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Investigation and Study of Some Angiospermic Seeds with Special References to Germination and Their Viability in Tribal District Dhar (M.P.), India

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Abstract: ***An extensive and intensive plant survey in different areas of Dhar district of Madhya Pradesh was carried out in the year 2020-2021. Dhar district is situated in the South-western part of Madhya Pradesh with highly rich floristic biodiversity of plant. The total area of district is 8153 sq. km. of which forest encompasses 1370 sq. km. covering 15.79 percent of its geographical area and covered by Vindhyan scab, Malwa plateau and Narmada basin. The tribal of this area includes Bhil, Bhilala, Barela and Pateliya are the major tribes inhabiting the area and depending on forest. The present study highlights the seeds germination and their viability in different sites of Dhar district of Madhya Pradesh, India. 30 angiospermic seed diversity of higher plants was undertaken. Preliminary study of Seeds germination and their viability survey conducted in the different 11 sites of tribal district Dhar (M.P.), India and reported 29 species under 25 genera and 13 families. Leguminosae is most dominant families with 14 species fallowed by Combretaceae with 4 species and other remains families having one species. It is also noticed that 29 species are used by the ethnic communities of the district for various purposes. In the present communications hindi name, scientific name, family, filed notes and flowering and fruiting periods have been provided.***
Keywords: Dhar, CAMPA, Seed germination, Seed viability, Narmada River, Malwa plateau, Vindhyan scab

I. INTRODUCTION

Seed vigour is an important quality parameter which needs to be assessed to supplement germination and viability tests to gain insight into the performance of a seed lot in the field or in storage. Seed germination is the most important stage in a plants life cycle. Water, air, temperature and light are all essential for the seed germination process starting from imbibitions, activation and succeeding manifestation. Not all plants produce seeds, but those that do often depend on these seeds to replicate themselves over successive seasons and years. Seeds are of immense biological and economic importance. They contain high protein, starch and oil reserves that help in the early stages of growth and development in a plant. The diversity of plant life is an essential underpinning of most of our terrestrial ecosystems. Another important role of plant life is the provision of ecosystem services the protection of water sheds, stabilization of slopes, improvement of soils, moderation of climate and the provision of a habitat for much of our wild fauna (Ganesan et.al. 2017). While it is generally accepted today that the conservation of all biodiversity should be our goal, understanding the natural distribution of plants is central to conserving biodiversity and managing ecosystems for long-term viability and sustainability (Arachi JX, 1975).The survival of man is intimately related to the availability of different plant resources. The plant wealth of a country is its pride and acquiring knowledge of flora and vegetation is of immense scientific and commercial importance. India is a big country covering wide range of vegetation types (Champion and Seth 1968) and represents a very rich flora including a large number of endemic species (Reddy 2002). In the present study is aimed to have floristic survey of some angiospermic seeds with special references to germination and their viability in tribal district Dhar (M.P.), India.

II. STUDY AREA

Dhar district of Madhya Pradesh, India is located between the latitude of 22º 00 to 23º 10’ North and longitude of 74º 28’ to 75º 42’ East and altitude of 588 m. above sea level. The total area of district is 8153 sq. km. of which forest encompasses 1370 sq. km. covering 15.79 percent of its geographical area. The temperature exhibits a great variation. Summer season temperature ranges 41ºC to 45ºC. Average minimum temperature varies from 22ºC to 32ºC. Most of the area is drained by Narmada, Chambal, Man, Mahi, Karam, Bag, Hathani rivers.

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Besides these, small seasonal rivers like Khadi, Khuj, Bagedi, Balwanti, Gangi, Chidi, Nalganga flow only during rainy season. Archaean system, Bijawar group, Vindhyan system and Deccan traps of rocks have been found in Dhar. Major part of the district is covered by the Deccan trap locally called Malwa trap. Granite, Mg rocks existing on either side of Narmada area of Archaean age. Dhar District is divided into 13 Tehsils, 472 Panchayats and 1429 Villages. Dhar district Total population is 2184672 according to census 2011.

