## Kisan Veer Mahavidyalaya, Wai List of Projects in Environmental Studies-2023-24 B.Sc- II

Sr .No.	Roll No	oll No Name of students Project name				
1.	1	Ingawale Sanika Sanjay	Organic Farming			
2.	2	Hagavane Tejaswi Ajit				
3.	30	Sawant Chetana Ashok				
4.	3	Chavan Snehal Suresh	Water Conservation			
5.	4	Wadkar Omkar Ashok				
6.	5	Dalvi Sanket Mohan				
7.	34	Jadhay Apeksha Manohar				
8.	6	Kamble Aditya Rajesh	The study of selected Dams and its environmental impact			
9.	7	Jadhay Shubham Laxman				
10.	8	Khare Swapnil Sandip				
11.	9	Ithape Viraj Ravindra				
12.	10	Barge Mayur Keshav				
13.	12	Wagh Akanksha Rajendra	Biofertilizer			
14.	13	Gaikwad Akanksha Hanmant				
15.	85	Akhade Komal Kondiram				
16.	86	Sanas Vishakha Pandurang				
17.	18	Chavan Anuradha Krushant	Disaster Management			
18.	19	Mahamuni Jitendra Sonal				
19.	20	Jadhav Sakshi Sachin				
20.	22	Jagtap Ishwari Jeetendra				
21.	42	More Sanchita Vikas				
22.	28	Mandhare Athary Rajendra	E -waste and its impact on Environment			
23.	82	Panse Athary Mahesh				
24.	91	Mahangade Sandesh Raju				
25.	114	Yaday Ayishkar Anil				
26.	117	Yadav Anuraj Babasaheb				
27.	23	Shelar Sahil Sampat	Online voting system			
28.	24	Ithape Prajjwal Bhaskar				
29.	26	Jadhav Sourav Santosh				
30.	32	Nikam Aryan Jyotikant				
31.	17	Vedpathak Athary Sunil	Swacch Bharat Abhiyan			
32.	25	Pawar Kiran Sarjerav				
33.	27	Pawar Nikhil Dattatray				
34.	69	Bhosale Abhijit Santosh				
35.	65	Koli Anjali Vitthal	Climate change			
36.	66	Kadam Prajwal Rajendra				
37.	104	Yadav Rutuja Anil				
38.	36	Ithape Mrunalini Jitendra				
39.	78	Dixit Amisha Parmeshwar				
40.	87	Jadhav Sanika Rajendra				
41.	55	Anabhule Abhinay Sunil	Green revolution in India			
42.	58	Bagal Prasad Shukracharya				
43.	59	Bandal Adinath Suresh				
44.	63	More Swarup Ravindra				
45.	60	Pawar Shantanu Sanjay	Biological control and its important in			
46.	61	Mandhare Prathamesh Satish	agriculture			
47.	62	Mandhare Shivam Anil				
48.	57	Pawar Tejas Shamrao				

ep dikenserstern utsternber 19 nautum er normer ch	7() waster out to the 71	Darckar Parth Deepak Mahadik Sahil Pramod	Plant Growth Regulators
submercing processors	101	Devre Bhavesh Namdey	
often electronic	102	Kadam Aditya Sanjay	Environmental Policy In India
52,	egona arrivanti alianti di alianti di a	Chayan Aniket Mahadey	
- 53.	73	Pachange Chetan Dattatray	in the same of the
54,	105	Shelar Rohit Shrayan	
56.	37	Ram Ranikumari Sarojkumar	Report on Medicinal plants
57.	67	Lokhande Rohit Suhas	Pond and an Ecosystem
58.	68	Kadam Omkar Vijay.	, , , , , , , , , , , , , , , , , , , ,
59.	21	Yaday Sanika Bhanudas	Some endangered and endemic anima
60.	40	Shinde Tanishka Sanjay	species in India
61.	41	Dhamal Harshada Ayinash	species in times
62.	109	Jadhay Sanika Ramesh	
63.	110	Dhanawade Shweta Santosh	
64.	43	Tarate Shruti Krishndey	Soil pollution
65.	45	Pisal Tanuja Dattatray	Son ponation
-	54	Tarate Vinay Vijay	
66.		Biramane Mayuri Dhananjay	
67.	96 97	Chaudhari Sadashiv Dnyaneshwar	
68.	49	Kadam Payal Dnyaneshwar	Noise pollution
69.			Noise polition
70.	74	Jagtap Sanika Vijay Kalokhe Aditi Kamalakar	
71.	75	Kalokhe Shraddha Sachin	
72.	76	Sanas Akash Namdev	
73.	83		
74.	84	Kadam Prathamesh Dadasaheb	Rajgira: A valued Cereal
75.	112	Bhilare Sakshi Yuvraj Bhilare Sunil Sneha	Rajgira. A valued Cerem
76.	113		Finger millets : A valued Cereal
77.	93	Thopate Divya Dashrath Bhilare Sanika Dattatray	Finger millets : A valued Cereal
78.	94	Karade Sanika Balu	
79.	95	Mahangade Ashutosh Satish	
80.	103	Gaikwade Soham Sushant	Nursery Management
81.	29	Kadam Mangesh Suresh	, , , , , , , , , , , , , , , , , , ,
82.	92	Dhumal Priyanka Jalindra	Krishna river water pollution
83.	35	Ithape Mrunalini Jitendra	, p
84.	36	Dixit Amisha parmeshwar	
85.	78	Jadhay Sanika Rajendra	
86.	87	Wadkar Pranav Ajit	Garbage Management
87.	44	Kasurday Mayur Parshuram	
88.	46	Nikam Siddhesh Sandeep	
89.	100		1
90.	107	Thorvae Raj Vijay Pawar Swamini Krishnraj	Limnological study of Venna Lake
91.	88	Chikane Sanika Suresh	Diminological stray of Female 2016
92.	89	Mandale Siddhi Dinkar	
93.	90		Sericulture
94.	115	Kamble Tushar Mahadev	Medical waste and management
95.	14	Nikita Kiran Waghmare	Wedical waste and management
96.	15	Chavan Utkarsha Sanjiv	
97.	16	Neha Kiran Waghmare	
98.	38	Rucha Santosh Deshmukh	
99.	39	Kale Snehal Hindurao	Study of selected Dam and it's
100.	122R	Bhosale Om Ravindra	environmental Impact Augus
101.	123	Khare Athary Nandkumar	1
102.	(24) S	Jagtap Avishkar Jeevan	PRINCIPAL
	K	Environmental Studies Isan Veer Mahavidyalaya Wai, Dist. Satara.	KISAN VEER MAHAVID Wai, Dist. Satar

## B.Sc..-II ENVIORMENT SCINECE CERTIFICATES OF COMPLETION

# JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI

### **CERTIFICATE**

#### **Environment of Studies**

This is to certify that Miss. Sanika Ramesh Jadhav Of B.sc. II has completed the report of the field work on "Endangered and endemic animal Species in India" of Environmental Science subject satisfactory under the guidance of Prof.Dr.Mrs.M.V.INGAWALE during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Prof.Dr. Mrs.M.V.INGAWALE

Co-Ordinator

Prof. Dr Mrs.M.V.NGAWALE Coordinator

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

J. J.

Principal Prof. Dr . G .J. Fagare

Kisan Veer Mahavidyalaya Wai

# JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI

## CERTIFICATE

## **Environment of Studies**

This is to certify that Miss. Harshada Avinash Dhamal Of B.sc. II has completed the report of the field work on "Endangered and endemic animal Species in India" of Environmental Science subject satisfactory under the guidance of Prof.Dr.Mrs.M.V.INGAWALE during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor

Prof.Dr. Mrs.M.V.INGAWALE

Co-Ordinator

Prof. Dr Mrs.M.V.NGAWALE

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal

Prof. Dr. G.J. Fagare

Kisan Veer Mahavidyalaya Wai

#### **CERTIFICATE**

This is a certificate that Mr. Parth Deepak Darekar B. Sc II class has completed the report of fieldwork on "Plant Growth Regulators" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

3

3

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

Shivaji university Kolhapur

# JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDHYALAYA, WAI.



#### CERTIFICATE

This is to certify that Mr. Sanas Vishal Namdev of B.Sc. II class has successfully completed the report of fieldwork on "Green House Effect" of the environment science subject satisfactory under the guidance of Dr. Mrs. M. V. Ingawale during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M. V. Ingawale

13

Supervisor

**Environmental Studies** 

External Examiner

Shivaji University, Kolhapur

Dr. Mrs. M. V. Ingavale

Co-condinator
Environmental Studies
Hisanotumentala Stydies
Wai, Dist. Satara.

