

Certificate Course
in
**Seed Ball
Technology**



DEPARTMENT OF BOTANY

Dr. AMBEDKAR COLLEGE

NAAC RE- ACCREDITED WITH "A" GRADE (CGPA 3.45)

Recognised by UGC as College with Potential for Excellence

Deekshabhoomi, Nagpur- 440010 (MS) India

Duration: 31/07/2019 to 09/08/2019

Report On
“Certificate Course on Seed Ball Technology”

Organized by

Department of Botany, Dr. Ambedkar College

Deekshabhoomi, Nagpur-440010

Chairman

Prof. R. V. Patil

Convener

Dr. Subhash R. Somkuwar

Co-ordinator

Dr. Rahul B. Kamble

Date: 24.07.2019

To,

The Principal,

Dr. Ambedkar College,

Deekshabhoomi, Nagpur

Applicant: Dr. Rahul B. Kamble, Department of Botany

Subject: Proposal for 'Certificate Course on Seed Ball Technology'

Respected Madam,

With reference to above mentioned subject, I am submitting herewith the proposal to conduct "**Certificate Course on Seed Ball Technology**" by Department of Botany of our college. This course will be helpful to learn the conceptual ideas and preliminary technical skills in Seed Ball Technology and it's arena as interdisciplinary course.

I request you to sanction the same.

Date:

Place: Nagpur

Your Faithfully,

Dr. Rahul B. Kamble

Forwarded By

Dr. Subhash R. Somkuwar

Head, Dept. of Botany,

Dr. Ambedkar College

Deekshabhoomi, Nagpur

Enclosure;

1. Proposal
2. Curriculum and Design for course

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DR. AMBEDKAR COLLEGE
NAGPUR

CC to 1. Co-Ordinator IQAC

Dr. Ambedkar College, Deekshabhoomi, Nagpur

Proposal for “Certificate Course on Seed Ball Technology”

1. Basic information about the applicant department

- i. **Name of College** – Dr. Ambedkar College, Deekshabhoomi, Nagpur
- ii. **Complete postal address**-Dr. Ambedkar College, Deekshabhoomi, Nagpur-440010, Maharashtra State, India
- iii. **Name of Department**- Botany

2. Details of Course Proposed

- i. **Name of Course**- Certificate Course on Seed Ball Technology
- ii. **Target Group**- UG students
- iii. **Duration of the course**- 30 Hours
- iv. **Medium of the instruction** – English
- v. **Intake capacity**- 164

3. Details of faculty

- i. **Whether college has any degree/diploma related to proposed course**- Yes, college has B.Sc. (Botany, Biochemistry, Biotechnology)
- ii. **Whether the course is prepared by the experts from related field** – Yes, course prepared by faculties of department.
- iii. **Information of Course Co-ordinators** (To be appointed for the course)

S.N.	Name	Course Holding	Department	Qualification	Experience
1	Dr. S.R. Somkuwar	Co-ordinator	Botany	M.Sc. NET-JRF, SET, M.Phil., Ph.D	12 Years
2	Dr. Rahul B. Kamble	Co-ordinator	Botany	M.Sc., Ph. D. (Botany), FIAAT	7 Years

iv. Information of faculty members (To be appointed for the course) if any

S.N.	Name	Department	Qualification	Experience
1	Dr. N.R. Ugemuge	Maharashtra State Biodiversity Board, GoM	M.Sc. Ph.D.	30 Years
3	Dr. S.R. Somkuwar	Botany	M.Sc. NET-JRF, SET, M.Phil., Ph.D	11 Years
4	Dr. Rahul B. Kamble	Botany	M.Sc., Ph. D. (Botany), FIAAT	6 Years

4. Details of physical infrastructure available for the course

- i. **Classroom with projector** – Available
- ii. **Reading material**- available in core library of Botany Dept.
- iii. **Software**- freeware available with computer and internet facility at Computer Science Dept.



Course Co-ordinator
Dr. Rahul B. Kamble



Co-ordinator & HoD, Botany
Dr. S.R. Somkuwar

Dr. Ambedkar College Deekshabhoomi Nagpur

Certificate Course on Seed Ball Technology

Syllabus (30 Hours)

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Unit: I (10 hours)

Morphology and Development of Seed: Flower type, Flower structure in relation to seed development, Types of fruits and their development. Factors affecting seed set. Types of Seeds; Importance and characteristics of seeds. Seed morphology of important plants and their identification. Seed and seed coat structure. Seed dispersal.

