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Assessment the Seasonal Dynamics of Weed Community of Rammohan College: To Assume the Model of Seasonal Dynamics of Weeds of Kolkata

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Abstract: ***The seasonal cycle of plant community is the most important biotic oscillations to mankind. This study built upon previous efforts to develop a comprehensive framework to studying this cycle systematically with the weed communities of Rammohan College.***

We suggest that the seasonal variation of plant community consists of six distinctive phases in sequence each of which results from the interaction between the inherent biological and ecological processes and the progression of climatic conditions and reflects the unique functioning of plant community at different stages of the growing season.

Keywords: Weeds, Rammohan College, Seasonal Dynamics, Abundance, Kolkata

I. INTRODUCTION

The dynamics of plant community consists of diurnal and seasonal cycles. These two cycles are the most important biotic oscillations to mankind.

The diurnal photosynthetic cycle is primarily driven by changes in light availability associated with the rotation of the Earth and is thus relatively predictable. The seasonal cycle, however, is more complex (Rannik *et al*,2000). It is a process orchestrated by internal biological mechanisms and driven by systematic changes in a suite of inter dependent environmental factors such as temperature, photoperiod, radiation, moisture, and nutrient availability.

The study of the plant community of Rammohan College at the seasonal time scale can be considered as an extension of plant phenology (Gu et al. 2002-2003a;b).

This extension, or "vegetation phenology", represents the functional aspect of plant phenology while traditional plant phenological studies focus on the structural aspect such as bud break, flowering, leaf coloring and leaf fall. Research on vegetation photosynthetic phenology can enrich the ancient but revived discipline of phenology so that it can become a truly integrative environmental science (Schwartz, 2003).

Sites and Data Used in the Present Study

Rammohan College is located in the heart of the city of Kolkata, West Bengal, India. This area is approximately 300 years old and highly urbanized with little or almost no greenery (22.582952^0N & 88.370997^0E). The college has got a small garden, where butterflies frequently visit and sometimes complete their life cycle and a large uninhabited open space where weeds are available in plenty in numbers.

The survey has been carried out for a period of five years (10/12/2017 –13/12/2022), in college working days. The roads inside the college campus were used as fixed transects. Weekly observations were carried out during morning hours (08:00 hrs to 10:00 hrs), plants were collected and preserved for identification. Occurrence and Relative abundance has been recorded and all statistical analysis has performed using SPSS 23.

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II. RESULT

TABLE 1 List of Plant Species Found in Rammohan College with their Seasonal Abundance

