER					
	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅
Sp ₁	17.27	16.10	15.80	14.65	14.70	14.22	17.12	15.75	15.43	14.10	14.13	13.71	14.87	12.25	12.10	10.75	9.20	9.00
	17.14	16.38	15.41	14.35	14.85	14.28	17.21	15.85	15.71	14.17	14.17	13.84	14.37	12.57	12.27	10.89	9.45	9.87
	16.45	16.21	15.37	14.40	14.91	14.48	17.45	15.37	15.05	14.34	14.35	13.35	14.48	12.61	12.35	10.45	9.57	9.15
	16.57	15.71	15.85	14.75	14.34	14.01	16.88	15.45	15.00	14.47	14.53	13.47	14.97	12.01	12.40	10.51	9.52	8.34
	17.48	15.68	16.10	14.81	14.45	13.97	16.74	15.91	15.62	13.82	13.85	13.76	15.01	11.81	11.78	10.72	8.67	8.45
	17.47	15.85	16.21	14.63	14.71	13.85	17.22	16.00	15.67	13.87	13.78	13.96	15.07	11.87	11.81	10.78	8.58	8.67
	17.51	16.21	15.87	14.55	14.65	14.41	17.11	15.73	15.47	13.91	13.95	13.87	14.82	12.01	12.20	10.62	9.34	9.52
	17.35	16.17	15.91	14.61	14.78	14.38	17.01	15.65	15.51	14.05	14.21	13.83	14.88	12.11	12.28	10.72	9.01	9.22
Sp ₂	14.13	13.70	13.63	13.20	13.31	12.80	12.70	11.45	11.27	10.82	10.84	10.20	10.40	9.02	8.93	8.34	7.75	7.52
	14.17	13.41	13.78	13.27	13.47	12.87	12.85	11.75	11.47	10.84	10.87	10.58	10.11	9.22	8.94	8.47	7.87	7.82
	14.23	13.22	13.33	13.34	13.38	12.45	12.41	11.63	11.01	10.45	10.95	10.27	10.15	8.77	8.33	8.14	7.91	7.34
	14.34	13.81	13.21	13.01	13.12	12.38	12.47	11.01	10.90	10.58	10.90	9.81	10.81	8.65	8.47	8.17	7.98	7.15
	13.82	14.17	13.48	13.28	13.17	12.92	12.78	11.08	11.37	10.67	10.43	9.72	10.71	9.12	9.31	8.45	7.57	7.47
	13.89	14.08	13.91	12.85	12.92	13.12	12.81	11.35	11.68	10.91	9.53	10.48	10.51	9.13	9.41	8.51	7.53	7.78
	14.22	13.78	13.73	12.79	13.48	13.01	12.74	11.41	11.22	11.21	10.81	10.15	10.35	9.17	9.01	8.04	7.48	7.28
	14.27	13.67	13.88	13.29	13.56	12.83	12.68	11.38	11.24	11.08	10.75	10.17	10.41	9.30	9.10	8.27	7.71	7.48
Sp ₃	15.17	14.92	14.87	14.55	14.61	14.15	14.43	13.54	13.39	13.20	13.12	12.90	13.27	12.05	11.91	11.65	11.04	10.92
	15.01	14.82	14.88	14.65	14.65	14.57	14.53	13.24	13.75	13.17	13.35	12.45	13.33	12.07	11.88	11.72	11.34	10.85
	14.88	14.71	14.35	14.78	14.78	14.05	14.11	13.14	13.62	12.85	13.01	12.95	13.47	13.91	12.21	11.35	11.30	10.87
	15.37	14.68	14.38	14.31	14.31	13.97	14.17	13.78	13.01	12.75	12.81	12.75	13.24	13.84	12.18	11.37	11.17	10.45
	15.28	14.72	14.21	14.38	14.38	13.81	14.80	13.78	13.12	13.45	13.45	13.28	13.01	13.97	11.41	11.85	10.81	11.15
	15.41	15.35	14.91	14.82	14.82	13.84	14.35	13.66	12.91	13.41	13.60	13.27	13.02	12.18	11.62	11.83	10.73	11.31
	15.07	15.21	15.07	14.69	14.69	14.07	14.31	13.53	13.28	13.40	12.87	12.91	13.11	12.12	11.71	11.62	10.85	11.05
	14.91	14.99	15.38	14.52	14.52	14.17	14.28	13.57	13.40	13.39	12.91	12.80	13.17	12.13	11.88	11.78	10.92	10.90

TABLE - 14 : ASCORBIC ACID (mg.g.⁻¹ Fr.Wt.)

	SUMMER						MONSOON						WINTER					
	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅
Sp ₁	1.94	1.51	1.48	1.40	1.43	1.09	1.85	1.43	1.39	1.29	1.32	0.95	0.95	0.72	0.70	0.61	0.50	0.48
	1.98	1.57	1.57	1.57	1.37	1.33	1.56	1.48	1.47	1.20	1.28	0.97	0.97	0.57	0.75	0.93	0.58	0.40
	1.75	1.64	1.18	1.68	1.24	1.30	1.75	1.27	1.28	1.01	1.47	0.72	1.11	0.68	0.81	0.90	0.65	0.37
	1.58	1.75	1.27	1.19	1.14	1.11	2.25	1.21	1.01	1.78	1.33	0.67	1.25	0.88	0.63	0.45	0.45	0.30
	1.90	1.21	1.14	1.24	1.53	0.88	2.31	1.34	1.37	1.11	1.58	0.83	0.75	0.97	0.57	0.49	0.37	0.58
	2.17	1.44	1.67	1.28	1.57	0.80	2.11	1.83	1.52	1.07	1.01	1.15	0.72	0.61	0.91	0.57	0.35	0.57
	2.34	1.48	1.62	1.41	1.45	0.74	1.87	1.70	1.08	1.12	1.21	1.20	0.88	0.71	0.82	0.60	0.42	0.41
	2.39	1.53	1.51	1.39	1.50	0.98	1.79	1.11	1.17	1.17	1.12	1.07	0.87	0.82	0.67	0.51	0.51	0.61
Sp ₂	1.92	1.68	1.60	1.46	1.49	1.24	2.25	2.00	1.75	1.57	1.60	1.42	1.34	1.11	1.07	0.91	0.80	0.59
	1.78	1.87	1.92	1.48	1.41	1.52	2.45	2.05	1.88	1.75	1.67	1.49	1.49	1.28	1.22	1.17	0.87	0.71
	1.67	1.92	1.81	1.65	1.21	1.05	2.11	2.28	1.91	1.77	1.91	1.37	1.37	1.01	1.01	0.74	1.05	0.61
	1.95	1.38	1.45	1.67	1.74	1.14	2.05	1.77	1.57	1.47	1.42	1.86	1.12	0.90	0.88	0.77	0.61	0.77
	2.11	1.31	1.37	1.27	1.48	0.93	2.41	1.68	1.67	1.33	1.38	1.17	1.27	1.27	0.97	0.91	0.67	0.54
	2.27	1.48	1.33	1.23	1.31	0.97	1.97	1.95	1.68	1.43	1.66	1.28	1.05	0.81	0.78	0.92	0.74	0.41
	2.15	1.99	1.68	1.38	1.33	1.44	2.18	2.07	1.81	1.49	1.56	1.01	1.48	0.94	1.28	0.78	0.81	0.47
	2.01	1.72	1.75	1.32	1.28	1.48	2.20	2.10	1.77	1.68	1.41	1.44	1.40	0.93	1.21	1.31	0.70	0.53
Sp ₃	1.02	1.09	1.12	1.31	1.34	1.51	0.96	0.98	1.02	1.22	1.18	1.37	0.82	0.88	0.89	1.24	1.25	1.26
	1.07	1.27	1.27	1.34	1.47	1.53	0.69	0.81	1.07	1.29	1.17	1.73	0.84	0.81	0.98	1.85	1.53	1.28
	1.21	1.02	1.31	1.37	1.17	1.67	1.24	0.80	1.12	1.33	1.28	1.03	0.64	0.97	0.71	1.05	1.57	1.62
	1.31	0.92	0.99	1.43	1.27	1.41	1.27	0.75	0.87	1.01	1.19	1.27	0.95	1.21	0.68	0.85	1.03	1.89
	0.81	0.89	0.84	1.11	1.28	1.37	1.01	1.28	0.92	1.11	0.91	1.28	0.98	1.11	0.92	0.97	1.24	0.86
	0.90	0.96	0.97	1.27	1.44	1.50	0.78	1.18	0.91	1.17	0.97	1.33	1.05	0.68	1.17	1.38	0.93	0.91
	1.12	1.17	1.21	1.68	1.57	1.41	0.88	1.37	1.11	1.21	1.17	1.51	0.83	0.72	1.00	0.97	0.97	0.97
	1.00	1.20	1.07	1.01	1.10	1.57	0.91	0.90	1.08	1.14	1.18	1.12	0.75	0.70	0.80	0.87	1.47	0.89

TABLE - 15 : GLUTATHIONE (GSH) (mg. g.^{-1} Fr.Wt.)