Unit: II (10 hours)

Germination and factors affecting germination. Seed dormancy: definition, types and mechanism, Advantages and disadvantages of dormancy. Viability Testing: definition and importance of viability tests; different viability tests; quick viability test (TZ- test) - advantages, principle, preparation of seeds and solutions, procedure, evaluation and calculation of test results.

Unit: III (10 hours)

Seed Ball Technology and its Significance: History of Seed Balls, Need of Seed Balls, Formation of Seed Ball, Amendments Required in Seed Ball Formation, Seed Placement and Size of Seed Balls, Spreading or throwing of Seed Balls, Importance of Seed Balls, Limitations of Using Seed Balls. Seed balls as a tool of germplasm restoration.



Course Co-ordinator
Dr. Rahul B. Kamble



Co-ordinator & HoD, Botany
Dr. S.R. Somkuwar

Dr. Ambedkar College Deekshabhoomi Nagpur
Certificate Course on Seed Ball Technology

Lecture and Exam Scheme

Course Name	Name of Paper	Lecture per day	Total No. of Hours	Online Unit Test	Viva Voce	Total Marks
Certificate Course	Seed Ball Technology	1	30	30	20	50



Course Co-ordinator
Dr. Rahul B. Kamble



Co-ordinator & HoD, Botany
Dr. S.R. Somkuwar



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Dr. Ambedkar College Deekshabhoomi Nagpur
Department of Botany

Notice

Date: 11.03.2019

All the students of B.Sc. Botany, Biochemistry and Zoology are hereby informed that the Department of Botany is going to organize an add-on course under the title "Certificate Course on Seed Ball Technology" from 31st July 2019 to 09th August 2019. This is a compulsory practice for internal assessment so students have to join the course ASAP with the teacher in charge.



Course Co-ordinator
Dr. Rahul B. Kamble



Co-ordinator & HoD, Botany
Prof. S.R. Somkuwar



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Dr. Ambedkar College Deekshabhoomi Nagpur
Certificate Course on Seed Ball Technology

Evaluation: Result Sheet

Sr. No.	Name of Student	Unit Test (30)	Viva Voce (20)	Total Marks (50)
1	AAKANSHA S. GAJBHIYE	27	20	47
2	ACHAL P. DHAWRAL	25	20	45
3	ADITI S. GHODE	22	20	42
4	AKANSHA A. MAHULE	26	20	46
5	ALKA DUBEY	21	20	41
6	AMINA A. ANSARI	27	20	47
7	ANISHA V. GAIKWAD	28	20	48
8	ANUSHKA CHINCHMALATPURE	26	20	46
9	ASHWINI D. UIKEY	22	20	42
10	BHAGYASHREE S. THAWARE	23	20	43
11	DAKSHITA S. RAMTEKE	28	20	48
12	DEEPALI D. RAUT	22	20	42
13	DEPTI P. KOTANGALE	22	19	41
14	GULABSHA S. KHAN	25	20	45
15	HEMANGI S. WAGH	28	20	48
16	HIMANI A. MESHRAM	27	22	47
17	JANHVI A. GAWANDE	29	20	49
18	JANKI J. PARVADIYA	28	20	48
19	JASMINE D. SAKHARE	25	20	45
20	KETKI H. MOUNDEKAR	24	18	42
21	KHUSHBU D. AWAZE	23	20	43
22	MAHIMA S. SHIWARE	22	18	40
23	MAYURI P. THAKARE	25	20	45
24	MEGHA K. RAUT	22	20	42
25	NAZNIN M. KHAN	23	20	43
26	NEEMA R. YADAV	28	20	48
27	NEHA R. GEDAM	26	20	46
28	POOJA R. RAO	21	20	41
29	PUJA S. YENDE	27	20	47
30	PRISHA C. WAGHMARE	28	20	48
31	RIYA S. MATE	25	20	45
32	RUCHIKA S. KAMBLE	21	20	41
33	RUPAL D. PAWAR	21	20	41
34	RUPALI B. BIJEWAR	25	20	45
35	RUPERI C. MESHRAM	24	20	44
36	RUTIYA S. ZOMBRE	21	20	41
37	SAMIKSHA R. BHAGAT	25	20	45
38	SAYALI J. DONUDE	26	20	46
39	SEJAL D. RAMTEKE	24	18	42
40	SHATABDI V. ADE	25	20	45
41	SHRADDHA J. YADAV	27	20	47
42	SHRIYA B. THAKSE	22	20	42
43	SHRUTI J. RATHI	24	20	44