III. METHODOLOGY

Plant survey was carried out by well planned schedule In Dhar region during 2020-2021. All habitats of the study area surveyed carefully. Seeds germination and their viability survey conducted in the different 11 sites of tribal district Dhar (M.P.), India **(Table-1)**. Seed collection carried out by standard method in different time period and details are given in **Table-2.** In one site 20,000 pits are studied and the Length, Base and Depth of per pits are 0.45 x 0.45 x 0.45 Centimeter. A total of 6 tons seeds of different varieties are collected and mixed and showing in CCT and SGT **(Table-3).** Continuous contour trench (CCT) size are Continuous X 0.45 X 0.45 Mtr. staggered contour trench (SGT) size are 3 x 0.45 x 0.45Mtr. And a field diary with details of visit was maintained. In each site we made a preliminary survey to locate seed germination and their viability that are regarded as well germinated in local conditions and or in controlled climate. Germination index is calculate by fallowing formulas **G.I. =n/d** where as n=germinating seed in n days and d=days after showing date. Seed germination is confirm when it height is 1 cm and cotyledons are open. After 28 days germination is confirmed. Seed germination methods are fallowed suggested by **ISTA.** Information about its soil, temperature and manure were collected. 30 species are noticed that used by the ethnic communities which are possible to growing in this region are selected. In the present communications scientific name, filed notes and flowering and fruiting periods have been provided. Identification is done with the help of different flora and other taxonomic literature (Verma et.al.1994, Singh et.al.2001, Mudgal et.al.1997).

IV. RESULTS AND DISCUSSIONS

Seeds germination and their viability survey conducted in the different 11 sites Compensatory afforestation site 02, NPV mixed plantation site 02 and NPV soil and water conservation with plantation sites 07. A of tribal district Dhar (M.P.), India and reported 29 species under 25 genera and 13 families. Leguminosae is most dominant families with 14 species fallowed by Combretaceae with 4 species and other remains families having one species. It is also noticed that 29 species are used by the ethnic communities of the district for various purposes. In the present communications Hindi name, scientific name, family, filed notes and flowering and fruiting periods have been provided. Plants are the part of dynamic ecosystems. Seed germination start in ordinary (Baker, 1974). In agriculture world out of 8000 only 250 weed species are very important as a cover crop (Holm et al., 1979). Climatic factor cause great destruction to Seed germination as they increase the costs of different cultural practices, decrease the effectiveness of equipment and excellence of fertile lands, decrease the germination capability of seed (Algandaby and Salama, 2016). Seed vigour and germination is an important component of seed quality and satisfactory levels are necessary in addition to traditional quality criteria of moisture, purity, germination and seed health to obtain optimum plant stand and high production. Some seed characters, such as short seed dormancy, high seed germination rate, environmental plasticity, fast seedling growth and reproductive capability, short span of life cycle, self compatibility, efficient and well organized methods of seed desperation, manufacturing of diverse types of allelochemicals and tolerance to abiotic and biotic stresses are important for seed germination and their growth (El- Sheikh, 2013).It allows the species to survive and grow in different ecological habitats. Due to these seeds are becoming stabilized as herbs shrubs and trees all over the world and it make dense forest (Holm et al., 1997) and managed the local biodiversity (Duke, 1983).

V. SUGGESTIONS

A. Seeds collection time is very important so timely collected seeds.
B. Seed treatment is also very important factor for germination of seeds so different types of seed treatment is done before showing of seeds.
C. Seed showing is done on before rainy season.
D. Land preparation is major factor which is affected seed germination so before showing loosing of the soil is done.
E. In the local site, local plant species are grown or seed showing.
F. Always develop forest by seeds .It is effective process to develop forest.
G. Always monitoring the germination of seeds and protection is very important.
H. Seed germination observation is must done in 28 days.

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I. Seed age depends a lot on the amount of water in storage so seed collection and its storage condition maintaining is very important.

J. Humidity, temperature, light, and aeration should be taken care of for seed germination and storage. Those which are dried to less than 20-40 percent water content then their germination capacity is destroyed and also these seeds cannot be stored for long period. Seeds of **Teak, Acacia, Khair, Prosopis, Albizia,** etc. can be stored after drying, but the germination capacity of seeds of **Mango, Jamun, Neem, Mahua, Sal, Bakayan** etc. is reduced only after 1-2 weeks. Therefore, it is difficult to store these seeds. These seeds should be used immediately after collection.

K. Most germinating species of the area are ***Terminalia bellirica (Gaertn.) Roxb.,Tamarindus indica L.; Averrhoa carambola L.; Pithecellobium dulce (Roxb.) Benth.; Ziziphus jujuba Mill.; Cassia fistula L.; Pongamia pinnata (L.) Pierre; Dendrocalamus strictus (Roxb.) Nees; Gmelina arborea Roxb***. This species are most suitable for the study area.