	SUMMER						MONSOON						WINTER					
	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅
Sp ₁	9.21	8.66	7.98	7.29	7.60	6.88	6.39	6.05	5.91	5.22	5.36	4.54	8.39	6.74	6.39	5.91	4.88	4.95
	9.47	8.98	8.24	7.48	7.68	6.97	6.48	6.42	5.68	5.41	5.48	4.78	8.44	6.81	6.47	5.61	4.97	5.21
	9.62	8.91	8.31	7.11	7.45	7.21	6.15	6.38	5.71	5.52	5.73	4.84	8.67	6.92	6.52	5.52	5.21	4.58
	9.05	8.42	7.57	7.05	7.38	7.31	6.09	6.52	5.83	5.29	5.12	4.35	8.21	6.83	6.12	6.28	5.18	4.64
	9.11	8.37	7.83	7.28	7.71	6.45	6.51	5.48	6.31	4.91	5.28	4.12	8.14	6.41	6.28	6.21	4.41	4.91
	8.68	8.30	7.91	7.31	7.92	6.50	6.37	5.71	6.28	4.84	5.05	4.28	8.07	6.38	6.61	6.18	4.57	4.71
	8.88	8.26	8.47	6.94	7.28	6.82	6.40	5.68	6.40	5.17	5.39	4.52	8.58	7.21	6.31	5.80	4.73	5.31
	9.31	8.99	8.01	7.52	7.62	6.95	6.21	6.10	5.34	5.39	5.52	4.90	8.73	7.02	6.40	6.10	4.92	5.27
Sp ₂	8.66	7.98	7.84	7.08	7.29	6.60	7.98	7.29	7.29	5.91	6.26	5.71	12.48	12.10	11.76	10.80	9.35	10.04
	8.21	7.41	7.42	7.21	7.84	6.41	7.81	7.41	7.39	5.98	6.44	5.79	12.70	12.17	11.81	10.94	9.41	10.17
	8.34	7.52	7.51	7.48	7.52	6.82	7.51	7.20	7.11	6.34	6.58	5.85	12.35	12.39	11.41	10.48	9.78	10.28
	8.82	8.21	8.12	6.52	7.57	6.33	8.21	7.48	7.17	6.27	6.12	5.92	12.81	11.82	11.52	10.54	9.64	9.57
	8.91	8.32	8.28	6.71	7.05	6.77	8.34	7.12	6.84	5.67	6.17	5.32	12.94	11.67	11.92	11.21	9.12	9.65
	8.99	8.01	7.47	6.84	6.85	6.61	8.02	6.91	6.91	5.48	6.00	5.48	12.52	11.89	12.05	11.29	9.38	10.41
	8.62	7.87	7.90	7.02	6.98	6.52	7.72	7.57	7.48	6.10	5.94	5.64	13.11	12.48	11.78	10.82	9.00	9.98
	8.57	8.37	8.07	7.32	7.91	6.69	8.14	7.50	7.56	5.60	6.67	5.82	13.00	12.19	11.86	10.40	9.17	10.20
Sp ₃	6.26	5.91	6.05	6.81	6.74	7.63	7.08	7.29	7.43	8.11	7.98	8.25	7.43	7.84	8.04	8.66	9.35	9.15
	6.48	6.12	6.42	6.72	6.48	7.84	7.17	7.41	7.65	8.34	7.90	8.35	7.62	7.97	8.41	8.72	9.47	9.34
	6.57	6.23	6.21	6.45	6.57	7.69	7.28	7.34	7.69	8.43	8.21	8.62	7.67	8.21	7.72	8.91	9.81	9.49
	6.20	5.53	6.32	6.53	6.92	7.44	6.71	7.11	7.21	8.01	8.34	8.48	7.38	8.15	7.84	8.85	9.61	9.05
	6.01	5.78	6.71	7.24	6.85	7.38	6.79	7.04	7.32	8.47	8.05	8.05	7.12	7.48	8.21	8.32	9.05	8.77
	5.97	6.41	5.71	7.27	6.79	7.51	6.84	7.20	7.11	7.41	7.48	8.01	7.27	7.57	8.11	8.38	9.12	8.91
	6.12	5.88	5.45	6.87	6.41	7.64	7.21	6.90	7.92	7.58	7.57	7.83	7.20	8.31	7.82	8.51	8.61	8.99
	6.41	5.49	5.57	6.60	7.10	7.87	7.52	7.49	7.82	8.52	8.21	8.39	7.40	7.32	8.09	8.94	9.75	9.53

TABLE - 16 : TOTAL SULPHYDRYL GROUPS (TSH) (mM.g.⁻¹ Fr.Wt.)

	SUMMER						MONSOON						WINTER					
	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅
Sp ₁	2.05	1.97	1.80	1.62	1.71	1.45	1.86	1.58	1.54	1.28	1.37	1.03	1.45	1.38	1.28	1.18	1.03	0.97
	2.24	1.90	1.91	1.85	1.92	1.49	1.78	1.92	1.56	1.47	1.73	1.31	1.65	1.48	1.39	1.34	1.48	0.62
	2.47	2.41	2.41	1.78	1.44	1.79	2.15	1.67	1.22	1.52	1.48	1.28	1.69	1.21	1.44	1.41	0.72	0.69
	2.15	2.37	2.31	1.34	1.58	1.82	2.27	1.48	1.29	1.19	1.01	1.49	1.25	1.19	1.37	1.28	0.79	1.28
	1.84	1.65	1.41	1.28	1.68	1.21	1.45	1.34	1.22	0.84	1.07	0.82	1.20	1.44	1.09	0.71	1.02	1.31
	1.73	1.60	1.34	1.42	1.49	1.28	1.71	1.27	1.78	0.89	0.92	0.71	1.41	1.59	1.41	0.82	1.17	1.01
	1.84	1.78	1.82	1.94	1.97	1.07	1.88	1.72	1.62	0.97	1.38	0.90	1.38	0.92	0.99	0.95	1.11	1.21
	2.21	1.89	1.57	1.61	2.14	1.40	1.68	1.79	1.91	1.24	1.19	0.98	1.52	0.99	0.98	1.19	0.85	0.90
Sp ₂	1.37	1.28	1.22	1.11	1.14	1.02	1.28	1.20	1.11	0.85	0.94	0.77	1.03	0.97	0.94	0.77	0.60	0.68
	1.75	1.68	1.55	1.34	1.24	1.48	1.42	1.28	1.17	0.95	0.90	0.81	1.45	1.20	0.97	0.70	0.67	0.87
	1.32	1.11	1.67	1.14	1.25	1.38	1.19	0.81	1.34	1.24	0.81	1.21	0.84	1.00	1.28	0.61	0.81	0.71
	1.11	1.14	1.11	1.05	1.08	1.10	1.09	0.91	1.27	0.65	0.74	0.41	0.72	0.90	1.34	0.45	0.41	0.48
	1.04	1.22	0.87	0.84	0.84	0.84	1.21	0.84	0.81	0.73	0.70	0.49	0.68	0.64	0.64	0.55	0.45	0.51
	1.28	1.08	0.91	0.87	0.87	0.68	1.24	1.42	0.72	0.81	1.28	1.11	0.94	0.92	0.69	1.28	0.52	0.66
	1.40	1.02	1.00	0.92	0.74	0.91	1.58	1.40	0.91	0.68	1.12	0.57	1.02	1.22	0.78	1.05	0.50	0.91
	1.33	1.24	1.20	1.12	1.34	0.88	0.94	1.22	0.99	0.88	1.10	0.60	1.14	0.64	0.84	0.81	0.62	0.60
Sp ₃	1.25	1.11	1.07	1.20	1.20	1.50	1.35	1.27	1.45	1.07	1.07	0.94	1.37	1.18	1.20	1.15	1.43	1.48
	1.37	1.24	1.13	1.31	1.27	1.45	1.73	1.41	1.20	1.48	1.48	0.98	1.48	1.34	1.49	1.50	1.53	1.37
	1.48	1.37	1.28	1.48	1.31	1.75	1.68	1.47	1.12	1.42	1.41	1.14	1.57	1.37	1.21	1.45	1.67	1.52
	1.82	1.00	1.41	1.12	1.10	1.82	1.01	1.19	0.94	1.41	0.84	1.28	1.20	1.21	1.01	1.14	1.41	1.22
	1.05	0.98	1.11	0.81	1.28	1.17	1.07	1.25	0.82	0.56	1.08	0.65	1.24	1.47	0.78	0.68	1.05	1.37
	1.01	0.81	0.68	0.92	1.05	1.28	1.40	0.82	1.37	0.71	0.87	0.72	1.53	0.91	0.71	0.75	1.12	1.21
	0.82	0.92	0.71	0.87	0.84	1.11	1.28	0.89	1.22	0.82	0.93	0.91	1.41	0.87	1.58	0.91	1.24	1.02
	0.89	1.33	0.77	1.24	0.98	1.58	1.22	1.20	1.28	1.09	0.96	1.04	1.10	0.99	1.62	1.37	1.37	1.36