Sr. No.	Name of Student	Unit Test (20)	Viva Voce (30)	Total Marks (50)
44	SHRUTI P. DAGWAR	20	18	38
45	UNNATI R. BOKADE	25	20	45
46	VAISHNAVI A. DHUDASE	22	20	42
47	VAISHNAVI S. TIKRE	21	20	41
48	AKASH Y. DUDHAPACHARE	20	15	35
49	ASHISH D. DUPARE	23	20	43
50	BABASAHEB S. KOTHAVALA	23	20	43
51	DURESH D. DHARGAVE	22	20	42
52	HARIOM C. PATLE	25	20	45
53	HARSH M. ATRAM	20	16	36
54	HIMANSHU R. TEMBHURNE	22	20	42
55	KRUSHAN A. DAHIKAR	23	20	43
56	MUKUNDA S. MOHATURE	25	20	45
57	SAHIL S. THAWARE	26	20	46
58	SARVESH R. OLLALWAR	25	20	45
59	SUNNY M. OMKAR	20	17	37
60	VAIBHAV S. JOSHI	20	18	38
61	VRUSHABH T. SAKHARKAR	22	20	42
62	KSHITIJ R. NIMAWAT	21	20	41
63	RITESH A. CHAVHAN	20	15	35
64	AAKANSHA R. DONDEWAR	21	20	41
65	AISHWARYA T. SUDHAN	23	20	43
66	AMRUTA L. SHINDE	20	17	37
67	ANJALI D. PATIL	25	20	45
68	ANKITA M. SHEWADE	22	20	42
69	APEKSHA V. RANGARI	20	16	36
70	APOORVA R. WAKODIKAR	28	20	48
71	ASHIKA S. LOKHANDE	25	20	45
72	AYUSHI S. GAJBHIYE	26	20	46
73	CHETANA P. GAUTAM	23	20	43
74	GAURI P. RAUT	21	20	41
75	HIMANSHI S. SAKHARE	25	20	45
76	ISHA A. KHETADE	22	20	42
77	KARTIKI P. JONNALWAR	20	17	37
78	KUNIKA B. DONGRE	26	20	46
79	LAXMI P. WALDE	21	20	41
80	NEHA S. BORKAR	20	18	38
81	OJASWITA A. RAMTEKE	23	20	43
82	PALLAVI S. BHODAKE	22	20	42
83	PRACHI N. RAIKWAR	26	20	46
84	PRAGATI R. SHARMA	26	20	46
85	PRANJALI V. SHERKI	20	14	34
86	PRAPTI V. MATEY	24	20	44
87	PRASIDDHI S. THAKRE	20	16	36
88	SAYALI R. MAHURE	23	20	43
89	SHAHEEN S. SHAIKH	22	20	42

Sr. No.	Name of Student	Unit Test (20)	Viva Voce (30)	Total Marks (50)
90	SHREYA A. DAHIWALE	24	20	44
91	SHREYA V. PANDE	25	20	45
92	SNEHA B. SAKHARE	25	18	43
93	SONALI G. DIYEWAR	22	20	42
94	TANIYA S. BOSE	20	18	38
95	TRUSHALI G. SOMKUWAR	21	20	41
96	YOGITA D. SHEMBEKAR	22	20	42
97	ADITYA A. GADPAYLE	23	20	43
98	ADITYA S. ZADE	27	20	47
99	ANSHUL M. DAHIWALE	23	18	41
100	HARSHAL D. KALE	22	20	42
101	HARSHAL R. BAMBALE	25	20	45
102	MAYUR S. GHARAL	26	20	46
103	PALASH J. SAWALKAR	25	20	45
104	PRAJWAL A. GUPTA	22	20	42
105	RAVI M. MADKE	25	20	45
106	RITWIK D. UIKEY	26	20	46
107	RUDHVIK S. BOBADE	22	18	40
108	SAHIL M. SHAMBHARKAR	23	20	43
109	SHEELRATNA R. BADOLE	22	20	42
110	SURAJ S. DUBE	21	20	41
111	TAHIR N. SHEIKH	27	20	47
112	TARUN N. PATIL	22	20	42
113	VAIBHAV A. NEWARE	20	18	38
114	VEDANT S. GAUTAM	21	20	41
115	YAMESH S. LILHARE	26	20	46
116	AACHAL G. PATHAK	23	20	43
117	ADITI S. TAMBE	20	18	38
118	ANCHAL V. CHANDRIKAPURE	21	20	41
119	ARYA B. KHADSE	25	20	45
120	BHAGYASHRI R. MESHARAM	20	16	36
121	CHETANA C. PATIL	22	20	42
122	DEEPIKA C. BHASARKAR	25	20	45
123	GEETAKSHI N. SHENDE	26	20	46
124	HIMANI R. NIKHAR	20	17	37
125	JAYA K. GAUTAM	26	20	46
126	KIRAN S. PAL	22	20	42
127	KOMAL V. BHADDEKAR	21	20	41
128	MAYURI R. LAHANE	23	20	43
129	MONALI D. JANBHANDU	25	20	45
130	NIKHITA V. TAMBDE	21	20	41
131	NIKITA B. PATLE	25	20	45
132	NIKHITA V. KHADSE	22	20	42
134	PAYAL M. KAMBLE	25	20	45
135	POOJA A. GAJBE	26	20	46
136	PRAGATI P. MESHARAM	22	20	42