Principal

Kisan Veer Mahavidyalaya, Wai.

Dr. G. J. Fagare

## JANTA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA

WAI Dist-Satara



This is to certify that, Miss.Sanika Sanjay Ingavale of B.Sc.-II Class, has completed the report of the field work on the 'study of 'ORGANIC FARMING' Environmental Science subject satisfactorily, under the guidance of Mrs. Dr.M.V.Ingavale during the year 2023-24.as prescribed by the Shivaji University, Kolhapur.

Supervisor

Mrs. Dr.M.V.Ingawale

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal.

Prof.Dr.G.J.Fagare

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

This is a certificate that Miss. Bhilare Sanika Dattatray B. Sc II class has completed the report of fieldwork on Finger millets: A valued cereal of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

Shivaji university Kolhapur

External examiner

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA,WAI



## CERTIFICATE

**Environment of Studies** 

This is to certify that Mr. Sanas Akash Namdev Of B.Sc. II has completed the report of the field work on "Environmental Disaster" of Environmental Science subject satisfactory under the guidance of Dr. Mrs. M. V. INGAWALE during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor

3

3

3

3

9

3

)

1

9

-

Dr. Mrs. M. V. INGAWALE

Co-Ordinator

Prof. Dr.

Mrs. M.V.INGAWALE

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara,

Dr. G.J. Phagare Principal

Kisan Veer Mahavidyalaya Wai

## KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

## **Environment of Studies**

This is to certify that Miss. Mandale Siddhi Dinkar of B.Sc II
Class has completed the report of the field work on "Limnological Study
Of Venna Lake" of the Environment subject satisfactory under the
guidance of Prof. M.V.Ingawale during the year 2022-2021 as
prescribed by the Shivaji University, Kolhapur

Supervisor

Prof. Dr. M.V.Ingawale

Co-Ordinator

Dr. M.V.Ingawale

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara:

Prof. Dr. G.J.Fagare

## KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Miss. Pawar Swamini Krishnraj of B.Sc II Class has completed the report of the field work on "Limnological Study Of Venna Lake" of the Environment subject satisfactory under the guidance of Prof. M.V.Ingawale during the year 202**3**-202**b** as prescribed by the Shivaji University, Kolhapur.

Supervisor

Prof. Dr. M.V.Ingawale

Principle

Prof. Dr. G.J.Fagare

Co-Grelinator

Dr. M.V.Ingawale

Coordinator

Environmental Studies

Kisan Veer Mahavidyalaya

Wai, Dist. Satara.

### **CERTIFICATE**

This is a certificate that Mr. Parth Deepak Darekar B. Sc II class has completed the report of fieldwork on "Plant Growth Regulators" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

Environmental studies

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Salara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

External examiner

Shivaji university Kolhapur

## CERTIFICATE OF THE SUPERVISOR





This is to certificate that *Ithape Prajwal Bhaskar* Of B.Sc. 2<sup>nd</sup> Class has completed the report of the fieldwork on "ONLINE VOTING SYSTEM" of the Chemistry subject satisfactory under the guidance of Dr. Mrs. M.V.Ingawale Taking during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Supervisor

Dr. Mrs. M.V.Ingawale

Co-ordinator

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

K.V.M Collage Wai, Principle

Dr.G.J.Fagare

## CERTIFICATE OF THE SUPERVISOR





This is to certificate that *Mr. Khare Atharv Nandkumar*, *Mr. Jagtap Avishkar Jeevan*, *Mr. Bhosale Om Ravindra* Of B.Sc. Class has completed the report of the fieldwork on "*The Study of Selected Dam & It's Environmental Impact*" of the Chemistry subject satisfactory under the guidance of Dr. Mrs. M.V.Ingawale Taking during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Supervisor

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Dr. Mrs. M.V.Ingawale

Co-ordinator

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

K.V.M Collage Wai, Principle

Dr.G.J.Fagare

JantaShikshanSanstha's

## Kisan Veer MahavidyalayaWai



## CERTIFICATE

This is to certify that, *Rutuja Anil Yadav* of **B.Sc.II** class has completed the report of the fieldwork on "*Climate Change*" of Environmental Science Subject Satisfactory under the guidance of **Dr. Mrs. M.V.Ingawale** during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Dr. Mrs. M.V.Ingawale

Supervisior

Co-ordinator

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Dr.G.J.Fagare

K.V.M Collage Wai, Principle

JantaShikshanSanstha's

## Kisan Veer MahavidyalayaWai



## CERTIFICATE

This is to certify that, *Prajwal Rajendra kadam* of **B.Sc. II** class has completed the report of the fieldwork on "*Climate Change*" of Environmental Science Subject Satisfactory under the guidance of **Dr. Mrs. M.V.Ingawale** during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Dr. Mrs. M.V.Ingawale

Supervisior

**Co-ordinator** 

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara

Dr.G.J.Fagare

K.V.M Collage Wai, Principle

## KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

#### **Environment of Studies**

This is to certify that Of **B.Sc. II** Miss **Pol Naitik Sanjay** has completed the report of the field work on "**Biodiversity in kas Pathar**" of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAVALE

During the year 2023-2024 as prescribed by the Shivaji University,

Stock -

Kolhapu

---

Co-Ordinator

Mrs. Dr. M.V.INGAVALE
Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Mrs. Dr. M.V.INGAVAL

Principal G.J.Fagare

Kisan Veer Mahavidyalaya Wai

## JANTA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA

WAI Dist-Satara



This is to certify that, Miss.Snehal Hindurao kale. of

**B.Sc II** Class,has completed the report of the field work on the 'study of

'Medical Waste And Management'

Environmental Science subject satisfactorily, under the guidance of Miss .D.A.Chodhari during the year 2023-24 as prescribed by the Shivaji University, Kolhapur.

Supervisor

Mrs. Dr. M. V. Ingawale

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara Principal.

Prof.Dr.G.J.Fagare

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

This is a certificate that Miss. Bhilare Sanika Dattatray B. Sc II class has completed the report of fieldwork on Finger millets: A valued cereal of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023- 2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai Dist. Separa.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

External examiner

Shivaji university Kolhapur

## JANTA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA

WAI Dist-Satara



This is to certify that,

Mr .Rohit Suhas Lokhande of

B.Sc.-II Class, has completed the report of the field work on the 'study of

'Pond and an Ecosystem'

Environmental Science subject satisfactorily, under the guidance of Miss .D.A.Chodhari during the year 2023-20.as prescribed by the Shivaji University, Kolhapur.

Supervisor

Principal.