TABLE - 17 : ACID PHOSPHATASE ($\mu\text{g PNP released min.}^{-1} \text{ mg.}^{-1} \text{ Fr.Wt.}$)

	SUMMER						MONSOON						WINTER					
	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅
Sp ₁	1.07	0.78	0.67	0.41	0.44	0.14	0.41	0.34	0.32	0.22	0.24	0.08	0.26	0.32	0.30	0.29	0.27	0.42
	1.27	0.97	0.82	0.71	0.59	0.27	0.81	0.49	0.47	0.21	0.49	0.02	0.61	0.37	0.34	0.37	0.20	0.57
	1.20	0.88	0.93	0.28	0.62	0.30	0.47	0.48	0.48	0.05	0.14	0.11	0.41	0.20	0.47	0.45	0.31	0.27
	1.42	0.47	0.37	0.22	0.21	0.05	0.21	0.31	0.25	0.07	0.12	0.08	0.12	0.28	0.52	0.09	0.17	0.22
	0.72	0.52	0.38	0.42	0.28	0.11	0.28	0.12	0.27	0.34	0.17	0.17	0.18	0.41	0.21	0.14	0.10	0.28
	0.81	0.69	0.41	0.37	0.31	0.05	0.33	0.17	0.51	0.39	0.21	0.03	0.22	0.42	0.22	0.21	0.29	0.52
	0.92	0.74	0.94	0.33	0.38	0.09	0.30	0.28	0.20	0.28	0.09	0.04	0.12	0.12	0.39	0.17	0.47	0.61
	1.00	0.87	1.27	0.47	0.50	0.19	0.43	0.39	0.37	0.20	0.28	0.09	0.18	0.30	0.14	0.26	0.50	0.47
Sp ₂	0.48	0.41	0.38	0.33	0.28	0.20	0.42	0.37	0.33	0.22	0.22	0.28	0.70	0.64	0.62	0.51	0.41	0.41
	0.57	0.47	0.37	0.39	0.37	0.29	0.28	0.33	0.14	0.27	0.31	0.22	0.81	0.71	0.41	0.59	0.52	0.71
	0.77	0.30	0.12	0.10	0.28	0.35	0.37	0.45	0.37	0.49	0.37	0.31	0.45	0.94	0.38	0.71	0.67	0.64
	0.65	0.21	0.17	0.21	0.18	0.15	0.41	0.49	0.27	0.12	0.27	0.14	0.47	0.33	0.71	0.62	0.21	0.21
	0.50	0.52	0.48	0.48	0.33	0.07	0.22	0.28	0.52	0.18	0.11	0.17	0.91	0.37	0.67	0.21	0.18	0.28
	0.34	0.57	0.42	0.43	0.45	0.10	0.62	0.23	0.47	0.17	0.10	0.11	0.87	0.90	0.81	0.38	0.27	0.15
	0.28	0.62	0.21	0.38	0.11	0.12	0.57	0.34	0.39	0.05	0.21	0.20	0.78	0.65	0.77	0.41	0.38	0.44
	0.25	0.31	0.24	0.32	0.25	0.18	0.49	0.50	0.29	0.23	0.23	0.25	0.73	0.58	0.61	0.72	0.47	0.38
Sp ₃	0.33	0.31	0.28	0.24	0.25	0.16	0.24	0.22	0.20	0.18	0.19	0.14	0.18	0.20	0.21	0.29	0.30	0.34
	0.38	0.37	0.41	0.41	0.29	0.17	0.49	0.29	0.28	0.19	0.27	0.22	0.19	0.27	0.38	0.26	0.38	0.47
	0.21	0.45	0.21	0.52	0.20	0.04	0.19	0.35	0.12	0.10	0.22	0.27	0.38	0.14	0.05	0.34	0.44	0.41
	0.27	0.09	0.14	0.14	0.22	0.07	0.28	0.12	0.19	0.28	0.09	0.09	0.09	0.21	0.07	0.12	0.21	0.21
	0.45	0.17	0.22	0.09	0.50	0.21	0.17	0.13	0.27	0.09	0.28	0.05	0.12	0.06	0.31	0.24	0.15	0.17
	0.40	0.21	0.30	0.06	0.11	0.29	0.11	0.17	0.22	0.07	0.21	0.10	0.07	0.09	0.23	0.23	0.19	0.12
	0.15	0.46	0.17	0.12	0.14	0.15	0.16	0.25	0.04	0.20	0.25	0.07	0.13	0.17	0.28	0.38	0.09	0.43
	0.26	0.63	0.16	0.19	0.28	0.22	0.15	0.21	0.34	0.11	0.31	0.19	0.17	0.40	0.19	0.40	0.47	0.50

TABLE - 18 : PEROXIDASE (Units Min.⁻¹ mg.⁻¹ Fr.Wt.)

	SUMMER						MONSOON						WINTER					
	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅
Sp ₁	0.40	0.55	0.68	0.64	0.92	1.16	0.46	1.08	0.80	1.32	1.00	1.80	0.58	1.12	1.24	1.32	1.68	1.67
	0.56	0.57	0.71	0.77	0.99	1.39	0.57	0.90	0.96	1.52	0.87	1.97	0.59	1.18	1.31	1.47	1.86	1.74
	0.28	0.63	0.79	0.74	1.03	1.18	0.29	1.12	1.03	1.46	0.91	1.92	0.48	1.28	1.37	1.30	1.65	1.96
	0.32	0.67	0.80	0.58	0.90	1.06	0.30	1.26	0.71	1.55	1.07	1.65	0.47	1.03	1.20	1.25	1.54	1.51
	0.40	0.46	0.57	0.53	0.87	1.08	0.42	1.31	0.73	1.20	1.10	1.68	0.67	1.07	1.09	1.35	1.57	1.52
	0.48	0.43	0.55	0.56	0.82	1.14	0.50	1.07	0.67	1.26	0.98	1.71	0.64	0.99	1.12	1.22	1.71	1.46
	0.29	0.51	0.65	0.68	0.80	1.03	0.54	1.03	0.77	1.17	1.04	1.87	0.45	1.16	1.14	1.17	1.68	1.51
	0.33	0.44	0.72	0.71	1.07	1.12	0.47	1.11	0.70	1.14	1.03	1.83	0.69	1.13	1.18	1.41	1.64	1.72
Sp ₂	0.32	0.57	0.52	0.80	0.76	1.12	0.57	0.72	0.80	0.92	1.04	1.28	0.70	0.80	0.88	0.96	1.20	1.32
	0.26	0.40	0.59	0.97	0.88	0.97	0.60	0.69	0.97	1.06	1.14	1.39	0.73	0.99	0.94	0.97	1.38	1.43
	0.34	0.47	0.49	1.03	0.84	1.03	0.46	0.65	1.01	0.97	0.95	1.43	0.65	1.03	0.87	0.91	1.25	1.47
	0.38	0.29	0.68	0.84	0.71	1.25	0.62	0.70	0.83	0.88	0.90	1.24	0.68	0.67	1.00	0.87	1.13	1.24
	0.31	0.31	0.46	0.67	0.67	1.28	0.51	0.78	0.85	0.82	1.07	1.17	0.75	0.61	0.80	1.07	1.16	1.22
	0.44	0.26	0.42	0.70	0.77	1.14	0.48	0.98	0.80	0.77	1.09	1.27	0.63	0.73	0.76	1.04	1.17	1.27
	0.24	0.50	0.58	0.77	0.92	1.07	0.47	0.67	0.58	1.07	0.97	1.14	0.65	0.76	0.79	1.01	1.24	1.37
	0.23	0.47	0.63	0.65	0.61	1.18	0.70	0.66	0.60	1.03	1.13	1.36	0.69	0.84	0.84	0.95	1.23	1.31
Sp ₃	1.33	1.36	1.39	1.44	1.40	1.64	0.84	0.92	1.12	1.32	1.36	1.48	1.18	1.28	1.36	1.56	1.72	2.12
	1.35	1.42	1.52	1.48	1.47	1.71	0.90	0.95	1.15	1.39	1.39	2.69	1.08	1.31	1.41	1.70	1.79	2.24
	1.21	1.48	1.26	1.54	1.53	1.83	0.99	1.00	1.20	1.25	1.31	1.34	1.13	1.38	1.47	1.50	1.65	2.32
	1.45	1.20	1.31	1.33	1.36	1.60	0.80	1.03	1.24	1.28	1.45	1.39	1.20	1.20	1.25	1.47	1.68	1.93
	1.25	1.23	1.32	1.38	1.30	1.49	0.87	0.85	1.02	1.41	1.25	1.56	1.27	1.27	1.27	1.66	1.76	1.95
	1.27	1.29	1.49	1.26	1.35	1.51	0.77	0.83	1.06	1.54	1.27	1.56	1.28	1.17	1.32	1.57	1.93	1.97
	1.37	1.27	1.37	1.59	1.47	1.56	0.80	0.83	1.00	1.16	1.44	1.64	1.23	1.39	1.36	1.48	1.56	2.19
	1.43	1.39	1.36	1.43	1.42	1.57	0.83	0.86	1.16	1.19	1.48	1.48	1.15	1.33	1.35	1.55	1.69	2.15

TABLE - 19 : FOLIAR SULPHUR CONTENT (mg. g.⁻¹ Dry Wt.)