SCIENTIFIC NAME	FAMILY	JAN-FEB	MAR-APR	MAY-JUNE	JULY-AUG	SEP-OCT	NOV-DEC	Comment
Solanum nigrum L.	Solanaceae	+	+	-	+	+	+	Annual herb
Eragrostis tenella (L.) Beauv. ex R. & S.	Poaceae	+	+	+	+	+	+	Perennial herb with rhizome
Eleusine indica (L.) Gaertn.	Poaceae	+	+	+	+	+	+	Perennial herb with rhizome
Cynodon dactylon (L.) Pers.	Poaceae	+	+	+	+	+	+	Perennial herb with wiry rhizome
Oldenlandia corymbosa L.	Rubiaceae	-	-	-	+	+	+	Annual herb
Oldenlandia paniculata L.	Rubiaceae	-	-	-	+	+	+	Annual herb
Dactyloctenium aegyptium (L.) Wild.	Poaceae	+	+	+	+	+	+	Perennial rhizomatous herb
Ageratum conyzoides L.	Asteraceae	+	-	-	+	+	+	Annual herb
Vernonia cineria (L.) H. Rob.	Asteraceae	+	+	+	+	+	+	Perennial herb
Blumea lacera (Roxb.) DC.	Asteraceae	+	+	-	-	-	+	Annual herb
Lindenbergia indica (L.) Kuntz.	Scrophulariaceae	-	-	-	+	+	+	Annual herb
Mazus rugosus Lour.	Scrophulariaceae	-	-	-	+	+	-	Annual tiny herb
Vandellia crustacea (L.) Benth.	Scrophulariaceae	-	-	-	+	+	-	Annual herb
Lindernia oppositifolia (Retz.) Muk.	Scrophulariaceae	-	-	-	+	+	-	Annual herb
Vandellia hirsuta Buch.-Ham. ex Benth.	Scrophulariaceae	-	-	-	+	+	+	Annual prostrate herb
Phylla nodiflora (L.) Greene	Verbenaceae	+	+	+	+	+	+	Perennial prostrate herb
Rungia parviflora (Retz.) Nees	Acanthaceae	+	+	-	-	-	+	Annual herb
Desmodium triflorum (L.) DC.	Fabaceae	+	+	+	+	+	+	Perennial prostrate herb
Alternanthera sessilis (L.) R. Br. ex DC.	Amaranthaceae	+	+	+	+	+	+	Perennial herb
*Alternanthera paronychioides*A. St.-Hil.	Amaranthaceae	+	+	+	+	+	+	Perennial herb
Alternanthera ficoides (L.) Sm.	Amaranthaceae	+	+	+	+	+	+	Perennial herb
Amaranthus viridis L.	Amaranthaceae	+	-	-	-	+	+	Annual herb
Amaranthus spinosus L.	Amaranthaceae	+	+	-	-	+	+	Annual prickly herb
Tillanthera filoxeroides (Mart.) Moq.	Amaranthaceae	-	-	+	+	+	-	Annual herb
Aerva lanata (L.) Juss. ex Schult.	Amaranthaceae	+	+	+	+	+	+	Perennial herb with somewhat woody rootstc
Nasturtium indicum Oliv.	Brassicaceae	-	-	-	+	+	+	Annual herb
Mecardonia procumbens (Mill.) Small.	Scrophulariaceae	+	+	-	-	-	+	Annual prostrate herb
Pilea microphylla (L.) Liebm.	Urticaceae	-	-	-	+	+	-	Tiny annual herb
Laportia interrupta (L.) Chew.	Urticaceae	-	-	-	+	+	-	Annual herb with stingin hairs
Nicotiana plumbaginifolia Viv.	Solanaceae	+	+	-	-	+	-	Annual herb
Cyperus rotundus L.	Cyperaceae	+	+	+	+	+	+	Perennial herb with cori
Cyperus iria L.	Cyperaceae	-	-	+	+	+	-	Annual herb
Kyllinga brevistylis Rottb.	Cyperaceae	+	+	+	+	+	+	Perennial rhizomatous herb
Andrographis paniculata (Burm. f.) Nees	Acanthaceae	+	+	-	-	+	+	Annual/perennial herb
Andropogon aciculatus (Retz.) Trin.	Poaceae	+	+	+	+	+	+	Perennial rhizomatous herb
Dentella repens (L.) J. R. Forst & G. Forst.	Rubiaceae	-	-	+	+	+	-	Annual prostrate herb
Dentella serpylifolia Wall. ex Craib.	Rubiaceae	-	-	+	+	+	-	Annual prostrate herb
Oplismenus burmannii (Retz.)P. Beauv.	Poaceae	+	+	+	+	+	+	Perennial herb
Digitaria ciliaris (Retz.) Koeler	Poaceae	-	-	-	+	+	-	Annual herb
Digitaria sanguinalis (L.) Scop.	Poaceae	-	-	-	+	+	-	Annual herb
Chloris barbata Sw.	Poaceae	+	-	-	+	+	+	Annual herb
Sida rhombifolia L.	Malvaceae	+	+	+	+	+	+	Perennial undershrub