Mrs. Dr.M.V.Ingawale Environmental Studies Prof. Dr.G.J. Fagare Kisan Veer Mahavidyalaya
Wai, Dist. Satara

## JANTA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA

WAI Dist-Satara



This is to certify that, Mr.Omkar vijay kadam of

B.Sc.-II Class,has completed the report of the field work on the 'study of

'Pond and an Ecosystem'

Environmental Science subject satisfactorily, under the guidance of Miss .D.A.Chodhari during the year 2023-20.as prescribed by the Shivaji University, Kolhapur.

Supervisor

Principal.

Mrs. Dr.M.V.Ingawale Coordinator Prof.Dr.G.J.Fagare
Kisan Veer Mahavidyalaya

Wai, Dist. Satara.

## KISAN VEER MAHAVIDYALAY, WAI

## CERTIFICATE

This is to certify that, Amisha Parmeshwar Dixt, Mrunalini Jitendra Ithape, Priyanka Jalindra Dhamal, Sanika Rajendra Jadhav of B.Sc. - II Class has completed the report of the fieldwork on "Krishna River Water Pollution" of Environmental Science subject satisfactory under the guidance of Prof.Ingawale Miss during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor Prof. Ingawale Miss

Coordinator
Dr. M.V. Ingawale
Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principle KisanVeer Mahavidyalaya, Wai

## KISAN VEER MAHAVIDYALAY, WAI

## **CERTIFICATE**

This is to certify that, Amisha Parmeshwar Dixt, Mrunalini Jitendra Ithape, Priyanka Jalindra Dhamal, Sanika Rajendra Jadhav of B.Sc. - II Class has completed the report of the fieldwork on "Krishna River Water Pollution" of Environmental Science subject satisfactory under the guidance of Prof.Ingawale Miss during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor Prof. Ingawale Miss Coordinator
Dr. M.V. Ingawale
Coordinator
Environmental Studies

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara. Ingar.

Principle KisanVeer Mahavidyalaya, Wai

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

This is a certificate that Mrs. Mangesh Suresh Kadam B. Sc II class has completed the report of fieldwork on Nursery Management of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

Shivaji university Kolhapur

External examiner

## KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Miss. Wagh Akanksha Rajendra Of B.SC. II 'B' Group has completed the report of the field work on **Biofertilizer** of Environmental Science subject satisfactory under the guidance of Dr.Miss.M.V. Ingawale during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor Dr.Mrs. M.V. Ingawale

3

9

3

3

3

3

9

3

3

9

9

7

7

Jagar.

Principal

Dr. G. J. Fagare

Kisan Veer Mahavidyalaya

Wai

Co-Ordinator Dr.Mrs. M.V. Ingawale

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

## KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Miss. Gaikwad Akanksha Hanmant Of B.SC. II 'B' Group has completed the report of the field work on **Biofertilizer** of Environmental Science subject satisfactory under the guidance of Dr.Miss.M.V. Ingawale during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor

Dr.Mrs. M.V. Ingawale

Co-Ordinator Dr.Mrs. M.V. Ingawale

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal

Dr. G. J. Fagare

Kisan Veer Mahavidyalaya

Wai

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



## **CERTIFICATE**

This is a certificate that Mrs. Mangesh Suresh Kadam B. Sc II class has completed the report of fieldwork on Nursery Management of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

Shivaji university Kolhapur

External examiner

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

This is a certificate that Mr. Rohit Shravan Shelar B. Sc II class has completed the report of fieldwork on Environmental Policy In India of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023- 2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

John John John John Golden Golden Golden John

Environmental studies

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

External examiner

Shivaji university Kolhapur

## KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Of **B.Sc. II** Mrs. **Sandesh Raju Mahangade** has completed the report of the field work on

"E-Waste and it's impact on Environment" of Environmental

Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAWALE During the year 2023-2024 as prescribed by the

Shivaji University, Kolhapur.

Supervisor

Mrs. Dr. M.V.INGAWALE

Coloradhator

Mrs. Dr. M.V.INGAWALE

Principal

Pro.Dr. G.J.Fagare

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Kisan Veer Mahavidyalaya Wai

## KISAN VEER MAHAVIDYALAY, WAI

## CERTIFICATE

This is to certify that, Amisha Parmeshwar Dixt, Mrunalini Jitendra Ithape, Priyanka Jalindra Dhamal, Sanika Rajendra Jadhav of B.Sc. - II Class has completed the report of the fieldwork on "Krishna River Water Pollution" of Environmental Science subject satisfactory under the guidance of Prof.Ingawale Miss during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor Prof. Ingawale Miss

Coordinator
Dr. M.V. Ingawale
Coordinator

Environmental Studies Kisari Veer Mahavidyalaya Wai, Dist. Satara Jagor .

Principle KisanVeer Mahavidyalaya, Wai

## KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Of B.sc II Miss Sakshi Sachin Jadhav has completed the report of the field work on "Disaster Management " of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAWALE. During the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Mrs. Dr. M.V.INGAWALE

Mrs. Dr. M.V.INGAWALE

Coordinator **Environmental Studies** Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Pro.Dr. G.J.Fagare

Kisan Veer Mahavidyalaya Wai

#### **CERTIFICATE**

This is a certificate that Mr. Nikhil Dattatray Pawar B. Sc II class has completed the report of fieldwork on "Swacch Bharat Abhiyan" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

External examiner

Shivaji university Kolhapur

Dr. Mrs. M. V. Ingawale

coordinator

Environmental studies Coordinator

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

## Project Guide Name: - Dr. Manjusha Ingawale

## JANATA SHIKSHAN SANTSHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

Date: 08/03/2029

This is to certify that **Miss. Shruti Krushandev Tarate** a student of B.Sc II year has successfully completed the project on the topic **"Soil Pollution"** under the guidance of **Dr. Manjusha Ingawale** during the year 2023-2024 in partial fulfillment of Environment Subject.

Supervisor

3

3

3

3

3

Coordinate or Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara, Principal KisanVeer Mahavidyalaya, Wai

# Project Guide Name:- Dr. Manjusha Ingawale JANATA SHIKSHAN SANTSHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

Date: /

This is to certify that **Mr. Sadashiv Dnyaneshwar Chaudhary** a student of B.Sc II year has successfully completed the project on the topic "**Soil Pollution**" under the guidance of **Dr. Manjusha Ingawale** during the year 2023-2024 in partial fulfillment of Environment Subject.

Sapton Con

3 3

3

3

3

3

-

3

3

Supervisor

Coordinat

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara. Principal

KisanVeer Mahavidyalaya, Wai

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

This is a certificate that Miss. Bhilare Sanika Dattatray B. Sc II class has completed the report of fieldwork on Finger millets: A valued cereal of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023- 2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

Environmental studies

External examiner

Shivaji university Kolhapur

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Environmental Studies Kisan Veer Mahavidyalaya

Wai, Dist. Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

## JANTA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA

WAI Dist-Satara



This is to certify that,

Miss .Ram Ranikumari Sarojkumar of

B.Sc.-II Class,has completed the report of the field work on the 'study of

'Report on Medicinal Plants'

Environmental Science subject satisfactorily, under the guidance of **Mrs. Dr.M.V.Ingawale** during the year 2023-24.as prescribed by the Shivaji University, Kolhapur.

Supervisor

Principal.

Mrs. Dr.M.V.Ingawale

Prof.Dr.G.J.Fagare

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



## CERTIFICATE

#### **Environment of Studies**

This is to certify that Mr. Kadam Prathamesh Dadasaheb Of B.Sc. II has completed the report of the field work on "Environmental Disaster" of Environmental Science subject satisfactory under the guidance of Dr. Mrs. M. V. INGAWALE during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor

1 3

3

3

3

3 3

9

3

3

3 3

--

-

-

1

13

0

-3 Dr. Mrs. M. V. INGAWALE

Prof. Dr.