	SUMMER						MONSOON						WINTER					
	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅	R ₁	L ₁	L ₂	L ₃	L ₄	L ₅
Sp ₁	5.15	7.68	7.81	10.14	9.87	11.12	5.45	7.82	8.12	10.57	10.21	11.71	5.45	8.14	8.22	10.71	11.65	11.85
	5.28	7.62	7.85	10.25	9.84	11.45	5.25	7.87	8.17	10.61	10.41	11.91	5.61	8.21	8.27	10.85	11.85	11.97
	5.31	7.25	7.41	10.31	9.55	11.49	5.31	7.45	8.35	10.72	10.52	11.88	5.35	8.25	8.35	10.45	11.77	12.21
	4.85	7.27	7.37	10.40	9.47	11.05	5.38	7.35	8.39	10.77	10.15	11.41	5.31	8.35	8.45	10.37	11.78	11.45
	4.95	7.95	7.85	9.82	9.89	10.75	5.37	7.92	7.84	10.22	9.90	11.49	5.47	7.81	8.01	10.61	11.35	11.47
	5.05	7.91	7.95	9.75	9.88	10.71	5.32	8.15	7.87	10.15	9.82	11.97	5.52	7.90	8.07	10.62	11.41	12.01
	5.21	8.01	8.11	10.01	10.05	11.21	5.10	8.25	8.21	10.35	10.28	11.84	5.41	8.18	8.44	10.81	11.55	11.77
	5.17	7.92	8.07	10.11	10.11	10.91	5.39	8.05	8.04	10.50	10.31	11.67	5.39	8.40	8.52	10.94	11.65	11.67
Sp ₂	7.43	9.62	9.71	12.42	12.22	13.28	7.51	9.85	9.96	12.84	12.75	13.53	7.67	10.11	10.12	13.21	13.81	13.71
	7.21	9.68	9.78	12.75	12.35	13.27	7.54	9.80	9.82	12.92	12.93	13.67	7.37	10.14	10.10	13.41	14.21	13.85
	7.22	9.32	9.33	12.12	11.91	13.45	7.27	9.43	9.72	13.15	12.65	13.21	7.78	10.34	9.82	13.01	14.15	14.01
	7.42	9.27	9.38	12.17	11.87	13.48	7.43	9.47	9.70	12.52	12.59	13.33	7.75	10.29	9.75	13.31	13.82	14.10
	7.58	9.82	9.81	12.48	12.45	12.91	7.85	9.74	9.85	12.57	12.43	13.41	7.92	9.85	10.35	12.97	13.53	13.30
	7.67	9.85	9.92	12.71	12.51	12.82	7.81	9.77	10.15	12.82	12.80	13.71	7.94	9.83	10.45	13.51	13.55	13.36
	7.47	9.71	9.78	12.35	12.15	13.11	7.44	10.12	10.17	12.87	12.87	13.62	7.63	10.01	10.30	13.04	13.71	13.42
	7.57	9.77	9.68	12.53	12.20	13.17	7.57	10.25	10.07	12.71	12.67	13.57	7.29	10.14	10.21	13.15	13.85	13.61
Sp ₃	3.15	6.24	6.44	8.75	8.60	9.49	3.47	6.41	6.74	9.10	8.87	9.95	3.41	6.82	6.90	9.27	10.05	10.02
	3.20	6.27	6.51	8.85	8.40	9.71	3.30	6.49	6.81	9.40	8.97	9.65	3.38	6.84	6.95	9.37	10.50	10.05
	3.17	6.15	6.12	8.45	8.35	9.82	3.15	6.56	6.45	9.31	8.37	10.25	3.22	6.91	6.81	9.07	10.57	9.57
	3.31	6.10	6.14	8.43	8.39	9.40	3.27	6.54	6.49	9.21	8.36	10.28	3.17	6.87	6.83	9.26	9.67	9.61
	2.95	6.37	6.72	8.91	8.70	9.29	3.43	6.15	6.68	8.67	8.81	9.75	3.47	7.11	6.35	8.90	9.77	10.22
	2.92	6.45	6.73	8.95	8.82	9.37	3.47	6.21	6.57	8.72	8.61	9.71	3.56	7.05	6.37	8.91	9.84	10.21
	3.31	6.11	6.41	8.82	8.65	9.40	3.28	6.62	6.92	9.15	9.27	10.11	3.52	6.60	7.51	9.47	10.01	10.18
	3.33	6.22	6.33	8.87	8.63	9.83	3.39	6.54	7.01	9.22	9.31	10.14	3.49	6.55	7.58	9.52	9.95	10.31

**TABLE - 20 : ANALYSIS OF VARIANCE FOR THE BIOCHEMICAL PARAMETERS
(AT FIELD LEVEL)**

Source	F Values										
	df	Chl _a	Chl _b	T.chl	T.pts.	AA	GSH	TSH	Apse	Per	Sul
Due to Sp	2	121.31	19.19	154.20	3802.34	98.6	1634.1	133.1	62.43	845.3	9276.9
Due to S	2	46.84	28.89	96.10	6666.52	353.3	1709.6	48.5	38.78	293.0	314.71
Due to L	5	115.03	32.76	168.22	789.97	34.0	160.6	18.0	24.50	447.6	7549.12
Inter S vs Sp	4	6.67	4.18	5.92	305.57	61.0	1484.2	22.3	39.73	90.0	0.37*
Inter L vs Sp	10	2.00	0.62*	2.06	73.91	38.1	228.6	5.0	6.14	11.5	19.98
Inter L vs S	10	2.89	1.25	5.14	47.59	1.3*	13.7	1.6*	7.39	13.0	33.99

ABBREVIATIONS

Sp : Species
S : Season
L : Locality
Inter : Interaction
df : Degrees of freedom

Chl : Chlorophyll
T.pts. : Total proteins
AA : Ascorbic acid
GSH : Glutathione
TSH : Total sulphhydryl groups
Apse : Acid Phosphatase
Per : Peroxidase
Sul : Sulphur

F values are significantly different at $p < 0.05$

*Not significant

**CHANGES IN VARIOUS GROWTH PARAMETERS
AND FOLIAR SULPHUR CONTENT IN THE POTTED TREE SAPLINGS
KEPT AT DIFFERENT LOCALITIES**

(TABLES 21 - 28)

R_2 Reference 2

L Locality

r^2 Correlation coefficient

GR Growth rate

Max Maximum growth recorded in a particular month (Sept. is the 1st)

Min Minimum growth recorded in a particular month (June is the 10th) in continuation

S_1 Monsoon (August - October)

S_2 Winter (November - February)

S_3 Summer (March - June)

TABLE - 21 : HEIGHT OF THE SHOOT (cm)

Azadirachta indica

Locality	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
R ₂	42.0	45.2	48.0	51.9	54.8	58.5	62.5	65.6	66.9	68.5
L ₁	44.6	48.0	49.1	50.9	51.8	52.9	53.8	54.5	55.2	55.7
L ₂	45.6	51.3	51.5	51.8	52.0	53.2	54.6	54.9	55.7	57.3
L ₃	40.7	42.7	43.8	44.5	45.2	46.2	46.7	47.2	48.1	49.0
L ₄	47.1	47.9	48.2	49.1	50.5	51.0	51.7	52.5	53.4	54.9
L ₅	39.0	39.4	41.4	42.7	43.1	43.4	44.2	44.5	44.9	45.1

Average of 15 observations; standard deviation did not exceed ± 3.8 Moringa pterygosperma

Locality	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
R ₂	23.3	29.4	34.7	40.3	47.8	53.5	61.7	67.1	72.3	76.4
L ₁	22.6	34.7	38.8	48.1	53.8	54.8	55.4	56.0	58.1	59.2
L ₂	26.2	32.8	35.2	40.0	42.4	44.7	47.5	51.9	54.5	58.2
L ₃	26.7	31.8	38.7	41.5	44.7	47.3	44.0	51.3	52.7	54.8
L ₄	25.2	27.5	32.5	34.6	36.8	37.9	41.5	43.6	45.6	48.9
L ₅	22.6	26.0	31.6	33.6	35.0	36.3	37.6	38.3	39.4	40.1

Average of 15 observations; standard deviation did not exceed ± 4.0 Tamarindus indica