VI. ACKNOWLEDGEMENTS

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REFERENCES

[1] Algandaby, MM., Salama, M 2016. Management of the noxious weed; Medicago polymorpha . via allelopathy of some medicinal plants from Taif region, SA. S. J. Biol. Sc.
[2] Arachi JX, 1975. A monograph on weeds of Tamil Nadu. Palms pub., Tirunelveli, TN, India.
[3] Baker, HG, 1974. The evolution of weeds. Annu. Rev. Ecol. Syst., 1–24.
[4] Champion HG, & Seth SK. 1968. A Revised Survey of the Forest Types of India, Govt. of India.
[5] Duke, JA 1983. Handbook of Energy Crops.
[6] El-Sheikh, MA. 2013. Weed vegetation ecology of arable land in Salalah, J. Biol. Sc. 20:291–304.
[7] Ganesan V; Kuralarasi R, Sundarapandi G, Sundar M, Linga KK,2017. Floristic survey of Arunachalapuram village, Virudhunagar District, TN. Int. J. Bot. Stud. 2:4: 49-53.
[8] Holm, L, Pancho, JV, Herberger, JP, Plucknett, DL1979. A Geographical Atlas of World Weeds. John Wiley and Sons.
[9] Holm, L., 1997. World Weeds: Natural Histories and Distribution. John Wiley & Sons.
[10] Holm, LG, Plucknett, DL., Pancho, JV, Herberger, JP, 1977. The World's Worst Weeds. Univ. Press.
[11] Mudgal V, Khanna KK, Hajra PK, 1997. Flora of M.P., BSI Calcutta. Vol. 2.
[12] Reddy CS, Murthy MSR, Dutt CBS. 2002. Vegetation diversity and endemism in Eastern Ghats, India In: Proc. Nat. Sem. EPTRI Press, Hyderabad, Delhi. 109-134.
[13] Roy GP, 1984. Grasses of M.P. Botanical Survey of India Allahabad.
[14] Singh NP, Khanna KK, Mudgal V, Dixit RD, 2001. Flora of M.P. BSI Calcutta.Vol.-3
[15] Verma DM, Balakrishan NP, Dixit RD, 1994. Flora of M.P. BSI Calcutta. Vol.-3

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Table-1: the different 11 sites of tribal district Dhar (M.P.), India

sn	Name of van samiti	compartments	Beat	Total area of compartment (in Hectors)	No. of planted plants	Planted area (in Hectors)
1.	Siyari	125 (1)	Aambakundi	228.44	4000	10
2.	Siyari	125 (3)	Aambakundi	228.44	4000	10
3.	Bhiltalwada	527	Hedari	136.38	8000	20
4.	Semlipura	140	Parwatpura	125.18	8000	20
5.	Ghodabab	128	Chakaliya	212.12	4000	10
6.	Bashamgad	193	Neemkheda	127.42	8000	20
7.	Kamta	200	Sadadiya kua	230.11	8000	20
8.	Nankipura	536	Hedari	175.97	8000	20
9.	Khidkiya	136	Parwatpura	201.58	8000	20
10.	Kakalpura	26,27,32,33,23	Revenue land	23	23000	23
11.	Bhiltalwada	02	Revenue land	20	20000	20