Mrs. M.V.INGAWALE Coordinator **Environmental Studies** Kisan Veer Mahavidyalaya Wai, Dist. Satara,

Dr. G.J. Phagare

**Principal** 

Kisan Veer Mahavidyalaya Wai

This is a certificate that Mr. Adinath Suresh Bandal B. Sc II class has completed the report of fieldwork on "Green revolution in India" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023- 2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

Coordinator
Environmental studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

External examiner

Shivaji university Kolhapur

## CERTIFICATE OF THE SUPERVISOR





This is to certificate that *Nikam Aryan Jyotikant* Of B.Sc. 2<sup>nd</sup> Class has completed the report of the fieldwork on "*ONLINE VOTING SYSTEM*" of the Chemistry subject satisfactory under the guidance of Dr. Mrs. M.V.Ingawale Taking during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Supervisor

Dr. Mrs. M.V.Ingawale

Co-ordinator
Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Dr.G.J.Fagare

K.V.M Collage Wai, Principle

This is a certificate that **Mr. Shantanu Sanjay Pawar** B. Sc II class has completed the report of fieldwork on "Biological control and it's important in Agriculture" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

ccoordinator

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

External examiner

Shivaji university Kolhapur

Principal

Dr. G. J. Fagare

## KISAN VEER MAHAVIDYALAY, WAI

#### CERTIFICATE

This is to certify that, Amisha Parmeshwar Dixt, Mrunalini Jitendra Ithape, Priyanka Jalindra Dhamal, Sanika Rajendra Jadhav of B.Sc. - II Class has completed the report of the River Water Pollution" fieldwork on "Krishna Science subject satisfactory under the Environmental guidance of Prof.Ingawale Miss during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor

Prof. Ingawale Miss

Coordinatator Eprindentagatudles Kisan Veer Mahavidyalaya Wai, Dist. Satara.

KisanVeer Mahavidyalaya, Wai

This is a certificate that **Mr. Om Sandip Pawar** B. Sc II class has completed the report of fieldwork on "Protected cultivation in vegetable crops" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

3

000000000

7

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

Environmental Studies Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal

Dr. G. J. Fagare

Kisan veer mahavidyalaya, wai

External examiner

Shivaji university Kolhapur

## CERTIFICATE OF THE SUPERVISOR



-



This is to certificate that *Mr. Barge Mayur Keshav* Of B.Sc. 2<sup>nd</sup> Class has completed the report of the fieldwork on *"The Study of Selected Dam & It's Environmental Impact"* of the subject satisfactory under the guidance of Dr. Mrs. M.V.Ingawale Taking during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Supervisor

Dr. Mrs. M.V.Ingawale

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara,

Dr.G.J.Fagare

K.V.M Collage Wai, Principle

This is a certificate that **Mr. Om Sandip Pawar** B. Sc II class has completed the report of fieldwork on "Protected cultivation in vegetable crops" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

**Supervisor** 

3

-3

3

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

External examiner

Shivaji university Kolhapur

Principal

Dr. G. J. Fagare

This is a certificate that **Mr. Om Sandip Pawar** B. Sc II class has completed the report of fieldwork on "Protected cultivation in vegetable crops" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator Coordinator Environmental Studies

Kisan Veer Mahavidyalaya Wai, Dist. Satara.

External examiner

Shivaji university Kolhapur

Principal

Dr. G. J. Fagare

## CERTIFICATE OF THE SUPERVISOR





This is to certificate that *Mr. Khare Swapnil Sandip* Of B.Sc. 2<sup>nd</sup> Class has completed the report of the fieldwork on *"The Study of Selected Dam & It's Environmental Impact"* of the subject satisfactory under the guidance of Dr. Mrs. M.V.Ingawale Taking during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Supervisor

Dr. Mrs. M.V.Ingawale

Conditiator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Dr.G.J.Fagare

K.V.M Collage Wai, Principle

This is a certificate that **Mr. Shantanu Sanjay Pawar** B. Sc II class has completed the report of fieldwork on "Biological control and it's important in Agriculture" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator,

Environmental Studies Environmental studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

External examiner

Shivaji university Kolhapur

Principal

Dr. G. J. Fagare

This is a certificate that Mr. Adinath Suresh Bandal B. Sc II class has completed the report of fieldwork on "Green revolution in India" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023- 2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

Coordinator
Environmental Studies

Kisan Veer Mahavidyalaya Wai, Dist. Satara.

External examiner

Shivaji university Kolhapur

Dr. . G. J. Fagare

This is a certificate that Mr. Adinath Suresh Bandal B. Sc II class has completed the report of fieldwork on "Green revolution in India" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023- 2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

ceordinator

Environmental Studies Kisan Veer Manavidyalaya Wai, Dist. Satara.

External examiner

Shivaji university Kolhapur

Principal

Dr. . G. J. Fagare

## Project Guide Name: - Dr. Manjusha Ingawale

## JANATA SHIKSHAN SANTSHA'S





#### **CERTIFICATE**

Date: 2 / 3 / 2024

This is to certify that **Miss. Mayuri Dhananjay Biramane** a student of B.Sc II year has successfully completed the project on the topic **"Soil Pollution"** under the guidance of **Dr. Manjusha Ingawale** during the year 2023-2024 in partial fulfillment of Environment Subject.

Supervisor

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara. Principal

KisanVeer Mahavidyalaya, Wai

## CERTIFICATE OF THE SUPERVISOR





This is to certificate that *Mr. Kamble Aditya Rajesh* Of B.Sc. 2<sup>nd</sup> Class has completed the report of the fieldwork on *"The Study of Selected Dam & It's Environmental Impact"* of the subject satisfactory under the guidance of Dr. Mrs. M.V.Ingawale Taking during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Supervisor

Dr. Mrs. W.V.Ingawale

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara,

Dr.G.J.Fagare

K.V.M Collage Wai, Principle

#### Project Guide Name: - Dr. Manjusha Ingawale

## JANATA SHIKSHAN SANTSHA'S

#### KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

Date: 08/03/2024

This is to certify that Miss. Tanuja Dattatray Pisal a student of B.Sc II year has successfully completed the project on the topic "Soil Pollution" under the guidance of Dr. Manjusha Ingawale during the year 2023-2024 in partial fulfillment of Environment Subject.

Supervisor

200000000

Goordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal KisanVeer Mahavidyalaya, Wai

## CERTIFICATE OF THE SUPERVISOR





This is to certificate that **Mr.** *Jadhav Shubham Laxman* Of B.Sc. 2<sup>nd</sup> Class has completed the report of the fieldwork on "*The Study of Selected Dam & It's Environmental Impact*" of the subject satisfactory under the guidance of Dr. Mrs. M.V.Ingawale Taking during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Supervisor

Dr. Mrs. M.V.Ingawale

Co-craminator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Dr.G.J.Fagare

K.V.M Collage Wai, Principle

## CERTIFICATE OF THE SUPERVISOR





This is to certificate that *Mr. Ithape Viraj Ravindra* Of B.Sc. 2<sup>nd</sup> Class has completed the report of the fieldwork on *"The Study of Selected Dam & It's Environmental Impact"* of the subject satisfactory under the guidance of Dr. Mrs. M.V.Ingawale Taking during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Dr. Mrs. M.V.Ingawale

Supervisor

Goodfiatafor Environmental Studies Kisan Veer Mahavidyalaya

Wai, Dist. Satara.