Locality	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
R ₂	44.5	47.0	50.2	53.1	55.9	58.3	61.5	64.1	66.7	68.7
L ₁	33.5	38.7	42.7	42.0	43.0	43.5	43.9	44.5	45.7	48.8
L ₂	25.5	28.4	29.3	30.5	32.0	32.7	33.1	33.9	34.9	35.8
L ₃	26.5	27.4	28.8	29.8	31.2	33.1	33.8	34.2	34.5	35.1
L ₄	37.3	38.7	41.5	41.7	42.3	42.8	43.0	43.2	43.9	45.3
L ₅	38.4	39.3	41.2	42.2	42.9	43.2	43.5	43.7	43.7	44.6

Average of 15 observations; standard deviation did not exceed ± 3.5

TABLE - 22 : GROWTH IN SHOOT LENGTH AGAINST TIME

Azadirachta indica

Locality	r^2	GR	Maximum	Minimum	S_1	S_2	S_3
R_2	0.97	5.81	4.0 at 6	1.3 at 8	7.60	6.69	2.99
L_1	0.91	2.26	3.4 at 1	0.5 at 9	7.62	2.44	1.17
L_2	0.83	1.91	5.7 at 1	0.2 at 2	12.50	1.01	1.60
L_3	0.96	1.86	2.0 at 1	0.5 at 6	4.91	1.77	1.64
L_4	0.99	1.67	1.5 at 9	0.3 at 2	1.69	1.99	1.95
L_5	0.90	1.64	2.0 at 2	0.2 at 9	1.02	1.52	0.69

Moringa pterygosperma

Locality	r^2	GR	Maximum	Minimum	S_1	S_2	S_3
R_2	0.97	14.03	8.2 at 6	4.1 at 9	26.18	18.82	7.41
L_1	0.74	9.21	12.1 at 1	0.6 at 6	53.52	12.16	2.38
L_2	0.95	8.35	6.6 at 1	2.3 at 5	25.19	8.05	6.80
L_3	0.87	7.32	7.1 at 7	-3.1 at 6	19.10	6.99	9.94
L_4	0.96	7.25	5.0 at 2	1.1 at 5	9.12	5.36	5.51
L_5	0.83	5.86	5.6 at 2	0.7 at 7	15.04	4.67	2.23

Tamarindus indica

Locality	r^2	GR	Maximum	Minimum	S_1	S_2	S_3
R_2	0.99	5.00	3.2 at 2	2.0 at 9	5.61	5.12	3.78
L_1	0.77	3.01	5.2 at 2	-0.7 at 3	15.52	0.79	3.50
L_2	0.93	3.38	2.9 at 1	0.4 at 6	11.37	3.84	2.67
L_3	0.95	3.35	1.9 at 5	0.3 at 8	3.39	4.74	1.22
L_4	0.86	1.79	2.8 at 2	0.2 at 3	3.75	1.07	1.73
L_5	0.85	1.51	1.9 at 2	0.0 at 8	2.34	1.55	0.75

TABLE - 23 : NUMBER OF LEAVES / PLANT

Azadirachta indica

Locality	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
R ₂	9.8	10.1	11.0	17.2	21.8	27.0	34.2	36.9	38.0	40.5
L ₁	7.5	13.4	10.2	12.3	14.5	18.7	24.4	28.3	26.4	30.1
L ₂	8.7	11.2	10.7	10.4	11.1	14.7	19.2	24.3	29.1	28.0
L ₃	7.6	11.0	13.6	14.5	19.2	25.9	21.3	19.1	23.2	24.0
L ₄	8.0	14.5	11.4	9.5	10.3	10.6	14.5	19.3	20.1	22.1
L ₅	8.4	19.0	16.0	12.0	12.1	16.4	17.1	16.7	17.4	18.8

Averages of 15 observations; standard deviations did not exceed ± 1.9 Moringa pterygosperma

Locality	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
R ₂	7.8	5.0	4.5	5.0	5.3	6.1	6.0	7.0	7.0	8.1
L ₁	4.5	5.8	7.4	7.7	8.0	8.6	8.2	8.5	7.2	6.5
L ₂	5.8	7.0	4.0	2.7	3.6	3.6	4.6	4.6	5.1	5.3
L ₃	5.0	4.7	4.2	6.2	6.5	7.5	6.7	6.1	5.5	5.0
L ₄	7.3	8.7	8.1	6.5	6.3	5.1	5.7	6.2	6.2	6.6
L ₅	8.3	5.0	5.6	5.4	6.0	5.0	4.1	4.0	3.8	4.6

Averages of 15 observations; standard deviations did not exceed ± 2.2 Tamarindus indica

Locality	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
R ₂	22.1	24.1	26.5	30.0	38.7	48.2	54.2	57.4	61.3	68.9
L ₁	19.4	39.2	38.4	36.4	31.4	36.3	39.8	43.2	44.7	46.5
L ₂	13.7	27.0	30.3	33.5	35.1	51.3	53.5	47.4	45.1	43.2
L ₃	14.4	19.3	23.3	26.8	31.3	38.7	38.9	37.2	31.4	38.9
L ₄	24.5	38.1	55.3	53.8	50.3	51.0	30.8	31.0	32.7	36.3
L ₅	21.6	30.0	35.7	40.1	41.2	35.6	23.8	23.2	25.7	30.2

Averages of 15 observations; standard deviations did not exceed ± 2.8

TABLE - 24 : GROWTH IN NUMBER OF LEAVES / PLANT AGAINST TIME

Azadirachta indica

Locality	r^2	GR	Maximum	Minimum	S_1	S_2	S_3
R_2	0.94	20.21	7.2 at 6	0.3 at 1	3.06	34.05	5.51
L_1	0.90	16.12	5.9 at 1	-3.2 at 2	78.66	21.93	5.76
L_2	0.90	15.25	5.1 at 7	-1.1 at 9	28.73	10.71	14.02
L_3	0.76	12.01	6.7 at 5	-4.6 at 6	44.73	24.77	5.68
L_4	0.65	9.78	6.5 at 1	-3.1 at 2	81.25	-1.36	14.09
L_5	0.33	5.10	10.6 at 1	-4.0 at 3	126.19	0.82	3.30

Moringa pterygosperma

Locality	r^2	GR	Maximum	Minimum	S_1	S_2	S_3
R_2	0.25	3.44	1.1 at 9	-2.8 at 1	-35.89	10.19	9.42
L_1	0.27	3.57	1.6 at 2	-1.3 at 8	28.88	5.08	-8.43
L_2	0.00	-0.44	1.2 at 1	-3.0 at 2	20.68	-0.28	5.42
L_3	0.11	2.04	2.0 at 3	-0.8 at 6	-6.00	19.56	-9.34
L_4	0.36	-3.13	1.4 at 1	-1.6 at 3	19.86	-13.23	4.49
L_5	0.62	-5.83	0.8 at 9	-3.3 at 1	-39.75	-2.30	2.98

Tamarindus indica

Locality	r^2	GR	Maximum	Minimum	S_1	S_2	S_3
R_2	0.97	14.69	9.5 at 5	2.0 at 1	9.04	22.74	8.17
L_1	0.51	6.10	19.8 at 1	-4.7 at 4	102.06	-3.02	5.13
L_2	0.65	11.49	16.2 at 5	-6.1 at 7	97.08	17.65	-6.67
L_3	0.74	10.19	7.5 at 9	-5.8 at 8	34.02	18.26	-1.68
L_4	0.01	-1.25	17.2 at 2	-20.2 at 6	55.50	-3.05	5.61
L_5	0.02	-1.16	8.4 at 1	-11.8 at 6	38.88	0.18	8.51

TABLE - 25 : LEAF AREA / LEAF (cm²)Azadirachta indica

Locality	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
R ₂	23.6	27.8	31.4	38.1	43.2	49.7	51.2	55.0	58.1	62.5
L ₁	22.6	22.3	28.0	33.1	38.5	40.2	41.2	43.4	43.0	46.0
L ₂	25.1	21.4	20.0	27.5	25.2	28.4	32.7	38.4	40.7	42.8
L ₃	21.6	28.6	25.7	30.3	37.8	36.4	37.5	39.4	38.2	40.2
L ₄	22.8	30.3	26.5	22.2	22.5	28.4	35.4	35.4	37.2	37.0
L ₅	22.9	23.4	27.2	28.4	32.4	34.8	31.2	33.6	34.6	34.9

Averages of 15 observations; standard deviations did not exceed ± 1.6 Moringa pterygosperma

Locality	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
R ₂	66.6	73.4	80.4	84.1	90.8	98.7	107.8	117.2	124.8	128.1
L ₁	69.0	56.8	58.7	69.8	74.7	81.2	80.1	91.2	100.7	103.4
L ₂	52.9	50.6	64.4	68.2	75.8	78.3	83.4	84.5	92.8	93.7
L ₃	67.9	56.8	59.7	67.2	72.7	79.8	80.2	83.7	82.9	81.4
L ₄	64.8	66.9	62.7	53.4	53.3	47.5	52.2	57.8	62.9	70.8
L ₅	65.0	72.8	69.0	74.8	78.8	80.1	75.8	77.0	75.0	74.1