Table-2: Seed collection time period

Sn	Hindi name	Botanical name	Family	Flowering and Fruiting Time (Collection period)
1.	LkkxkSu	*Tectona grandis L.f.*	Verbinaceae	August-December
2.	lQsn fljl	*Albizia procera (L.) Benth.*	Leguminosae	April- November
3.	dkyk fljl	*Albizia lebbeck (L.) Benth.*	Leguminosae	April-November
4.	uhe	*Azadirachta indica Juss.*	Meliaceae	January-June
5.	Lqkccwy	*Leucaena leucocphala (Lam.) De.Wil.*	Leguminosae	August- Feb.
6.	xqyeksgj	*Delonix regia (Bojer) Raf.,*	Leguminosae	March - May
7.	cgs³k	*Terminalia bellirica (Gaertn.) Roxb.*	Combretaceae	May- September
8.	vtwZu	*Terminalia arjuna (Roxb.) Wight & Arn.*	Combretaceae	March -June
9.	Qklh / iFkjkyh	*Dalbergia paniculata (Roxb).Thoth*	Leguminosae	August –October
10.	'kh'ke	*Dalbergia SishuWill.Roxb.*	Leguminosae	March-December
11.	csj	*Ziziphus jujuba Mill.*	Rhamnaceae	September - January
12.	[keSj / 'khou	*Gmelina arborea Roxb.*	Lamiaceae	March –June
13.	[kSj	*Acacia catechu (L.f.) Willd.*	Leguminosae	June-October
14.	foyk;rh ccwy	*Prosopis cineraria (L.) Druce*	Leguminosae	November - April
15.	foyk;rh Ãeyh	*Pithecellobium dulce (Roxb.) Benth.*	Leguminosae	January – August
16.	lhrkQy	*Annona squamosa L.*	Annonaceae	June-October
17.	ccwy	*Acacia nilotica (L.) Del.*	Leguminosae	June- January
18.	Ãeyh	*Tamarindus indica L.*	Leguminosae	November-April
19.	èkko³k	*Anogeissus latifolia (Roxb. ex DC.) Wall. ex Guill. & Per.*	Combretaceae	September - March.
20.	vkeyrk'k	*Cassia fistula L.*	Leguminosae	March- January
21.	dajt	*Pongamia pinnata (L.) Pierre*	Leguminosae	March- August
22.	egk:[k	*Ailanthus excelsa Roxb.*	Simaroubaceae	February-May
23.	Ckakl	*Dendrocalamus strictus (Roxb.) Nees*	Poaceae	December- March
24.	Ekgqvk	*Madhuca longifolia var. latifolia (Roxb.) Chev.*	Sapotaceae	January - June
25.	rsnq	*Diospyros melanoxylon Roxb.*	Ebenaceae	March –August
26.	ysasf³;k	*Lagerstroemia parviflora Roxb.*	Lythraceae	June- September
27.	vkaoyk	*Phyllanthus emblica L.*	Phyllanthaceae	October- March
28.	dSLVkj	*Albizia amara (Roxb.) Boivin*	Leguminosae	March-June
29.	chtk	*Pterocarpus marsupium Roxb.*	Leguminosae	November -March

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Table-3: Different verities of seeds and quantity

iztkfr	**Botanical name↓/compartment →**	**527**	**125**	**125**	**128**	**140**	**193**	**200**	**136**	**536**	**Hkhyryo kMk**	**dkdyiqjk**	**;ksx**
[kSj	*Acacia catechu (L.f.) Willd.*	3	3	3.5	3	3.2	3.5	0	2.9	2.9	3	3.5	**28.6**
ccwy	*Acacia nilotica (L.) Del.*	18	18	18	18	18	18	18	19	18	18	18	**199**
egk:[k	*Ailanthus excelsa Roxb.*	0.6	0.5	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.6	**6**
lQsn fljl	*Albizia procera (L.) Benth.*	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	**2.3**
dSLVkj	*Albizia amara (Roxb.) Boivin*	1	1	1	1	1	1	1	1	1	1.5	1.5	**12**
dkyk fljl	*Albizia lebbeck (L.) Benth.*	0.25	0.25	0.28	0.24	0.3	0.3	0.28	0.22	0.28	0.3	0.3	**3**
lhrkQy	*Annona squamosa L.*	9	9	9	9	9	12.5	9	9	9	10	9	**103.5**
èkko³k	*Anogeissus latifolia (Roxb. ex DC.) Wall. ex Guill. & Perr.*	42	13	11	11	17	16	17	16	16	19	19	**197**
uhe	*Azadirachta indica Juss.*	5	5	5	5	5	5	5	5	5	5	5	**55**
vkeyrk'k	*Cassia fistula L.*	68	20	20	20	24	24	24	27	27	30	32	**316**
Qklh / iFkjkyh	*Dalbergia paniculata (Roxb).Thoth*	40.5	11.6	11.9	11.9	14.8	14.5	14.6	14.6	14.6	21.5	21.8	**170.9**
'kh'ke	*Dalbergia SishuWill.Roxb.*	18	18	18	19	18	18	18	19	18	18	18	**200**
xqyeksgj	*Delonix regia (Bojer) Raf.,*	0.5	0.4	0.5	0.5	0.4	0.45	0.5	0.4	0.45	0.45	0.45	**5**
Ckakl	*Dendrocalamus strictus (Roxb.) Nees*	1	0.5	0.5	0.5	1	1.1	1	1.2	1.2	1.5	1.5	**11**
rsnq	*Diospyros melanoxylon Roxb.*	0	0	0	0	0	0	0	0	0	0	10	**10**
[keSj / 'khou	*Gmelina arborea Roxb.*	4	3.5	3.5	3.5	4	4.1	4	4.1	4.2	5.5	5.5	**45.9**
ysasf³;k	*Lagerstroemia parviflora Roxb.*	12.1	6.6	8	6.6	8.2	9.6	8.2	9.1	8.2	11.1	12.3	**100**
Lqkccwy	*Leucaena leucocphala (Lam.) De.Wil.*	7	9	7	9	7	9	7	7	7	9	8	**86**
Ekgqvk	*Madhuca longifolia var. latifolia (Roxb.) Chev.*	10	6	6	6	10	10	10	10	10	15	40	**133**
vkaoyk	*Phyllanthus emblica L.*	8.1	5.97	6	6.08	6.05	6.25	6.3	6.15	6.25	7.65	6.5	**71.3**
foyk;rh Ãeyh	*Pithecellobium dulce (Roxb.) Ben.*	2.7	1.6	2.4	1.7	1.9	1.6	1.7	1.6	1.9	1.8	1.5	**20.4**
dajt	*Pongamia pinnata (L.) Pier.*	6.5	4.4	4.4	5.4	4.4	4.4	5.5	5.4	4.4	5.6	5.6	**56**
foyk;rh ccwy	*Prosopis cineraria (L.) Druce*	1.2	1.2	1.2	1.3	1.2	1.2	1.3	1.2	1.2	2	2	**15**
chtk	*Pterocarpus marsupium Roxb.*	0.6	0.5	0.5	0.5	0.6	0.7	0.6	0.7	0.7	0.8	0.8	**7**
Ãeyh	*Tamarindus indica L.*	13.6	13.2	13.2	13.2	13.2	14.2	13.2	15.3	15.3	14.5	14.5	**140.2**
LkkxkSu	*Tectona grandis L.f.*	179	175.5	175.5	175.5	175.5	221	176	176	201	176.5	186.5	**2018**
vtwZu	*Terminalia arjuna (Roxb.) Wight & Arn.*	68	69	68	68	70	68	68	68	67	70	71	**755**
cgs³k	*Terminalia bellirica (Gaertn.) Roxb.*	178	121	120	122	126	125	125	127	125	129	130	**1428**
csj	*Ziziphus jujuba Mill.*	47	44	45	44	46	45	47	45	45	50	50	**508**
	Total												**6703.6**