9

K.V.M Collage Wai, Principle

This is a certificate that **Mr. Shantanu Sanjay Pawar** B. Sc II class has completed the report of fieldwork on "Biological control and it's important in Agriculture" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

Environmential Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

External examiner

Shivaji university Kolhapur

Principal

Dr. G. J. Fagare

This is a certificate that Mr. Om Sandip Pawar B. Sc II class has completed the report of fieldwork on "Protected cultivation in vegetable crops" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

**Supervisor** 

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

External examiner

Shivaji university Kolhapur

Principal

Dr. G. J. Fagare

#### JANATA SHIKSHAN SANSTHA'S

## KISAN VEER MAHAVDYALAYA, WAI



#### **CERTIFICATE**

This is to certify that **Mr. Wadkar Pranav Ajit** of B.S.C. II Class has completed the report of the field work on "**Garbage Management**" of the Environment subject satisfactory under the guidance of **Dr. Mrs M.V. Ingawale** during the year 2023-24 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs M.V. Ingawale Supervisor

**Environmental Studies** 

Dr. Mrs M.V. Ingawale

Co-ordinator

**Environmental Studies** 

Coordinator Environmental Studies

External Examinar

Shivaji University, Kolhapur

Principle

Dr. G. J. Fagare

Kisan Veer Mahavidyalaya, Wai

#### JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

This is a certificate that Miss. Bhilare Sanika Dattatray B. Sc II class has completed the report of fieldwork on Finger millets: A valued cereal of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023- 2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Coordinator Environmental Studies Kisan Veer Mahavidyalaya

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

External examiner

Shivaji university Kolhapur

# JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI

#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Miss. Sanika Bhanudas Yadav Of B.sc. II has completed the report of the field work on "Endangered and endemic animal Species in India" of Environmental Science subject satisfactory under the guidance of Prof.Dr.Mrs.M.V.INGAWALE during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Prof.Dr. Mrs.M.V.INGAWALE

Co-Ordinator

Prof. Dr Mrs.M.V.NGAWALE

Coordinator

Environmental Studies Kisan Veer Mahavidyalaya

Wai, Dist. Satara.

Principal

Prof. Dr . G .J. Fagare

Kisan Veer Mahavidyalaya Waj

#### JANATA SHIKSHAN SANSTHA'S

### KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Of **B.Sc. II** Mr. **Dalvi Sanket Mohan** has completed the report of the field work on "Water Conservation" of Environmental Science subject satisfactory under the guidance of **Prof.Dr. Mrs**. **M.V.Ingawale** During the year **2023-2024** as prescribed by the Shivaji University, Kolhapur.



Prof.Dr. Mrs . M.V.Ingawale

Co-Ordinator

Prof.Dr. Mrs . M.V.Ingawale
Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal Prof.Dr.G.J.Fagare

Kisan Veer Mahavidyalaya Wai

### JANATA SHIKSHAN SANSTHA'S

## KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Of **B.Sc. II** Miss.**Jadhav Apeksha Manohar** has completed the report of the field work on "Water Conservation" of Environmental Science subject satisfactory under the guidance of **Prof.Dr. Mrs**. **M.V.Ingawale** During the year 2023-2024 as prescribed by the Shiyaji University, Kolhapur.

Supervisor

Prof.Dr. Mrs . M.V.Ingawale

Co-Ordinator

Prof.Dr. Mrs. M.V.Ingawale
Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal Prof.Dr.G.J.Fagare

Kisan Veer Mahavidyalaya Wai

## JANATA SHIKSHAN SANSTHA`S KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

This is to certify that Miss. Payal dnyaneshwar Kadam

Of B.Sc II has completed the report of the field work on "Noise Pollution"

of the Environment subject satisfactory under the guidance of

Mrs.Dr.M.V.Ingawale madam duringthe year 2023-2024 as prescribed

by the Shivaji University, Kolhapur.

Pro Mrs. or.M.V.Ingawale

Supervisor

**Environmental Studies** 

External Examiner

Shivaji University, Kolhapur

yas M. V. Inga

Dr. Mrs. M. V. Ingavale

Co- ordinator

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist Satara.

Principal

Dr. G. J. Fagare

## JANATA SHIKSHAN SANSTHA`S KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

This is to certify that Miss. Sanika vijay Jagtap

Of B.Sc II has completed the report of the field work on "Noise Pollution"

of the Environment subject satisfactory under the guidance of

Mrs.Dr.M.V.Ingawale madam duringthe year 2023-2024 as prescribed

by the Shivaji University, Kolhapur.

Pro Mrs. Dr.M.V.Ingawale

Supervisor

**Environmental Studies** 

External Examiner

Shivaji University, Kolhapur

Dr. Mrs. M. V. Ingavale

Co- ordinator

Environmental Studies
Invironmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal

Dr. G. J. Fagare

## Project Guide Name: - Dr. Manjusha Ingawale

## JANATA SHIKSHAN SANTSHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

Date: 68 / 03 / 24

This is to certify that Mr. Vinay Vijay Tarate a student of B.Sc II year has successfully completed the project on the topic "Soil Pollution" under the guidance of Dr. Manjusha Ingawale during the year 2023-2024 in partial fulfillment of Environment Subject.

Supervisor

3

3

0000

9

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal

KisanVeer Mahavidyalaya, Wai

## CERTIFICATE OF THE UPERVISOR





This is to certificate that *Shelar Sahil Sampat* Of B.Sc. 2<sup>nd</sup> Class has completed the report of the fieldwork on *"ONLINE VOTING SYSTEM"* of the Chemistry subject satisfactory under the guidance of Dr. Mrs. M.V.Ingawale Taking during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Supervisor

Dr. Mrs. M.V.Ingawale

Co-ordinator

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

K.V.M Collage Wai, Principle

Dr.G.J.Fagare

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

#### **Environment of Studies**

This is to certify that Miss. Akhade Komal Kondiram Of B.SC. II 'B' Group has completed the report of the field work on  ${\bf Biofertilizer}$  of Environmental Science subject satisfactory under the guidance of Dr.Miss.M.V. Ingawale during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor Dr.Mrs. M.V. Ingawale

Dr.Mrs. M.V. Ingawale

Principal

Kisan Veer Mahavidyalaya

Dr. G. J. Fagare

Coordinator **Environmental Studies** Kisan Veer Mahavidyalaya Wai, Dist. Satera.

Co-Ordinator

Wai

#### JANATA SHIKSHAN SANSTHA'S

### KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Of **B.sc II** Miss **Anuradha krushnat Chavan** has completed the report of the field work on "**Disaster Management** " of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAWALE. During the year **2023-2024** as prescribed by the Shivaji University, Kolhapur.

Mrs. Dr. W.V.INGAWALE

Mrs. Dr. M.V.INGAWALE
Coordinator
Environmental Studie

Environmental Studies Kisan Veer Mahavidyalaya Wal, Dist. Satara.

Principal Pro.Dr. G.J.Fagare

Kisan Veer Mahavidyalaya Wai

#### JANATA SHIKSHAN SANSTHA'S

### KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Of **B.sc II** Miss **Ishwari Jeetendra Jagtap** has completed the report of the field work on "**Disaster Management** " of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAWALE. During the year **2023-2024** as prescribed by the Shivaji University, Kolhapur.