Crotalaria pallida Aiton	Fabaceae	+	-	-	+	+	+	Annual herb
Euphorbia hirta L.	Euphorbiaceae	+	+	+	+	+	+	Perennial herb
Euphorbia parviflora L.	Euphorbiaceae	+	-	-	+	+	+	Annual herb
Euphorbia microphylla L.	Euphorbiaceae	+	-	-	-	=	+	Annual prostrate herb
Phyllanthus urinaria L.	Euphorbiaceae	-	-	+	+	+	-	annual herb
Phyllanthus fraternus Webster	Euphorbiaceae	-	-	+	+	+	-	Annual herb
Tribulus terrestris L.	Zygophyllaceae	-	-	+	+	+	+	Prostrate herb
Centella asiatica (L.) Urban	Apiaceae	+	+	+	+	+	+	Perennial herb with runner
Physalis minima L.	Solanaceae	-	-	-	+	+	+	Annual herb
Solanum sisymbrifolium Lam.	Solanaceae	+	+	+	+	+	+	Perennial prickly herb
Evolvulus nummularius (L.) L.	Convolvulaceae	+	+	+	+	+	+	Perennial prostrate herb
Evolvulus alsinoides (L.) L.	Convolvulaceae	-		+	+	+	-	Annual prostrate herb
Coldenia procumbens L.	Boraginaceae	+	+	+	+	+	+	Perennial herb
Heliotropium indicum L.	Boraginaceae	-	-	+	+	+	-	Annual herb
Leucas aspera (Willd.) Link	Lamiaceae	-	-	+	+	+	-	Annual aromatic herb
Leucas cephalotes (Roth) Spreng	Lamiaceae	-	-	+	+	+	-	Annual herb
Leonurus japonicus Houtt.	Lamiaceae	+	+	-	-	-	+	Annual herb
Scoparia dulcis L.	Scrophulariaceae	-	-	+	+	+	+	Annual herb
Cleome viscosa L.	Capparidaceae	-	-	+	+	+	-	Annual herb
Cleome rutidosperma DC.	Capparidaceae	+	+	+	+	-	-	Annual herb
Cleome gynandra L.	Capparidaceae	-	-	+	+	+	+	Annual herb
Bulbostylis densa (Wall.) Hand. -Mazz.	Cyperaceae	-	-	+	+	+	-	Annual herb
Brachiara reptans (L.) Gardner & Hubb.	Poaceae	+	+	+	+	+	+	Perennial herb
Brachiaria distachya (L.) Stapf.	Poaceae	+	+	+	+	+	+	Perennial herb
Dichanthium annulatum (Forsk.) Stapf.	Poaceae	-	-	+	+	-	-	Annual herb
Echinochloa stagnina (Retz.) P. Beauv.	Poaceae	-	-	+	+	+	-	Annual herb
Leptochloa chinensis (L.) Nees	Poaceae	-	-	+	+	+	-	Annual herb
Hybanthus enneaspermus (L.) F. Muell.	Violaceae	+	-	-	+	+	+	Annual herb

SCIENTIFIC NAME	FAMILY	JAN-FEB	MAR-APR	MAY-JUNE	JULY-AUG	SEP-OCT	NOV-DEC	Comment
Solanum nigrum L.	Solanaceae	+	+	-	+	+	+	Annual herb
Eragrostis tenella (L.) Beauv. ex R. & S.	Poaceae	+	+	+	+	+	+	Perennial herb with rhizome
Eleusine indica (L.) Gaertn.	Poaceae	+	+	+	+	+	+	Perennial herb with rhizome
Cynodon dactylon (L.) Pers.	Poaceae	+	+	+	+	+	+	Perennial herb with wiry rhizome
Oldenlandia corymbosa L.	Rubiaceae	-	-	-	+	+	+	Annual herb
Oldenlandia paniculata L.	Rubiaceae	-	-	-	+	+	+	Annual herb
Dactyloctenium aegyptium (L.) Wild.	Poaceae	+	+	+	+	+	+	Perennial rhizomatous herb
Ageratum conyzoides L.	Asteraceae	+	-	-	+	+	+	Annual herb
Vernonia cineria (L.) H. Rob.	Asteraceae	+	+	+	+	+	+	Perennial herb
Blumea lacera (Roxb.) DC.	Asteraceae	+	+	-	-	-	+	Annual herb
Lindenbergia indica (L.) Kuntz.	Scrophulariaceae	-	-	-	+	+	+	Annual herb
Mazus rugosus Lour.	Scrophulariaceae	-	-	-	+	+	-	Annual tiny herb
Vandellia crustacea (L.) Benth.	Scrophulariaceae	-	-	-	+	+	-	Annual herb
Lindernia oppositifolia (Retz.) Muk.	Scrophulariaceae	-	-	-	+	+	-	Annual herb
Vandellia hirsuta Buch.-Ham. ex Benth.	Scrophulariaceae	-	-	-	+	+	+	Annual prostrate herb
Phyla nodiflora (L.) Greene	Verbenaceae	+	+	+	+	+	+	Perennial prostrate herb
Rungia parviflora (Retz.) Nees	Acanthaceae	+	+	-	-	-	+	Annual herb
Desmodium triflorum (L.) DC.	Fabaceae	+	+	+	+	+	+	Perennial prostrate herb
Alternanthera sessilis (L.) R. Br. ex DC.	Amaranthaceae	+	+	+	+	+	+	Perennial herb