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Table-4: Information about seed showing and germination

Sn	Hindi name	Species	Showing date	Germination date
1.	[keSj / 'khou	*Gmelina arborea Roxb.*	03/06/2021 – 06/06/2021	03/08/2021
2.	[kSj	*Acacia catechu (L.f.) Willd.*	03/06/2021 – 06/06/2021	30/06/2021
3.	'kh'ke	*Dalbergia SishuWill.Roxb.*	03/06/2021 – 06/06/2021	03/08/2021
4.	Ãeyh	*Tamarindus indica L.*	03/06/2021 – 06/06/2021	30/06/2021
5.	ccwy	*Acacia nilotica (L.) Del.*	03/06/2021 – 06/06/2021	29/06/2021
6.	cgs³k	*Terminalia bellirica (Gaertn.) Roxb.*	03/06/2021 – 06/06/2021	20/07/2021
7.	chtk	*Pterocarpus marsupium Roxb.*	03/06/2021 – 06/06/2021	Not germinated
8.	Ckakl	*Dendrocalamus strictus (Roxb.) Nees*	03/06/2021 – 06/06/2021	09-25/07/2021
9.	csj	*Ziziphus jujuba Mill.*	03/06/2021 – 06/06/2021	28/07/2021
10.	dajt	*Pongamia pinnata (L.) Pierre*	03/06/2021 – 06/06/2021	20/07/2021
11.	dkyk fljl	*Albizia lebbeck (L.) Benth.*	03/06/2021 – 06/06/2021	Not germinated
12.	dSLVkj	*Albizia amara (Roxb.) Boivin*	03/06/2021 – 06/06/2021	Not germinated
13.	egk:[k	*Ailanthus excelsa Roxb.*	03/06/2021 – 06/06/2021	20/07/2021
14.	Ekgqvk	*Madhuca longifolia var. latifolia (Roxb.) Chev.*	03/06/2021 – 06/06/2021	09/07/2021
15.	èkko³k	*Anogeissus latifolia (Roxb. ex DC.) Wall. ex Guill. & Perr.*	03/06/2021 – 06/06/2021	04/08/2021
16.	foyk;rh Ãeyh	*Pithecellobium dulce (Roxb.) Benth.*	03/06/2021 – 06/06/2021	28/06/2021
17.	foyk;rh ccwy	*Prosopis cineraria (L.) Druce*	03/06/2021 – 06/06/2021	30/06/2021
18.	Qklh @iFkjkyh	*Dalbergia paniculata (Roxb).Thoth*	03/06/2021 – 06/06/2021	03/08/2021
19.	lhrkQy	*Annona squamosa L.*	03/06/2021 – 06/06/2021	30/07/2021
20.	LkkxkSu	*Tectona grandis L.f.*	03/06/2021 – 06/06/2021	27/07/2021
21.	vtwZu	*Terminalia arjuna (Roxb.) Wight & Arn.*	03/06/2021 – 06/06/2021	20/07/2021
22.	Lqkccwy	*Leucaena leucocphala (Lam.) De.Wil.*	03/06/2021 – 06/06/2021	29/07/2021
23.	lQsn fljl	*Albizia procera (L.) Benth.*	03/06/2021 – 06/06/2021	01/07/2021
24.	rsnq	*Diospyros melanoxylon Roxb.*	03/06/2021 – 06/06/2021	Not germinated
25.	uhe	*Azadirachta indica A.Juss.*	03/06/2021 – 06/06/2021	31/07/2021
26.	vkaoyk	*Phyllanthus emblica L.*	03/06/2021 – 06/06/2021	Not germinated
27.	vkeyrk'k	*Cassia fistula L.*	03/06/2021 – 06/06/2021	23/07/2021
28.	xqyeksgj	*Delonix regia (Bojer) Raf.,*	03/06/2021 – 06/06/2021	25/07/2021
29.	ysasf³;k	*Lagerstroemia parviflora Roxb.*	03/06/2021 – 06/06/2021	Not germinated