Averages of 15 observations; standard deviations did not exceed ± 2.2 Tamarindus indica

Locality	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
R ₂	30.6	27.8	28.9	30.1	30.4	28.4	29.7	32.3	32.7	33.7
L ₁	27.6	22.8	21.7	20.1	18.8	20.7	14.5	18.8	22.7	25.3
L ₂	20.5	25.8	24.7	22.2	20.1	22.8	21.3	22.3	24.8	23.2
L ₃	21.5	22.7	28.4	27.7	24.8	26.2	25.2	24.1	23.0	20.4
L ₄	25.4	26.8	27.2	24.4	20.9	21.3	23.2	21.2	21.7	19.2
L ₅	23.8	24.7	22.3	23.4	25.6	23.2	21.7	20.8	19.4	18.9

Averages of 15 observations; standard deviations did not exceed ± 1.4

TABLE - 26 : GROWTH IN LEAF AREA AGAINST TIME

Azadirachta indica

Locality	r^2	GR	Maximum	Minimum	S_1	S_2	S_3
R_2	0.95	11.36	6.7 at 3	1.5 at 6	17.79	16.22	6.74
L_1	0.87	8.77	5.7 at 2	-0.4 at 8	-1.32	13.15	3.26
L_2	0.83	8.33	7.5 at 3	-3.7 at 1	-14.74	10.12	9.04
L_3	0.80	6.47	7.5 at 4	-2.9 at 2	32.40	13.48	1.79
L_4	0.58	5.52	7.5 at 1	-4.3 at 3	32.89	2.23	1.83
L_5	0.71	4.61	4.1 at 5	-3.7 at 7	-12.50	9.83	1.25

Moringa pterygosperma

Locality	r^2	GR	Maximum	Minimum	S_1	S_2	S_3
R_2	0.99	7.74	9.4 at 7	3.3 at 9	10.21	7.16	5.97
L_1	0.85	6.47	11.1 at 3	-12.2 at 1	-17.68	10.97	9.03
L_2	0.92	7.14	13.8 at 2	-2.3 at 1	-4.34	7.16	4.53
L_3	0.73	4.07	7.5 at 3	-11.1 at 1	-16.34	9.95	0.35
L_4	0.00	-0.13	7.9 at 9	-9.3 at 3	3.24	-8.00	10.50
L_5	0.34	1.20	7.8 at 1	-4.3 at 6	12.00	5.12	-0.93

Tamarindus indica

Locality	r^2	GR	Maximum	Minimum	S_1	S_2	S_3
R_2	0.51	1.49	2.6 at 7	-2.8 at 1	-9.15	-0.42	3.99
L_1	0.06	-1.45	4.3 at 7	-6.2 at 6	-17.39	-2.06	20.40
L_2	0.00	0.19	5.3 at 1	-2.5 at 3	25.85	-3.33	3.69
L_3	0.06	-0.86	5.7 at 2	-2.9 at 4	5.58	-3.46	-6.57
L_4	0.71	-3.20	1.9 at 6	-3.5 at 4	5.51	-8.50	-5.29
L_5	0.66	-2.65	2.2 at 4	-2.4 at 2	3.78	2.10	-4.72

TABLE - 27 : VALUES OF DIFFERENT GROWTH PARAMETERS WITH r^2 AND GROWTH RATE VALUES

Species	Locality	Height of the shoot (cm)			Number of leaves/Plant			Leaf area/leaf (cm ²)		
		r^2	GR	average*	r^2	GR	average*	r^2	GR	average*
<u>A.indica</u>	R ₂	0.97	5.81	56.39	0.94	20.21	24.65	0.95	11.36	44.06
	L ₁	0.91	2.26	51.65	0.90	16.12	18.58	0.87	8.77	35.83
	L ₂	0.83	1.91	52.79	0.90	15.25	16.74	0.83	8.33	30.22
	L ₃	0.96	1.86	45.41	0.76	12.01	17.94	0.80	6.47	30.84
	L ₄	0.99	1.67	50.63	0.65	9.78	14.03	0.58	5.52	29.77
	L ₅	0.90	1.64	42.77	0.33	5.10	15.39	0.71	4.61	30.34
<u>M.ptery-gospetma</u>	R ₂	0.97	14.03	50.65	0.25	3.44	6.18	0.99	7.74	97.19
	L ₁	0.74	9.21	48.15	0.27	3.57	7.24	0.85	6.47	78.56
	L ₂	0.95	8.35	43.34	0.00	-0.44	4.63	0.92	7.14	74.46
	L ₃	0.87	7.32	43.37	0.11	2.04	5.74	0.73	4.07	73.23
	L ₄	0.96	7.25	37.41	0.36	-3.13	6.67	0.00	-0.13	59.23
	L ₅	0.83	5.86	34.05	0.62	-5.83	5.18	0.34	1.20	74.24
<u>T.indica</u>	R ₂	0.99	5.00	57.00	0.97	14.69	43.14	0.51	1.49	30.46
	L ₁	0.77	3.01	42.63	0.51	6.10	37.53	0.06	-1.45	21.30
	L ₂	0.93	3.38	31.61	0.65	11.49	38.01	0.00	0.19	22.77
	L ₃	0.95	3.35	31.44	0.74	10.19	30.02	0.06	-0.86	24.40
	L ₄	0.86	1.79	41.97	0.01	-1.25	40.38	0.71	-3.20	23.13
	L ₅	0.85	1.51	42.27	0.02	-1.16	30.71	0.66	-2.65	22.38

* Average of all the monthly readings

TABLE - 28 : FOLIAR SULPHUR CONTENT* (mg. g.⁻¹ Dry Wt.)

Locality	<u>A. indica</u>	<u>M. pterygosperma</u>	<u>T. indica</u>
R ₂	6.7 (0.25)	8.3 (0.17)	4.8 (0.10)
L ₁	10.15 (0.05)	11.7 (0.23)	8.4 (0.48)
L ₂	11.2 (0.09)	12.3 (0.19)	9.0 (0.31)
L ₃	14.3 (0.23)	15.3 (0.44)	9.9 (0.50)
L ₄	15.4 (0.39)	16.5 (0.11)	11.7 (0.13)
L ₅	16.4 (0.41)	18.4 (0.36)	13.2 (0.45)

Observations given are averages of 3 replicate analyses.

Values given in parentheses are $\pm$ standard deviations.

EFFECT OF SO₂ EXPOSURE (UNDER SIMULATED CONDITIONS)
ON VARIOUS GROWTH AND BIOCHEMICAL PARAMETERS
OF THE THREE TREE SAPLINGS

(TABLES 29 - 39)

Azadirachta indica Juss.

Moringa pterygosperma Goert.

Tamarindus indica Linn.

TABLE - 29 : AZADIRACHTA INDICA Juss.

Parameters		Days of exposure					
		00	30	60	90	120	180
Reference	Height (cm)	35.0	53.0	73.0 (44)	92.0	104.0 (31)	127.0 (32)
	No. of leaves/sapling	18.0	27.0	35.0 (39)	52.0	58.0 (34)	69.0 (25)
	Leaf area/leaf (cm ²)	54.0	64.8	75.0 (17)	82.5	83.6 (11)	89.1 (7.5)
Exposed-Treated	Height (cm)	32.0	46.0	61.4 (38)	74.0	83.5 (27)	100.5 (20)
	No. of leaves/plant	18.0	26.0	35.0 (39)	44.0	54.0 (31)	60.0 (22)
	Leaf area/leaf (cm ²)	54.0	52.8	46.8 (-7)	53.0	58.3 (1)	62.7 (3)
Exposed-Untreated	Height (cm)	30.0	40.0	51.0 (30)	62.0	70.0 (23)	84.0 (18)
	No. of leaves/plant	16.0	27.0	33.0 (43)	41.0	47.0 (29)	57.0 (21)
	Leaf area/leaf (cm ²)	58.5	41.6	44.1 (-14)	43.2	40.3 (-7)	41.0 (-4)

Observations given in Tables 29-31 are averages of 5 observations.

SD did not exceed ± 1.24 in Height of the shoot
 ± 0.92 in Number of leaves/plant
 ± 0.75 in leaf area/leaf

Values given in parentheses are growth rates against time.

Correlation coefficient was significant in Height of the shoot and number of leaves/plant.

TABLE - 30 : MORINGA PTERYGOSPERMA Goert.