*Alternanthera paronychioides*A. St.-Hil.	Amaranthaceae	+	+	+	+	+	+	Perennial herb
Alternanthera ficoides (L.) Sm.	Amaranthaceae	+	+	+	+	+	+	Perennial herb
Amaranthus viridis L.	Amaranthaceae	+	-	-	-	+	+	Annual herb
Amaranthus spinosus L.	Amaranthaceae	+	+	-	-	+	+	Annual prickly herb
Tillanthera filoxeroides (Mart.) Moq.	Amaranthaceae	-	-	+	+	+	-	Annual herb
Aerva lanata (L.) Juss. ex Schult.	Amaranthaceae	+	+	+	+	+	+	Perennial herb with somewhat woody rootstock
Nasturtium indicum Oliv.	Brassicaceae	-	-	-	+	+	+	Annual herb
Mecardonia procumbens (Mill.) Small.	Scrophulariaceae	+	+	-	-	-	+	Annual prostrate herb
Pilea microphylla (L.) Liebm.	Urticaceae	-	-	-	+	+	-	Tiny annual herb
Laportia interrupta (L.) Chew.	Urticaceae	-	-	-	+	+	-	Annual herb with stinging hairs
Nicotiana plumbaginifolia Viv.	Solanaceae	+	+	-	-	+	-	Annual herb
Cyperus rotundus L.	Cyperaceae	+	+	+	+	+	+	Perennial herb with corm
Cyperus iria L.	Cyperaceae	-	-	+	+	+	-	Annual herb
Kyllinga brevistylis Rottb.	Cyperaceae	+	+	+	+	+	+	Perennial rhizomatous herb
Andrographis paniculata (Burm. f.) Nees	Acanthaceae	+	+	-	-	+	+	Annual/perennial herb
Andropogon aciculatus (Retz.) Trin.	Poaceae	+	+	+	+	+	+	Perennial rhizomatous herb
Dentella repens (L.) J. R. Forst & G. Forst.	Rubiaceae	-	-	+	+	+	-	Annual prostrate herb
Dentella serpylifolia Wall. ex Craib.	Rubiaceae	-	-	+	+	+	-	Annual prostrate herb
Oplismenus burmannii (Retz.)P. Beauv.	Poaceae	+	+	+	+	+	+	Perennial herb
Digitaria ciliaris (Retz.) Koeler	Poaceae	-	-	-	+	+	-	Annual herb
Digitaria sanguinalis (L.) Scop.	Poaceae	-	-	-	+	+	-	Annual herb
Chloris barbata Sw.	Poaceae	+	-	-	+	+	+	Annual herb
Sida rhombifolia L.	Malvaceae	+	+	+	+	+	+	Perennial undershrub
Sida acuta Burm.f.	Malvaceae	+	+	+	+	+	+	Perennial undershrub
Sida cordifolia L.	Malvaceae	+	+	+	+	+	+	Perennial undershrub
Crotalaria pallida Aiton	Fabaceae	+	-	-	+	+	+	Annual herb
Euphorbia hirta L.	Euphorbiaceae	+	+	+	+	+	+	Perennial herb
Euphorbia parviflora L.	Euphorbiaceae	+	-	-	+	+	+	Annual herb
Euphorbia microphylla L.	Euphorbiaceae	+	-	-	-	=	+	Annual prostrate herb
Phyllanthus urinaria L.	Euphorbiaceae	-	-	+	+	+	-	annual herb
Phyllanthus fraternus Webster	Euphorbiaceae	-	-	+	+	+	-	Annual herb
Tribulus terrestris L.	Zygophyllaceae	-	-	+	+	+	+	Prostrate herb
Centella asiatica (L.) Urban	Apiaceae	+	+	+	+	+	+	Perennial herb with runner
Physalis minima L.	Solanaceae	-	-	-	+	+	+	Annual herb
Solanum sisymbrifolium Lam.	Solanaceae	+	+	+	+	+	+	Perennial prickly herb
Evolvulus nummularius (L.) L.	Convolvulaceae	+	+	+	+	+	+	Perennial prostrate herb
Evolvulus alsinoides (L.) L.	Convolvulaceae	-		+	+	+	-	Annual prostrate herb
Coldenia procumbens L.	Boraginaceae	+	+	+	+	+	+	Perennial herb
Heliotropium indicum L.	Boraginaceae	-	-	+	+	+	-	Annual herb
Leucas aspera (Willd.) Link	Lamiaceae	-	-	+	+	+	-	Annual aromatic herb
Leucas cephalotes (Roth) Spreng	Lamiaceae	-	-	+	+	+	-	Annual herb
Leonurus japonicus Houtt.	Lamiaceae	+	+	-	-	-	+	Annual herb