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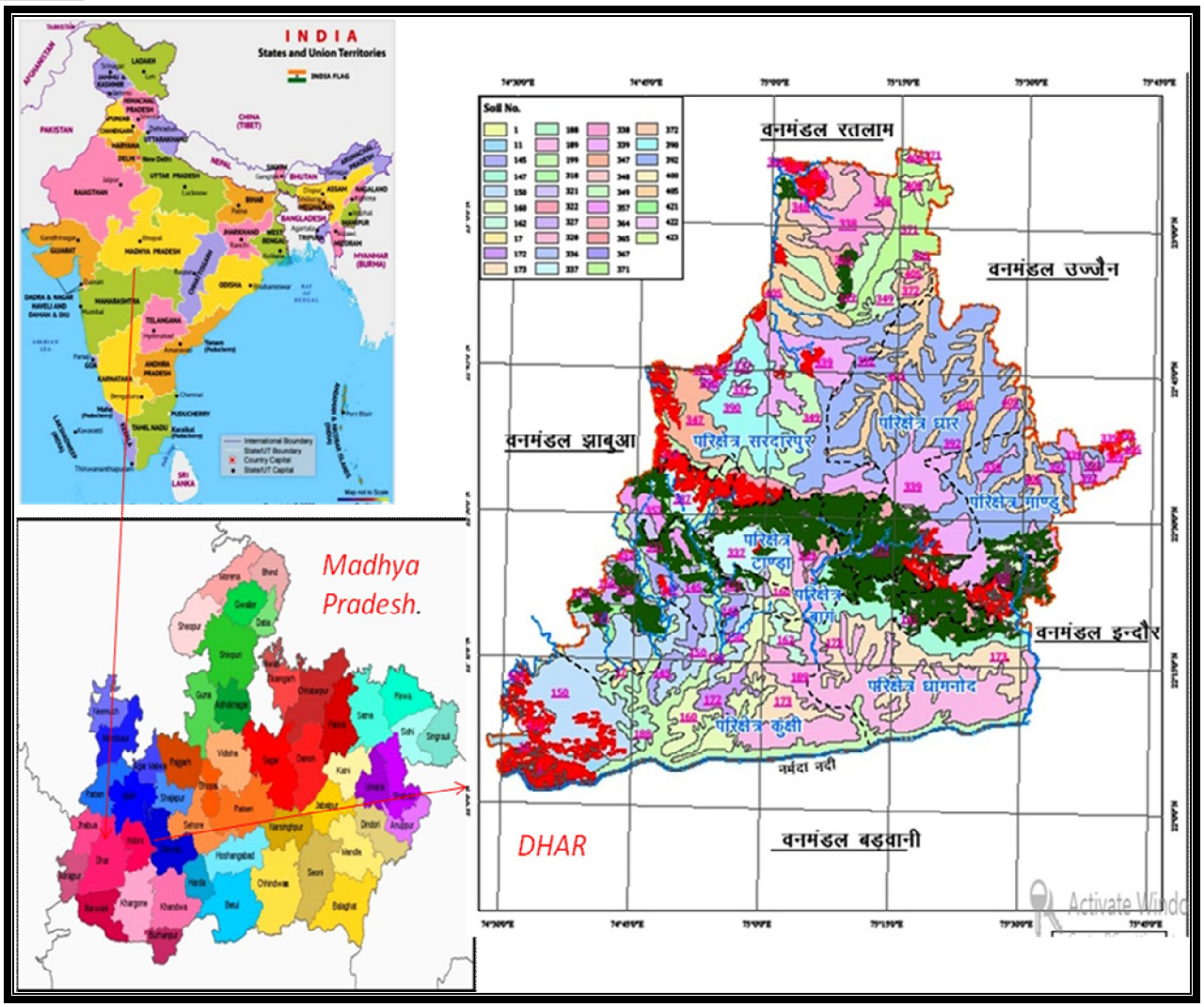