Parameters		Days of exposure					
		00	30	60	90	120	180
Reference	Height (cm)	23.5	55.6	70.3 (72)	91.0	110.5 (43)	135.7 (30)
	No. of leaves/plant	4.0	6.0	7.0 (32)	8.0	8.0 (18)	11.0 (16)
	Leaf area/leaf (cm ²)	63.0	102.0	140.0 (49)	178.5	230.0 (37)	246.4 (25)
Exposed-Treated	Height (cm)	23.0	36.0	51.5 (49)	65.0	73.0 (33)	95.6 (25)
	No. of leaves/plant	3.7	5.0	5.8 (25)	6.5	7.0 (16)	8.0 (12)
	Leaf area/leaf (cm ²)	60.0	65.8	79.5 (15)	81.0	82.6 (8)	106.4 (8)
Exposed-Untreated	Height (cm)	24.0	31.0	38.0 (25)	45.0	50.0 (20)	64.0 (17)
	No. of leaves/plant	4.0	4.5	5.0 (11)	3.6	4.3 (9)	5.4 (3.4)
	Leaf area/leaf (cm ²)	64.5	67.5	65.8 (1)	65.0	68.4 (1)	71.5 (0.4)

TABLE - 31 : TAMARINDUS INDICA Linn.

Parameters		Days of exposure						
		00	30	60	90	120	150	180
Reference	Height (cm)	35.0	42.5	55.7 (26)	74.0	84.7 (26)	95.5	105.6 (21)
	No. of leaves/plant	37.0	48.0	72.0 (39)	90.0	100.0 (29)	115.0	125.0 (22)
	Leaf area/leaf (cm ²)	20.8	22.4	23.8 (6)	28.9	32.3 (12)	34.0	36.0 (10)
Exposed-Treated	Height (cm)	35.0	44.5	54.0 (24)	63.0	71.7 (19)	80.0	88.5 (16)
	No. of leaves/plant	38.0	45.0	55.0 (20)	65.0	74.0 (18)	82.0	90.0 (15)
	Leaf area/leaf (cm ²)	20.8	16.0	15.4 (-14)	17.6	17.2 (-3)	20.8	24.0 (4)
Exposed-Untreated	Height (cm)	34.0	40.5	48.5 (19)	54.7	60.5 (15)	67.5	75.2 (13)
	No. of leaves/plant	36.0	43.0	52.0 (20)	60.0	67.0 (17)	72.0	74.0 (13)
	Leaf area/leaf (cm ²)	19.2	10.5	11.2 (-24)	12.0	12.0 (-8)	12.6	15.0 (-1)

TABLE - 32 : TOTAL CHLOROPHYLL (mg g^{-1} Fr.Wt.)

Species/ / of exposure	Days	Reference			Exposed-Treated			Exposed-Untreated		
<u>Azadirachta indica</u>	60	2.27	2.48	2.31	1.88	1.97	2.05	1.55	1.68	1.72
		2.07	2.12	2.25	1.68	1.73	1.94	1.48	1.32	1.50
	120	2.41	2.68	2.75	1.89	1.72	1.67	1.63	1.78	1.42
		2.31	2.12	2.24	1.93	2.12	2.10	1.57	1.70	1.67
	180	2.53	2.41	2.38	1.97	1.67	1.90	1.67	1.43	1.58
		2.47	2.68	2.74	2.28	1.87	2.20	1.72	1.89	1.90
<u>Moringa pterygosperma</u>	60	2.30	2.48	2.57	1.92	1.97	2.08	1.62	1.68	1.43
		2.10	2.21	2.00	1.82	1.87	1.90	1.57	1.82	1.74
	120	2.46	2.57	2.63	1.96	2.18	2.21	1.67	1.45	1.58
		2.26	2.41	2.43	1.86	1.84	1.90	1.82	1.75	1.78
	180	2.59	2.69	2.72	2.01	2.17	2.22	1.72	1.43	1.58
		2.41	2.50	2.57	1.90	1.82	1.87	1.87	1.92	1.83
<u>Tamarindus indica</u>	60	2.44	2.57	2.63	2.15	2.28	2.31	1.84	1.97	1.62
		2.31	2.28	2.47	2.05	1.98	2.13	1.71	1.77	2.15
	120	2.55	2.64	2.59	2.21	2.38	2.36	1.90	2.17	2.11
		2.42	2.47	2.56	2.11	2.07	2.18	1.84	1.94	1.88
	180	2.67	2.82	2.75	2.25	2.37	2.40	1.94	1.89	2.14
		2.44	2.58	2.69	2.15	2.05	2.21	2.01	1.74	1.91

TABLE - 33 : TOTAL PROTEINS (mg. g.⁻¹ Fr.Wt.)

Species/ / of exposure	Days	Reference			Exposed-Treated			Exposed-Untreated		
<u>Azadirachta indica</u>	60	15.70	14.72	16.27	15.39	15.89	14.58	12.88	12.47	13.45
		15.41	15.98	15.81	15.48	15.92	15.01	12.28	12.68	13.37
	120	16.06	16.92	15.28	15.57	15.05	15.98	12.91	12.48	13.21
		16.71	16.00	15.41	15.48	14.97	16.33	12.61	12.82	13.45
	180	15.72	14.48	16.28	15.27	15.72	14.38	9.81	10.62	10.29
		14.33	15.61	16.79	15.58	15.77	14.98	9.92	10.67	10.48
<u>Moringa pterygosperma</u>	60	13.55	13.21	13.89	12.82	12.31	13.21	12.04	12.32	11.64
		13.40	13.17	14.07	12.87	12.28	13.48	12.51	11.82	11.95
	120	15.12	15.68	14.78	13.23	13.53	12.82	12.78	12.51	13.23
		15.40	15.01	14.81	13.47	13.40	12.95	12.62	12.48	13.20
	180	15.28	14.78	15.48	13.73	13.52	13.97	11.17	11.39	10.73
		15.40	14.98	15.75	13.48	13.37	14.28	11.48	11.41	10.88
<u>Tamarindus indica</u>	60	13.23	13.62	12.82	13.11	13.67	12.47	12.43	12.73	12.13
		13.51	13.20	12.97	13.45	13.01	12.77	12.85	12.05	12.29
	120	15.05	15.48	14.68	14.07	14.56	13.71	13.19	13.00	13.55
		15.35	14.92	14.84	14.38	14.00	13.84	13.48	12.83	13.30
	180	16.11	16.67	15.68	14.48	14.50	14.12	12.57	12.83	12.30
		16.82	15.48	15.79	14.67	14.73	14.27	12.98	12.28	12.17

TABLE - 34 : ASCORBIC ACID (mg. g.⁻¹ Fr.Wt.)

Species/ / of exposure	Days	Reference			Exposed-Treated			Exposed-Untreated		
<u>Azadirachta indica</u>	60	1.66	1.28	1.41	1.62	1.48	2.05	0.92	1.26	1.20
		1.68	2.12	2.00	2.13	1.42	1.03	0.87	0.68	0.57
	120	1.92	1.37	1.43	1.80	1.97	2.38	0.87	1.21	1.38
		1.90	2.38	2.49	2.10	1.40	1.21	0.48	0.57	0.81
	180	1.97	1.28	1.47	1.73	1.27	1.48	0.69	0.67	0.88
		1.88	2.41	2.82	1.61	2.08	2.28	0.82	0.48	0.62
<u>Moringa pterygosperma</u>	60	2.03	2.43	2.57	1.68	1.82	1.97	1.11	1.42	1.58
		2.10	1.53	1.61	1.42	1.37	1.76	0.78	0.84	1.05
	120	2.25	2.48	2.57	1.91	1.72	1.60	1.50	1.35	1.48
		2.68	1.85	1.70	1.50	2.32	2.41	1.20	0.82	0.89
	180	2.45	2.78	2.84	1.88	2.08	2.27	1.00	1.13	1.28
		2.01	2.25	2.48	1.58	1.68	1.72	1.24	0.73	0.88
<u>Tamarindus indica</u>	60	1.43	1.62	1.76	1.67	1.38	1.27	1.37	1.57	1.63
		1.21	1.07	1.41	1.97	1.90	2.01	1.22	1.29	1.03
	120	1.70	1.79	1.93	1.82	1.88	1.50	1.49	1.68	1.87
		1.83	1.46	1.57	1.69	2.28	2.07	1.43	1.18	1.28
	180	1.80	1.97	1.42	1.75	2.11	1.52	1.41	1.90	1.18
		1.49	2.22	2.00	1.95	1.62	1.59	1.81	1.21	1.10

TABLE - 35 : GLUTATHIONE (GSH) (mg. g.^{-1} Fr. Wt.)