Sr. No.	Name of Student	Unit Test (20)	Viva Voce (30)	Total Marks (50)
137	PRATI KSHA B. SHARMA	20	15	35
138	PRATI KSHA S. NASARE	27	20	47
139	PRIYA R. THAWKAR	25	20	45
140	PRIYANKA B. PAHADE	22	20	42
141	PRIYANKA R. BHIVAGADE	21	20	41
142	RIYA A. DHANVIJAY	25	20	45
143	RUCHIKA D. BHAGAT	20	17	37
144	RUPAL D. RAMTEKE	20	16	36
145	SAKSHI R. GADIGONE	25	20	45
146	SAKSHI V. VAIRAGADE	25	20	45
147	SELVI S. THOOL	22	20	42
148	SHRADDHA D. SONTAKKE	26	20	46
149	SHREYA S. NAIK	20	15	35
150	SHRUTI C. MESHRAM	22	20	42
151	SUSHAMA V. MESHRAM	25	20	45
152	TASMIYA F. KHAN	20	18	38
153	TRUPTI L. NASKOLKAR	22	20	42
154	TWINKLE R. GAJBHIYE	21	20	41
156	VAISHNAVI A. KATHANE	20	15	35
157	VIDISHA V. ALE	20	16	36
158	ABHAY M. SHAMBHARKAR	23	20	43
159	AYUSH A. MANIKKUWAR	20	15	35
160	HITESH B. SADANSHIV	20	15	35
161	LUCKY N. DAHARWAL	26	20	46
162	PRAJVAL M. TIJARE	22	20	42
163	SHASHANK S. KASTURWAR	20	18	38
164	TUSHAR P. MADKE	25	20	45



Course Co-ordinator
Dr. Rahul B. Kamble



Co-ordinator & HoD, Botany
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Department of Botany

Report on

“Certificate Course on Seed Ball Technology”

In the academic session 2019-2020, a Certificate Course program on “Seed Ball Technology” in Botany was conducted in the Department of Botany during 31st July 2019 to 09th July 2019 (3 hours/day). Total **164 students** were admitted for this Certificate Course. Through this course, students got knowledge about various experimental techniques and tools for scientific data analysis through live demonstration and hands on training. Assessment was done via Unit Test (MCQ type) and viva voce. All the students scored good marks and learnt skill to appreciable extent. All the faculty members of Department of Botany worked hard for the successful conduction and logistic support for this program.

Methodology

- History of Seed Balls
- Need of Seed Balls
- Formation of Seed Ball
- Amendments Required in Seed Ball Formation
- Seed Placement and Size of Seed Balls
- Spreading or throwing of Seed Balls
- Importance of Seed Balls
- Limitations of Using Seed Balls
- Seed balls as a tool of germplasm restoration

During the Certificate Course, students learned an innovative way to make Seed balls. The Seed balls were manufactured out of a mixture of soils, manure and seeds. These Seed balls are intended to be thrown near hills, schools, wastelands especially during the Botanical Excursion in order to retain green cover. This workshop ignited the young minds to be concerned about environment friendly practices and conservation of nature. Students have prepared 600 seed balls from various local fruit trees seeds collected by them. Department of Botany also provided the seeds of rare medicinal plants from the “Seed bank” of dept. The seeds used from the plants chiefly Nirmali, Gunj, Sitaphal, Madnya, Kulthi, Tilwan, Putranjivi, Niruki, Hirda, Awla etc.

Certificate:



Glimpses:



Course Co-ordinator
Dr. Rahul B. Kamble

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