Scoparia dulcis L.	Scrophulariaceae	-	-	+	+	+	+	Annual herb
Cleome viscosa L.	Capparidaceae	-	-	+	+	+	-	Annual herb
Cleome rutidosperma DC.	Capparidaceae	+	+	+	+	-	-	Annual herb
Cleome gynandra L.	Capparidaceae	-	-	+	+	+	+	Annual herb
Bulbostylis densa (Wall.) Hand. - Mazz.	Cyperaceae	-	-	+	+	+	-	Annual herb
Brachiara reptans (L.) Gardner & Hubb.	Poaceae	+	+	+	+	+	+	Perennial herb
Brachiaria distachya (L.) Stapf.	Poaceae	+	+	+	+	+	+	Perennial herb
Dichanthium annulatum (Forsk.) Stapf.	Poaceae	-	-	+	+	-	-	Annual herb
Echinochloa stagnina (Retz.) P. Beauv.	Poaceae	-	-	+	+	+	-	Annual herb
Leptochloa chinensis (L.) Nees	Poaceae	-	-	+	+	+	-	Annual herb
Hybanthus enneaspermus (L.) F. Muell.	Violaceae	+	-	-	+	+	+	Annual herb

Table 2
Variance explained by principal components (6 components)

	Jan-Feb	Mar-Apr	May-June	Julu-Aug	Sep-Oct	Nov-Dec
Individual	0.57	0.25	0.09	0.05	0.04	0.00
Cumulative	0.57	0.82	0.91	0.96	1.00	1.00

Table 3
Principal components (6 data points in rows, 6 components in columns):

	PC1	PC2	PC3	PC4	PC5	PC6
January-February	-5.21	1.08	-2.25	1.50	-1.31	0.00
March-April	-5.46	-1.63	-0.77	-1.28	1.91	0.00
May-June	2.00	-6.01	1.07	-0.19	-1.10	-0.00
July-August	5.99	0.46	-0.13	2.04	1.42	-0.00
September-October	5.40	2.79	-1.43	-2.05	-0.64	0.00
Noveber-December	-2.73	3.32	3.51	-0.02	-0.29	-0.00

Table 4
Abundance and Seasonal Dynamics

	Jan-Feb	Mar-Apr	May-June	July-Aug	Sep-Oct	Nov-Dec
Solanum nigrum	-0.04	0.25	-0.12	0.04	0.30	0.12
Oldenlandia	0.12	0.20	0.17	-0.00	0.10	-0.89