Species/ / of exposure	Days	Reference			Exposed-Treated			Exposed-Untreated		
<u>Azadirachta indica</u>	60	10.90	10.77	10.48	9.15	9.57	8.58	7.70	8.29	7.39
		9.87	11.48	11.71	9.38	9.48	8.67	7.87	7.28	7.62
	120	8.43	8.91	8.01	7.05	7.56	7.89	6.21	6.48	6.59
		8.68	8.78	7.73	6.10	6.38	7.25	6.49	5.85	5.67
	180	9.73	9.13	10.41	8.37	8.97	8.01	7.46	7.93	7.36
		9.42	9.82	10.07	8.48	8.73	7.62	7.87	7.26	6.82
<u>Moringa pterygosperma</u>	60	9.68	10.17	10.41	9.50	9.26	9.82	7.81	7.74	8.21
		9.90	10.28	10.61	9.14	9.43	9.93	7.62	7.94	7.80
	120	8.35	8.67	8.01	7.48	7.32	7.41	6.44	6.72	6.70
		8.69	8.21	8.13	7.59	7.21	7.76	6.58	6.22	6.05
	180	9.87	9.57	10.31	9.10	9.58	9.37	8.40	8.68	8.17
		9.48	9.73	10.40	9.00	8.72	8.83	8.53	8.21	8.30
<u>Tamarindus indica</u>	60	9.87	9.62	10.23	9.38	9.72	9.67	9.47	9.68	9.47
		9.40	10.12	10.09	9.11	9.08	9.21	9.59	9.22	9.36
	120	11.48	11.42	11.82	11.21	11.51	10.82	10.42	10.81	10.28
		11.21	11.05	11.91	11.63	11.01	10.94	10.93	10.01	10.24
	180	12.21	12.57	11.97	11.48	11.69	11.11	11.33	11.57	11.01
		12.49	12.10	11.90	11.57	11.72	11.20	11.48	11.21	11.27

TABLE - 36 : TOTAL SULPHYDRYL GROUPS (TSH) (mM.g.⁻¹ Fr.Wt.)

Species/ / of exposure	Days	Reference			Exposed-Treated			Exposed-Untreated		
<u>Azadirachta indica</u>	60	2.25	2.58	2.71	2.04	2.47	2.82	1.68	1.92	1.20
		2.21	1.78	2.00	1.48	1.67	1.82	1.40	1.62	2.34
	120	1.95	2.37	2.58	1.90	1.72	1.48	1.42	1.57	1.48
		1.81	1.45	1.57	1.64	2.38	2.49	1.68	1.21	1.11
	180	2.15	2.35	2.47	2.10	2.35	2.47	1.53	1.75	1.83
		2.58	1.71	1.93	2.58	1.48	1.65	1.21	1.41	1.49
<u>Moringa pterygosperma</u>	60	2.46	2.68	2.77	2.22	2.68	1.82	1.80	1.97	1.78
		2.28	2.11	2.30	2.53	2.41	1.70	1.62	1.51	2.17
	120	2.21	2.01	2.07	2.07	2.14	2.48	1.49	1.63	1.37
		1.84	2.58	2.72	2.32	1.81	1.68	1.21	1.38	1.74
	180	2.52	2.67	2.82	2.01	2.41	2.52	1.63	1.38	1.78
		2.97	2.05	2.10	1.48	1.56	2.06	1.47	1.69	1.85
<u>Tamarindus indica</u>	60	2.31	2.54	2.71	2.48	2.59	2.68	2.27	2.38	2.53
		2.60	2.90	1.88	2.28	2.35	2.40	2.77	1.82	1.95
	120	2.41	2.57	2.68	2.57	2.68	2.69	2.20	2.38	2.57
		2.31	2.17	2.33	2.78	2.28	2.35	2.60	1.80	1.84
	180	2.60	2.42	2.84	2.53	2.63	2.38	2.28	2.78	1.90
		2.21	2.37	3.11	2.72	2.71	2.20	2.68	2.20	1.88

TABLE - 37 : ACID PHOSPHATASE ($\mu\text{g PNP released min.}^{-1} \text{ mg.}^{-1} \text{ Fr.Wt.}$)

Species/ / of exposure	Days	Reference			Exposed-Treated			Exposed-Untreated		
<u>Azadirachta indica</u>	60	9.53	8.78	10.28	7.50	7.82	7.97	6.10	6.48	6.57
		8.48	9.43	10.31	6.82	6.92	7.38	6.23	5.82	5.56
	120	12.43	12.78	12.92	8.21	8.27	8.98	4.53	4.98	4.57
		11.33	11.98	12.37	8.75	7.68	7.90	4.71	4.41	3.92
	180	8.89	10.12	11.17	6.41	6.62	6.01	4.21	4.48	3.68
		9.31	10.82	10.39	6.81	6.21	6.38	4.37	4.52	3.87
<u>Moringa pterygosperma</u>	60	8.65	8.21	9.28	7.25	7.92	6.58	6.50	6.67	6.14
		8.48	8.17	9.15	7.68	7.31	6.72	6.58	6.28	6.47
	120	9.28	9.59	8.81	7.82	7.48	8.27	6.20	6.57	5.79
		9.48	9.50	8.92	7.31	7.67	8.40	6.42	6.40	5.84
	180	7.81	8.45	7.61	7.00	7.30	6.67	5.85	5.43	6.12
		7.80	7.40	7.84	7.42	6.48	7.13	5.92	5.58	6.23
<u>Tamarindus indica</u>	60	8.24	8.56	7.83	8.01	8.38	7.88	7.48	7.68	7.11
		8.43	8.17	7.98	8.31	7.48	8.13	7.57	7.33	7.70
	120	11.91	11.68	12.41	10.42	10.68	10.12	7.58	7.85	7.23
		11.82	11.52	12.20	10.57	10.33	10.37	7.67	7.80	7.31
	180	12.43	12.82	12.27	10.65	10.23	10.93	7.91	7.65	8.21
		12.57	12.01	12.43	10.58	10.37	10.97	7.99	7.72	8.17

TABLE - 38 : PEROXIDASE (Units Min.⁻¹ mg.⁻¹ Fr.Wt.)

Species/ / of exposure	Days	Reference			Exposed-Treated			Exposed-Untreated		
<u>Azadirachta indica</u>	60	0.32	0.20	0.27	0.64	0.52	0.59	0.88	1.10	1.08
		0.50	0.62	0.35	0.48	0.79	0.84	0.95	0.68	0.58
	120	0.36	0.45	0.68	0.72	0.77	0.52	1.01	1.48	1.33
		0.21	0.23	0.40	0.55	0.85	0.93	0.72	0.65	0.88
	180	0.30	0.21	0.35	0.81	0.87	0.68	1.04	1.48	1.37
		0.47	0.28	0.19	0.45	1.08	1.17	0.68	0.73	0.94
<u>Moringa pterygosperma</u>	60	0.32	0.48	0.57	0.46	0.57	0.68	0.80	0.85	0.97
		0.21	0.17	0.39	0.24	0.20	0.62	1.04	0.52	0.55
	120	0.40	0.21	0.28	0.91	0.97	1.21	1.07	1.32	1.45
		0.35	0.58	0.63	1.10	0.68	0.61	0.82	0.74	0.91
	180	0.36	0.48	0.57	0.88	0.92	1.17	0.91	1.11	0.64
		0.21	0.28	0.32	1.28	0.60	0.52	1.23	0.84	0.70
<u>Tamarindus indica</u>	60	1.00	1.27	1.12	1.17	1.29	1.48	1.28	1.83	1.60
		0.88	0.72	0.98	1.30	0.92	0.82	1.03	0.91	0.98
	120	1.14	1.57	1.42	1.29	1.37	1.22	1.53	1.68	1.13
		0.92	0.84	0.97	1.01	1.54	1.22	1.62	1.55	1.58
	180	0.99	1.23	1.37	1.34	1.66	1.40	1.26	1.82	1.14
		0.90	0.67	0.64	1.53	1.23	0.92	1.78	1.12	0.90

TABLE - 39 : FOLIAR SULPHUR CONTENT (mg. g^{-1} Dry Wt.)

Species/ / of exposure	Days	Reference			Exposed-Treated			Exposed-Untreated		
<u>Azadirachta indica</u>	90	5.62	5.74	5.68	10.55	10.48	10.62	11.87	11.98	12.07
		5.47	5.52	5.70	10.78	10.32	10.51	11.67	11.77	11.89
	180	6.40	6.58	6.62	12.00	12.23	12.31	13.02	13.27	13.11
		6.21	6.28	6.33	11.91	11.72	11.69	12.91	12.84	12.94
	90	7.02	7.21	7.28	13.07	13.21	13.33	14.52	14.63	14.69
		6.82	6.97	6.79	12.92	12.84	13.01	14.41	14.38	14.47
<u>Moringa pterygosperma</u>	180	7.40	7.51	7.62	14.57	14.68	14.28	16.10	16.27	16.19
		7.22	7.31	7.35	14.37	14.59	14.72	16.07	15.92	15.95
	90	4.47	4.38	4.23	9.72	9.87	9.92	8.82	8.93	8.65
		4.63	4.47	4.65	9.67	9.43	9.65	8.68	8.89	9.00
	180	4.80	4.88	4.97	11.95	11.82	11.71	10.86	10.93	10.68
		4.78	4.62	4.52	12.05	12.17	12.13	10.74	10.85	10.78
<u>Tamarindus indica</u>	90	4.47	4.38	4.23	9.72	9.87	9.92	8.82	8.93	8.65
	180	4.63	4.47	4.65	9.67	9.43	9.65	8.68	8.89	9.00