Study area maps

Tectona grandis L.f.

Annona squamosa L.

Albizia amara (Roxb.) Boiv.

Prosopis cineraria (L.) Druce

Acacia nilotica (L.) Del.

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Different varieties Seed collection and treatment after showing

Pit work, CPT and contour observation in study area

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Contour trench in study area

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Seed germination observation in the different field

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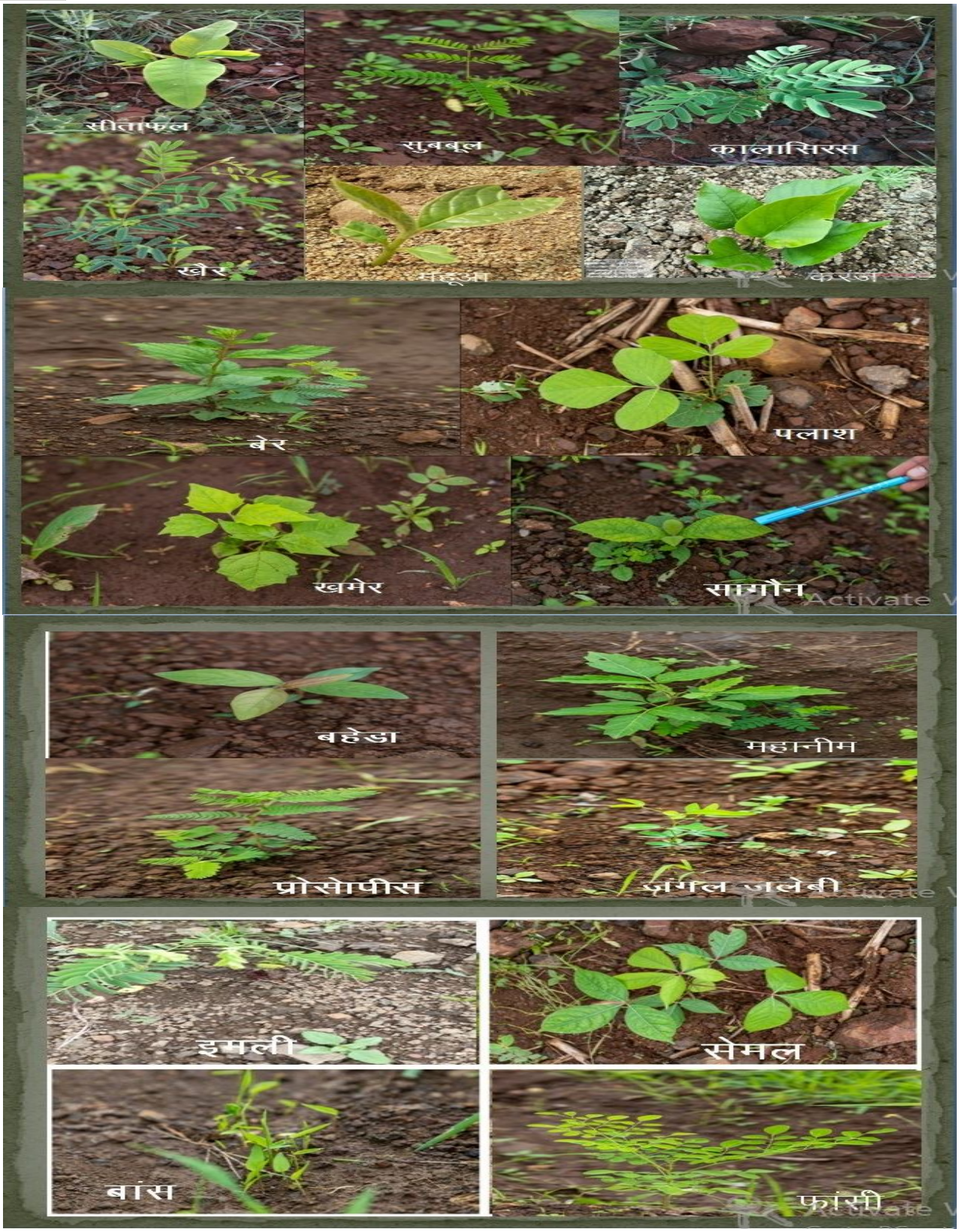