	Jan-Feb	Mar-Apr	May-June	July-Aug	Sep-Oct	Nov-Dec
corymbosa						
Oldenlandia paniculata	0.12	0.20	0.17	-0.00	0.10	-0.00
Ageratum conyzoides	0.05	0.25	-0.03	0.23	-0.17	0.23
Blumea lacera	-0.18	0.09	0.04	0.03	0.06	-0.18
Lindenbergia indica	0.12	0.20	0.17	-0.00	0.10	0.08
Mazus rugosus	0.17	0.11	-0.14	-0.00	0.17	0.02
Vandellia crustacea	0.17	0.11	-0.14	-0.00	0.17	0.02
Lindernia oppositifolia	0.17	0.11	-0.14	-0.00	0.17	0.02
Vandellia hirsuta	0.12	0.20	0.17	-0.00	0.10	0.08
Rungia parviflora	-0.18	0.09	0.04	0.03	0.06	0.00
Amaranthus viridis	-0.03	0.22	-0.01	-0.08	-0.45	-0.06
Amaranthus spinosus	-0.12	0.18	-0.09	-0.29	-0.07	0.04
Tillanthera filoxeroides	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Nasturtium indicum	0.12	0.20	0.17	-0.00	0.10	0.08
Mecardonia procumbens	0.08	0.14	-0.17	-0.43	-0.17	-0.06
Pilea microphylla	0.17	0.11	-0.14	-0.00	0.17	0.02
Laportia interrupta	0.17	0.11	-0.14	-0.00	0.17	0.02
Nicotiana plumbaginifolia	-0.07	0.07	-0.38	-0.27	-0.01	-0.10
Cyperus iria	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Andrographis paniculata	-0.12	0.18	-0.09	-0.29	-0.07	0.04
Dentella repens	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Dentella serpylifolia	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Digitaria ciliaris	0.17	0.11	-0.14	-0.00	0.17	0.02
Digitaria sanguinalis	0.17	0.11	-0.14	-0.00	0.17	0.02
Chloris barbata	0.05	0.25	-0.03	0.23	-0.17	0.03

	Jan-Feb	Mar-Apr	May-June	July-Aug	Sep-Oct	Nov-Dec
Crotalaria pallida	0.08	0.13	-0.33	0.22	-0.11	-0.08
Euphorbia parviflora	0.05	0.25	-0.03	0.23	-0.17	0.03
Euphorbia microphylla	-0.10	0.04	-0.26	0.30	-0.35	-0.16
Phyllanthus urinaria	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Phyllanthus fraternus	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Tribulus terrestris	0.15	0.02	0.28	-0.03	-0.13	0.02
Physalis minima	0.12	0.20	0.17	-0.00	0.10	0.08
Evolvulus alsinoides	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Heliotropium indicum	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Leucas aspera	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Leucas cephalotes	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Leonurus japonicus	-0.18	0.09	0.04	0.03	0.06	0.00
Scoparia dulcis	0.15	0.02	0.28	-0.03	-0.13	0.02
Cleome viscosa	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Cleome rutidosperma	-0.04	-0.20	-0.19	0.33	0.20	-0.12
Cleome gynandra	0.15	0.02	0.28	-0.03	-0.13	0.02
Bulbostylis densa	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Dichanthium annulatum	0.12	-0.18	0.09	0.29	0.07	-0.04
Echinochloa stagnina	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Leptochloa chinensis	0.18	-0.09	-0.04	-0.03	-0.06	-0.00
Hybanthus enneaspermus	0.05	0.25	-0.03	0.23	-0.17	0.03