Superior Mrs. Dr. M.V.INGAWALE

Co Sodinator

Mrs. Dr. M.V.INGAWALE

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal Pro.Dr. G.J.Fagare

Kisan Veer Mahavidyalaya Wai

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVDYALAYA, WAI



### CERTIFICATE

This is to certify that **Mr.** Kasurde Mayur Parshuram of B.S.C. II Class has completed the report of the field work on "Garbage Management" of the Environment subject satisfactory under the guidance of **Dr.** Mrs M.V. Ingawale during the year 2023-24 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs M.V. Ingawale Supervisor Environmental Studies

External Examinar Shivaji University, Kolhapur Dr. Mrs M.V. Ingawale

Co-ordinator

**Environmental Studies** 

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara

Principle Dr. G. J. Fagare

Kisan Veer Mahavidyalaya, Wai

#### JANATA SHIKSHAN SANSTHA'S

## KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Of B.sc II Miss Sanchita Vikas More has completed the report of the field work on "Disaster Management " of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAWALE. During the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor

Mrs. Dr. MWINGAWALE

Mrs. Dr. M Coordinator

Environmental Studies Kisan Veer Mahavidyataya Wai, Dist. Satara.

Principal

Pro.Dr. G.J.Fagare

Kisan Veer Mahavidyalaya Wai

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Miss.Sanas Vishakha Pandurang,Miss.Gaikwad Akanksha Hanmant, Miss. Wagh Akanksha Rajendra, Miss. Akhade Komal Kondiram Of B.SC. II 'B' Group has completed the report of the field work on **Biofertilizer** of Environmental Science subject satisfactory under the guidance of Dr.Miss.M.V. Ingawale during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor Dr.Mrs. M.V. Ingawale

eg or

Principal

Dr. G. J. Fagare

Kisan Veer Mahavidyalaya

Wai

Co-Ordinator
Mrs. M.V. Ingawale

Dr.Mrs. M.V. Ingawale

Environmental Studies Kisan Veer Mahavidyalaya Wal, Dist. Satara.

## KISAN VEER MAHAVDYALAYA, WAI



## **CERTIFICATE**

This is to certify that **Mr. Thorave Raj Vijay** of B.S.C. II Class has completed the report of the field work on "**Garbage Management**" of the Environment subject satisfactory under the guidance of **Dr. Mrs M.V. Ingawale** during the year 2023-24 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs M.V. Ingawale
Supervisor
Environmental Studies

Co-ordinator Environmental Studies

Dr. Mrs M.V. Ingawale

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principle Dr. G. J. Fagare

Kisan Veer Mahavidyalaya, Wai

External Examinar

Shivaji University, Kolhapur

## JANATA SHIKSHAN SANSTHA`S KISAN VEER MAHAVIDYALAYA, WAI



## **CERTIFICATE**

This is to certify that Miss. Shraddha Sachin Kalokhe

Of B.Sc II has completed the report of the field work on "Noise Pollution"

of the Environment subject satisfactory under the guidance of

Mrs.Dr.M.V.Ingawale madam duringthe year 2023-2024 as prescribed

by the Shivaji University, Kolhapur.

Pro Mrs. Pr.M.V.Ingawale

Supervisor

**Environmental Studies** 

External Examiner

Shivaji University, Kolhapur

Dr. Mrs. M. V. Ingavale

Co- ordinator

Environmental Studies
Kisan Veer Mahavidyalaya
Wai Dist. Satara.

Principal

Dr. G. J. Fagare

Kisan veer Mahavidyalaya, wai

#### **CERTIFICATE**

This is a certificate that Mr. Adinath Suresh Bandal B. Sc II class has completed the report of fieldwork on "Green revolution in India" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023- 2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Coordinator Environmental Studior Kisan Veer Mahavidya..., Wai, Dist. Satara

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

Shivaji university Kolhapur

## KISAN VEER MAHAVDYALAYA, WAI



## **CERTIFICATE**

This is to certify that **Mr.** Chikane Omkar Sanjay of B.Sc. III Class has completed the report of the field work on "Secure Environment " of the Environment subject satisfactory under the guidance of Dr. Mrs M.V. Ingavale during the year 2023-24 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs M.V. Ingavale Supervisor

3

-

2

7

-

-

7

1

7 9

3

3

9

**Environmental Studies** 

External Examinar Shivaji University, Kolhapur Dr. Mrs M.V. Ingavale Co-ordinator

**Environmental Studies** 

Coordinator Environmental Studies Kisan Veer Mahavidyalaya

Principle

Dr. G. J. Fagare

## JANATA SHIKSHAN SANSTHA`S KISAN VEER MAHAVIDYALAYA, WAI



## **CERTIFICATE**

This is to certify that Miss. Aditi kamalakar Kalokhe

Of B.Sc II has completed the report of the field work on "Noise Pollution"

of the Environment subject satisfactory under the guidance of

Mrs.Dr.M.V.Ingawale madam duringthe year 2027-2028 as prescribed

by the Shivaji University, Kolhapur.

Pro Mrs. Dr.M.V.Ingawale

Supervisor

**Environmental Studies** 

External Examiner

Shivaji University, Kolhapur

Dr. Mrs. M. V. Ingavale

Co- ordinator

Environmental Studies Environmental Studies Kisan Veer Mahavidyalaya Wai Dist. Satara.

Dr. G. J. Fagare

Kisan veer Mahavidyalaya, wai

JantaShikshanSanstha's

## Kisan Veer MahavidyalayaWai



## CERTIFICATE

This is to certify that, *Anjali Vitthal koli* of **B.Sc.** II class has completed the report of the fieldwork on "*Climate Change*" of Environmental Science Subject Satisfactory under the guidance of **Dr. Mrs. M.V.Ingawale** during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Dr. Mrs. M.V.Ingawale

Supervisior

**Co-ordinator** 

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara

Dr.G.J.Fagare

K.V.M Collage Wai, Principle

## KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

#### **Environment of Studies**

This is to certify that Of B.sc II Miss Sonal Jitendra Mahamuni has completed the report of the field work on "Disaster Management" of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAWALE. During the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Mrs. Dr. M.V.INGAWALE

Mrs. Dr. M.V.INGAWALE

Coordinator Environmental Studies Kisan Veer Mahavidya. ,a Wai, Dist. Satara,

Principal

Pro.Dr. G.J.Fagare

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

This is a certificate that Miss. Sneha Sunil Bhilare B. Sc II class has completed the report of fieldwork on Rajgira: A Valued Cereal of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Coordinator **Environmental Studies** Kisan Veer Mahavidyalaya

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

Shivaji university Kolhapur

External examiner

## JANTA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA

WAI

Dist-Satara



This is to certify that, Miss. Neha Kiran Waghmare,
Miss. Nikita Kiran Waghmare, Miss. Utkarsha Sanjiv Chavan,
Miss.Rucha Santosh Deshmukh, Miss. Snehal Hindurao kale. Of
B.Sc II Class, has completed the report of the field work
on the 'study of

'Medical Waste And Management'

Environmental Science subject satisfactorily, under the guidance of Miss .D.A.Chodhari during the year 2023-23 as prescribed by the Shivaji University, Kolhapur.

Supervisor

Principal.

Mrs. Dr.M.V.Ingawale

Environmental Studies

Kisan Veer Mahavidyalaya

Wai, Dist. Satara.

Prof.Dr.G.J.Fagare

# JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDHYALAYA, WAI.



#### CERTIFICATE

This is to certify that Mr. Yewale Ganesh Rajendra of B.Sc. II class has successfully completed the report of fieldwork on "Green House Effect" of the environment science subject satisfactory under the guidance of Dr. Mrs. M. V. Ingawale during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental Studies** 

External Examiner

Shivaji University, Kolhapur

Dr. Mrs. M. V. Ingavale

ce-ordinator

Environmental Studies

Wai, Dist. Satara.