Germinated plant form seeds

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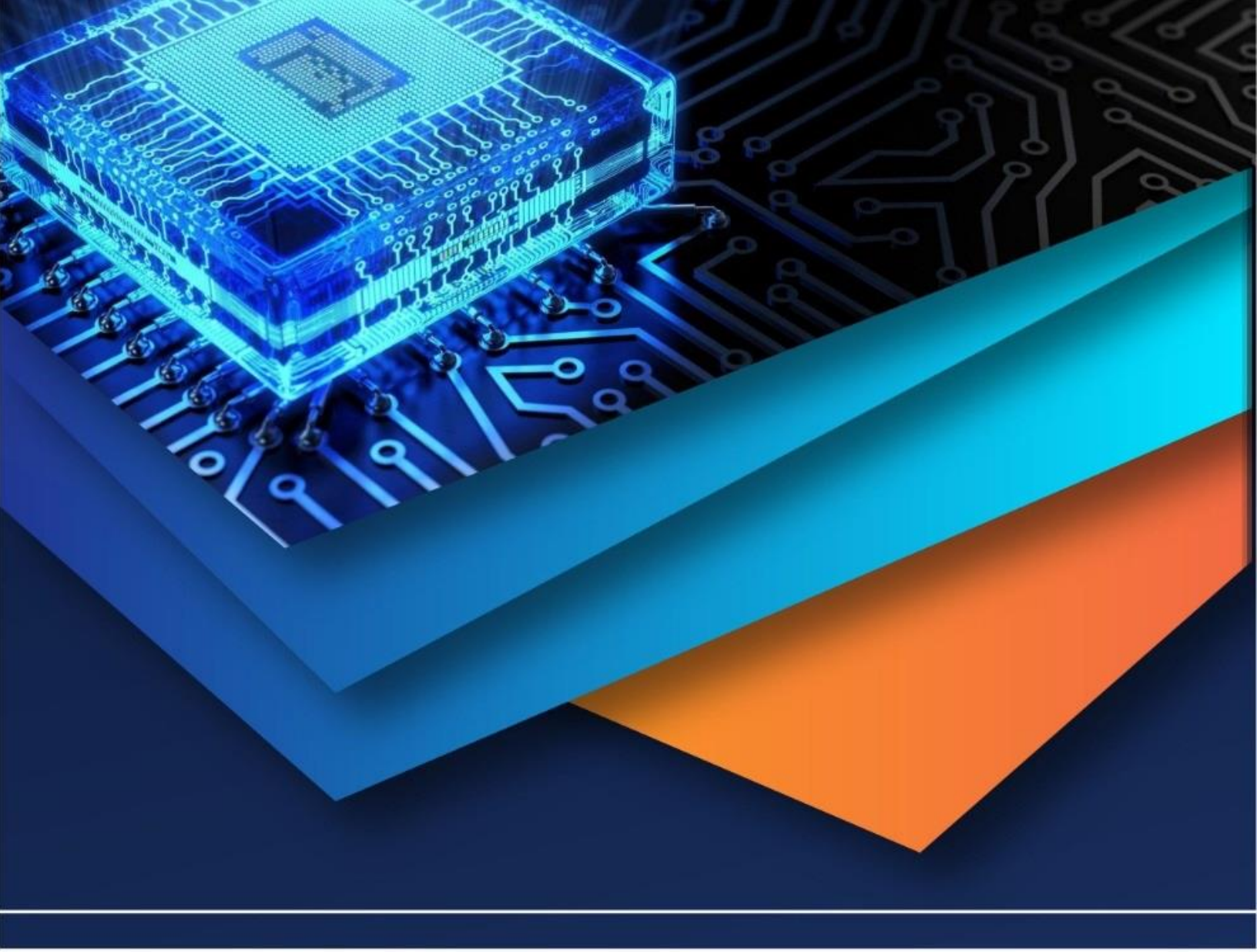

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