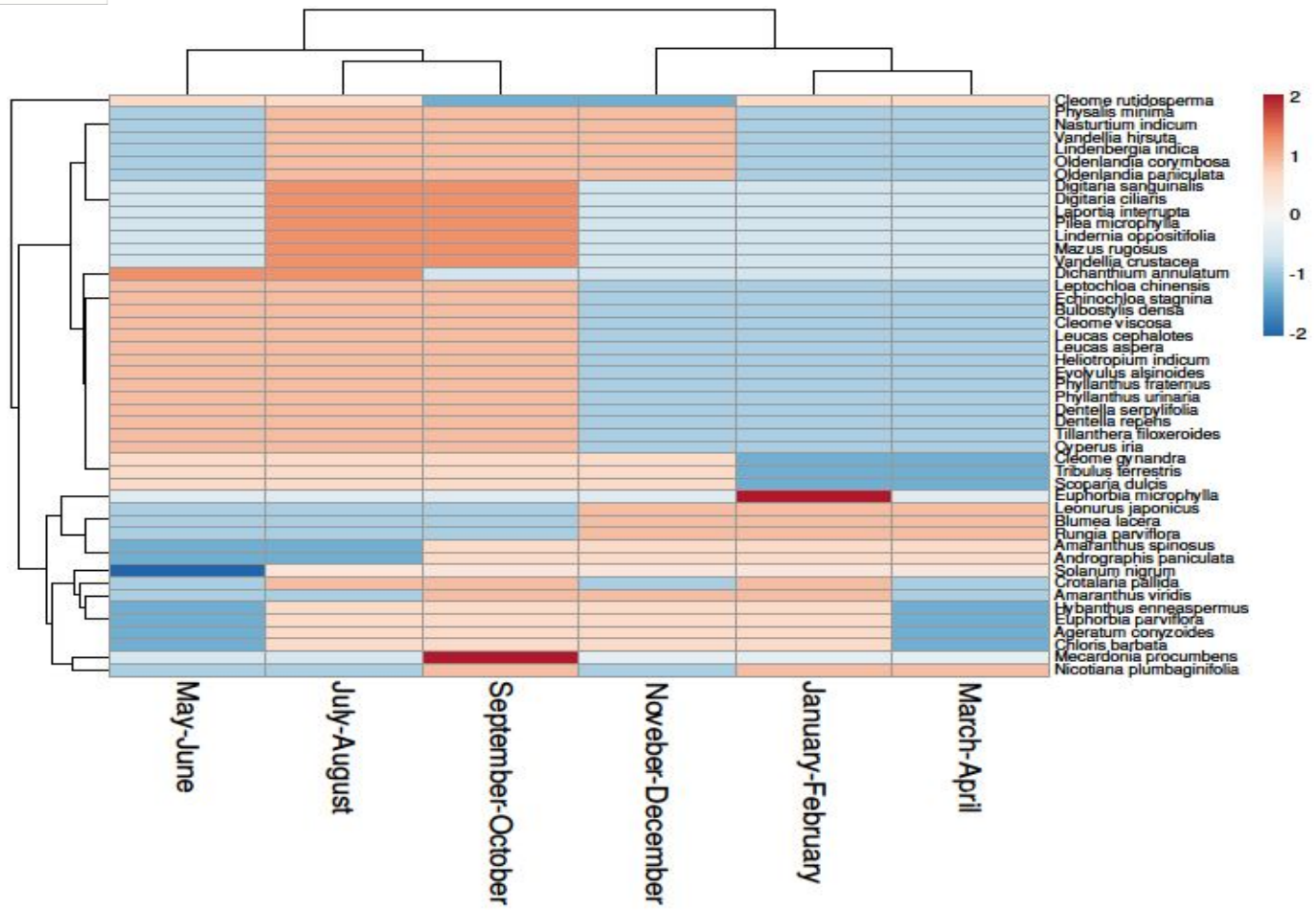


Figure 1

III. DISCUSSION

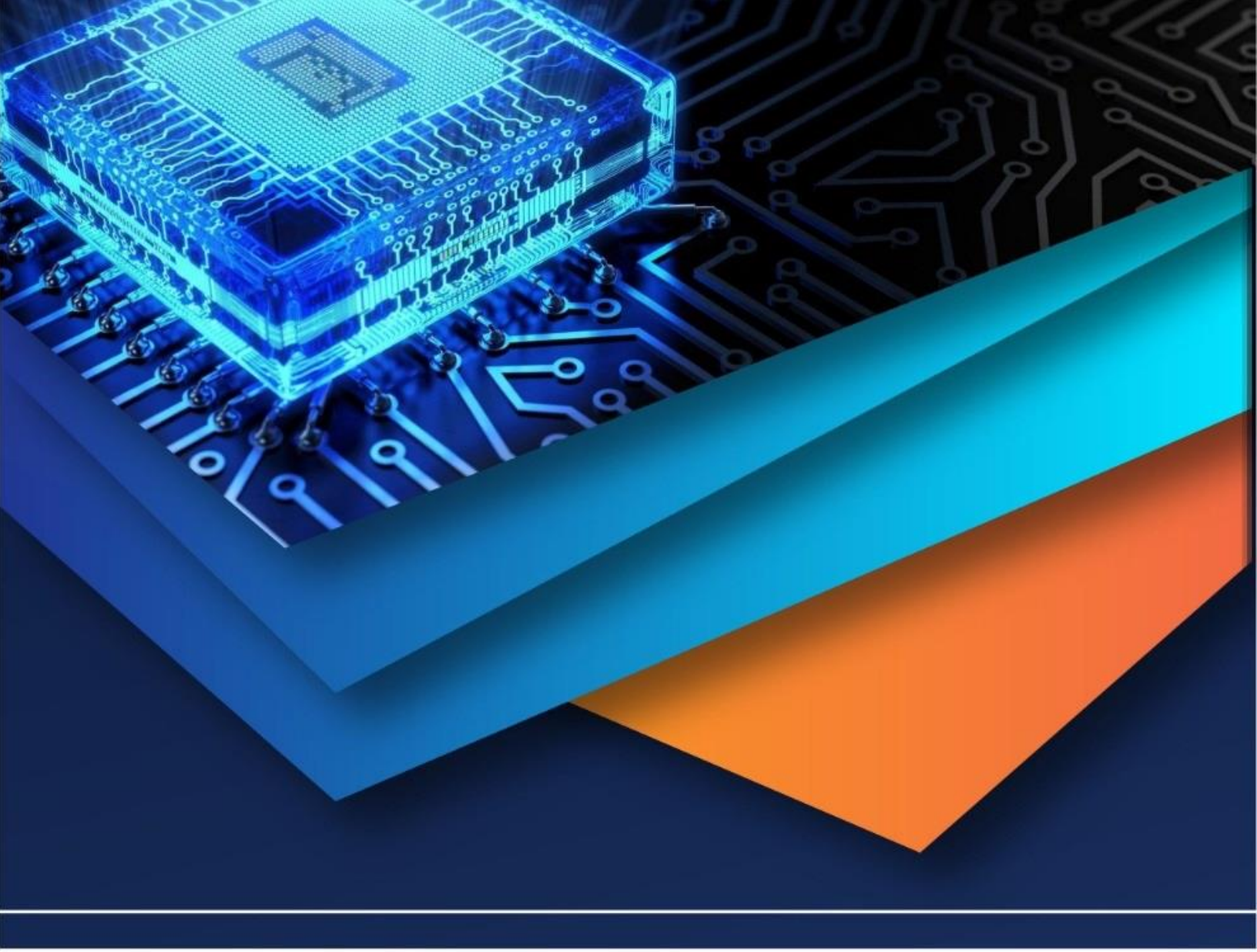
The seasonal dynamics of weeds of Rammohan College may be a reflection of weed dynamics of Kolkata. The Heat Map (Fig1) is showing abundance from High (+2) to Low/Absent (-2) range. *Euphorbia microphylla* and *Mecardonia procumbance* are two dominant weeds of Rammohan College. In Table 2 we found that, individual variance is highest in Jan-February whereas cumulative variance is highest in August September. In Table 3, we found, the number of componants of community is highest in post monsoon (July-August) whereas lowest in winter (January-February). In Table 4, we found, the actual dynamics of composition of plants in different seasons. The Table 1 shows the list of plant species found in Rammohan College (A representative of weed flora of Kolkata).

IV. ACKNOWLEDGEMENT

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REFERENCES

[1] Gu,L.and Baldocchi,D.D. Foreword to the Flux net specialissue.Agric.For.Meteorol. 113,1–2.2002.