Principal

Dr. G. J. Fagare

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA,WAI



## CERTIFICATE

## **Environment of Studies**

This is to certify that Mr. Shinde Abhay Dhananjay Of B.Sc. II has completed the report of the field work on "Environmental Disaster" of Environmental Science subject satisfactory under the guidance of Dr. Mrs. M. V. INGAWALE during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor

3

0

0

-

9 9

9

Dr. Mrs. M. V. INGAWALE

Co-Ordinator

Prof. Dr.

Mrs. M.V.INGAWALE Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Dr. G.J. Phagare Principal

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

This is a certificate that Miss. Sneha Sunil Bhilare B. Sc II class has completed the report of fieldwork on Rajgira: A Valued Cereal of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

22220000

9

3 3

3

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator **Environmental studies** 

Coordinator **Environmental Studies** Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

External examiner

Shivaji university Kolhapur

## KISAN VEER MAHAVIDYALAYA, WAI



## CERTIFICATE

### **Environment of Studies**

This is to certify that Of **B.Sc. II** Mrs. **Avishkar Anil Yadav** has completed the report of the field work on

"E-Waste and it's impact on Environment" of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAWALE During the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor

7 3 3

3

-

3

-

3

3

-

7

7

666666666

Mrs. Dr. M.V.INGAWALE

Mrs. Dr. M.V.INGAWALE

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara,

Principal Pro.Dr. G.J.Fagare

## KISAN VEER MAHAVIDYALAYA, WAI



## CERTIFICATE

## **Environment of Studies**

This is to certify that Of **B.Sc. II** Mrs. **Atharv Rajendra Mandhare** has completed the report of the field work on

"E-Waste and it's impact on Environment" of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAWALE During the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor

Mrs. Dr. M.V.INGAWALE

Mrs. Dr. W.V.INGAWALE

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal Pro.Dr. G.J.Fagare

## KISAN VEER MAHAVIDYALAYA, WAI



## CERTIFICATE

### **Environment of Studies**

This is to certify that Of **B.Sc. II** Miss **Dhole Shubhangi Tukaram** has completed the report of the field work on 
"Biodiversity in kas Pathar" of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAVALE

During the year 2023-2024 as prescribed by the Shivaji University,

Kolhapur.

Mrs. Dr. M.V.INGAVAL

o-Ordinator

Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal G.J.Fagare

## KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

#### **Environment of Studies**

This is to certify that Of **B.Sc. II** Mr. **Wadkar Omkar Ashok** has completed the report of the field work on "Water Conservation" of Environmental Science subject satisfactory under the guidance of **Prof.Dr. Mrs** . **M.V.Ingawale** During the year **2023-2024** as prescribed by the Shivaji University, Kolhapur.

Supervisor

Prof.Dr. Mrs . M.V.Ingawale

Co-Ordinator

Prof.Dr. Mrs . M.V.Ingawale

Coordinator

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal

Prof.Dr.G.J.Fagare

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

This is a certificate that Mr. Tushar Mahadev Kamble B. Sc II class has completed the report of fieldwork on Sericulture of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023- 2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

9

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Coordinator
Environmental Studies
Kisan Vest Lavidyalaya
Wai La Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

External examiner

Shivaji university Kolhapur

#### CERTIFICATE

This is a certificate that **Mr. Shantanu Sanjay Pawar** B. Sc II class has completed the report of fieldwork on "Biological control and it's important in Agriculture" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

Environmental Studies Environmental studies Isan Veer Maria vilyalesya Wai, Dist. Satara.

External examiner

Shivaji university Kolhapur

Principal

Dr. G. J. Fagare

Kisan veer mahavidyalaya, wai

## CERTIFICATE OF THE SUPERVISOR





This is to certificate that *Mr. Jadhav Saurav Santosh* Of B.Sc. 2<sup>nd</sup> Class has completed the report of the fieldwork on "ONLINE VOTING SYSTEM" of the Chemistry subject satisfactory under the guidance of Dr. Mrs. M.V.Ingawale Taking during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V.Ingawale

Supervisor

Dr. Mrs. M.V.ingawale

Co-ordinator

Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Dr.G.J.Fagare

K.V.M Collage Wai, Principle

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI

## CERTIFICATE

#### **Environment of Studies**

This is to certify that Miss. Tanishka Sanjay Shinde Of B.sc. II has completed the report of the field work on "Endangered and endemic animal Species in India" of Environmental Science subject satisfactory under the guidance of Prof.Dr.Mrs.M.V.INGAWALE during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor Prof.Dr. Mrs.M.V.INGAWALE

Co-Ordinator

Prof. Dr Mrs.M.V.NGAWALE

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara,

Principal

Principal Prof. Dr . G .J. Fagare

## KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

#### **Environment of Studies**

This is to certify that Of B.Sc. II Miss Chavan Snehal Suresh has completed the report of the field work on "Water Conservation" of Environmental Science subject satisfactory under the guidance of Prof.Dr. Mrs . M.V.Ingawale During the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.



Prof.Dr. Mrs . M.V.Ingawale

Co-Ordinator

Prof.Dr. Mrs . M.V.Ingawale

Coordinator **Environmental Studies** Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal Prof.Dr.G.J.Fagare

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI

## CERTIFICATE

## **Environment of Studies**

This is to certify that Miss. Shweta Santosh Dhanawade B.sc. II has completed the report of the field work on 66 Endangered and endemic animal Species in Environmental Science subject satisfactory under the guidance of Prof.Dr.Mrs.M.V.INGAWALE during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Prof.Dr. Mrs.M.V.INGAWALE

Prof. Dr Mrs.M.V.NGAWALE Coordinator

**Environmental Studies** Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal Prof. Dr. G.J. Fagare

## JANTA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA

WAI Dist-Satara



This is to certify that, Miss.Utkarsha Sanjiv Chavan, of

B.Sc II Class, has completed the report of the field work on the 'study of

'Medical Waste And Management'

Environmental Science subject satisfactorily, under the guidance of Miss .D.A.Chodhari during the year 2023-24 as prescribed by the Shivaji University, Kolhapur.

Supervisor

Mrs. Dr.M.V.Ingawale

Coordinator
Environmental Studies
Kisan Veer Mahavidyelaya
Wai, Dist. Satara.

Principal.

Prof .Dr.G.J.Fagare



JANATA SHIKSHAN SANSTHA'S

KISANV VEER

MAHAVIDYALAYA, WAI

CERTIFICATE

Environment Of Studies

This is to certify that, Miss Pharande Shraddha Dattatraya of B.Com—II class has completed the report of the fieldwork on "Forest Ecosystem In Panchagani" of Environmental Science Subject Satisfactory under the guidance of Prof. DR. Mrs. M.V. Ingawale during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M.V. Ingawale

Supervisor

Prof. DR. Woodhato Ingawale

Efticanneibate/Studies

Kisan Veer Mahavidyalaya

Wai, Dist. Satara.

Dr. G.J.Fagare

K.V.M. Collage Wai

Principle

## JANTA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA

WAI Dist-Satara



This is to certify that, Miss.Rucha Santosh Deshmukh of

B.Sc II Class, has completed the report of the field work on the 'study of

## 'Medical Waste And Management'

Environmental Science subject satisfactorily, under the guidance of Miss .D.A.Chodhari during the year 2023-24.as prescribed by the Shivaji University, Kolhapur.

Supervisor

Mrs. Dr.M.V.Ingawale

Prof .Dr.G.J.Fagare

Principal.

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara,

## JANTA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA

WAI Dist-Satara



This is to certify that, Miss. Nikita Kiran Waghmare of

B.Sc II Class, has completed the report of the field work on the 'study of

'Medical Waste And Management'

Environmental Science subject satisfactorily, under the guidance of Miss .D.A.Chodhari during the year 2023-22 as prescribed by the Shivaji University, Kolhapur.