[2] Gu,L.,Post,W.M.,Baldocchi,D.,Black,T.A.,Verma,S.B.,Vesala,T.andWofsy,S.C. Phenology of vegetation photosynthesis. In: Schwartz, M.D. (Ed.) *Phenology: An Integrated Environmental Science*. Kluwer, Dordecht, pp. 467–485. 2003.
[3] Gu, L.H., Baldocchi, D.D., Verma, S.B., Black, T.A., Vesala, T., Falge, E.M. and Dowty, P.R. Advantages of diffuse radiation for terrestrial ecosystem productivity.J.Geophys.Res. (D Atmos.) 107, art. no. 4050. 2002.
[4] Gu,L.H.,Baldocchi,D.D.,Wofsy,S.C.,Munger,J.W.,Michalsky,J.J.,Urbanski,S.P.andBoden, T.A. Response of a deciduous forest to the Mount Pinatubo eruption: Enhanced pho- to synthesis. Science 299, 2035–2038. 2003.
[5] Rannik, Ü., Aubinet, M., Kurbanmuradov, O., Sabelfeld, K.K., Markkanen, T. and Vesala, T. Footprint analysis for measurements over a heterogeneous forest. Bound.-Lay. Meteorol. 97, 137–166.2000.
[6] Schwartz,M.D.(Ed.) Phenology: An Integrative Environmental Science. Kluwer, Dordrecht, pp.592. 2003.



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