Supervisor

Mrs. Dr.M.V.Ingawale

**Environmental Studies** Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Prof .Dr.G.J.Fagare

Principal.

### CERTIFICATE

This is a certificate that Mr. Sahil Promod Mahadik B. Sc II class has completed the report of fieldwork on "Plant Growth Regulators" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

**Supervisor** 

3

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Environmental Studies Kisan Voer Mahavidyalaya Wal Dist Saus:

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

Shivaji university Kolhapur

External examiner

## KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

## **Environment of Studies**

This is to certify that Of **B.Sc. II** Mrs. **Anuraj Babasaheb Yadav** has completed the report of the field work on

"E-Waste and it's impact on Environment" of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAWALE During the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor Sol

Mrs. Dr. M.V.INGAWALE

Co-Ordinator

Mrs. Dr. M.V.INGAWALE

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara

Principal

Pro.Dr. G.J.Fagare

## KISAN VEER MAHAVIDYALAYA, WAI



#### CERTIFICATE

## **Environment of Studies**

This is to certify that Of **B.Sc. II** Mrs. **Atharv Mahesh Panse** has completed the report of the field work on

"E-Waste and it's impact on Environment" of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAWALE During the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Superviso

9

)

Mrs. Dr. M.V.INGAWALE

Co-Ordinator

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal

Pro.Dr. G.J.Fagare

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



#### **CERTIFICATE**

This is a certificate that Mr. Rohit Shravan Shelar B. Sc II class has completed the report of fieldwork on Environmental Policy In India of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

oordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

External examiner

Shivaji university Kolhapur

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA, WAI



## **CERTIFICATE**

This is a certificate that **Mr. Rohit Shravan Shelar** B. Sc II class has completed the report of fieldwork on **Environmental Policy In India** of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

いいいい きゅう りゅう りゅう りゅう ちゅう ちゅう ちゅう

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

Shivaji university Kolhapur

External examiner

## JANTA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA

WAI Dist-Satara



This is to certify that, Miss.Tejaswi Ajit Hagavane of B.Sc.-II Class,has completed the report of the field work on the 'study of 'ORGANIC FARMING' Environmental Science subject satisfactorily, under the guidance of Mrs. Dr.M.V.Ingavale during the year 2023-24.as prescribed by the Shivaji University, Kolhapur.

Supervisor

Mrs. Dr.M.V.Ingawale

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal.

Prof.Dr.G.J.Fagare

## JANTA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA

WAI Dist-Satara



This is to certify that, Miss.Chetana Ashok Sawant of B.Sc.-II Class,has completed the report of the field work on the 'study of 'ORGANIC FARMING' Environmental Science subject satisfactorily, under the guidance of Mrs. Dr.M.V.Ingavale during the year 2023-24.as prescribed by the Shivaji University, Kolhapur.

Mrs. Dr.M.V.Ingawale

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Principal.

Prof .Dr.G.J.Fagare

# JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDHYALAYA, WAI.



## **CERTIFICATE**

This is to certify that Mr. Bhosale Vedant Suresh of B.Sc. II class has successfully completed the report of fieldwork on "Green House Effect" of the environment science subject satisfactory under the guidance of Dr. Mrs. M. V. Ingawale during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental Studies** 

External Examiner

Shivaji University, Kolhapur

Dr. Mrs. M. V. Ingavale

co-ordinator Coordinator Finvironmental Studies Kisan Veer Manavidyalaya Wai\_Dist. Satara.

Principal

Dr. G. J. Fagare

#### CERTIFICATE

This is a certificate that Mr. Parth Deepak Darekar B. Sc II class has completed the report of fieldwork on "Plant Growth Regulators" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

3

3

3

3

3

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

coordinator

**Environmental studies** 

Coordinator Environmental Studies Kisan Veer Mahevidyoraya

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

Shivaji university Kolhapur

# JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDHYALAYA, WAI.



#### **CERTIFICATE**

This is to certify that Mr. Shelar Tejas Sudhir of B.Sc. II class has successfully completed the report of fieldwork on "Green House Effect" of the environment science subject satisfactory under the guidance of Dr. Mrs. M. V. Ingawale during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental Studies** 

External Examiner

Shivaji University, Kolhapur

Dr. Mrs. M. V. Ingavale

co-ordinator Coordinator Environmental Stuckies Kisan Veer Mahavidyalaya

Principal

Dr. G. J. Fagare

## JANATA SHIKSHAN SANSTHA'S

## KISAN VEER MAHAVIDYALAYA, WAI



## CERTIFICATE

## **Environment of Studies**

This is to certify that Of **B.Sc. II** Miss **Khutekar Vaishanavi Bhagwan** has completed the report of the field work on "Biodiversity in kas Pathar" of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAVALE

During the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Mrs. D. M.V.INGAVAL

Mrs. **Goordinatos** AVALE Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal G.J.Fagare

Kisan Veer Mahavidyalaya Wai

## JANATA SHIKSHAN SANSTHA'S

## KISAN VEER MAHAVIDYALAYA, WAI



## CERTIFICATE

## **Environment of Studies**

This is to certify that Of B.Sc. II Miss Shirke Tejasvi Manohar has completed the report of the field work on "Biodiversity in kas Pathar" of Environmental Science subject satisfactory under the guidance of Mrs. Dr. M.V.INGAVALE

During the year 2023-2024 as prescribed by the Shivaji University,

Kolhapur.

Mrs. Dr. M.V.INGAVAL

CoOrdinator

Coordinator
Mrs Environmental Studie Kisan Veer Mahavidyalaya
Wai, Dist. Salara.

Principal G.J.Fagare

Kisan Veer Mahavidyalaya Wai

## **CERTIFICATE**

This is a certificate that Mr. Nikhil Dattatray Pawar B. Sc II class has completed the report of fieldwork on "Swacch Bharat Abhiyan" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

Dr. Mrs. M. V. Ingawale

ceordinator E Evvironmental Studies

Wai, Dist. Satara.

External examiner

Shivaji university Kolhapur

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

## **CERTIFICATE**

This is a certificate that Mr. Nikhil Dattatray Pawar B. Sc II class has completed the report of fieldwork on "Swacch Bharat Abhiyan" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

**Environmental studies** 

External examiner

Shivaji university Kolhapur

Dr. Mrs. M. V. Ingawale

coordinator

Environmental studies Coordinator Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

## JANATA SHIKSHAN SANSTHA'S KISAN VEER MAHAVIDYALAYA,WAI



# **CERTIFICATE Environment of Studies**

This is to certify that Mr. Nikam Shambhuraj Rajesh Of B.Sc. II has completed the report of the field work on "Environmental Disaster" of Environmental Science subject satisfactory under the guidance of Dr. Mrs. M. V. INGAWALE during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor

9

3

3

-

-

9

9

-5

-

0

Dr. Mrs. M. V. INGAWALE

Co-Ordinator

Prof. Dr.

Mrs. M.V.INGAWALE
Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Dr . G .J. Phagare Principal

Kisan Veer Mahavidyalaya Wai

## **CERTIFICATE**

This is a certificate that Mr. Kiran Sarjerao Pawar B. Sc II class has completed the report of fieldwork on "Swacch Bharat Abhiyan" of the environment subject satisfactory under the Guidance of Dr. Mrs. M. V. Ingawale taking during the year 2023-2024 as prescribed by the Shivaji University Kolhapur.

Dr. Mrs. M. V. Ingawale

Supervisor

3

9

9

**Environmental studies** 

coordinator

Environmental studies

Dr. Mrs. M. V. Ingawale

Environmental Studies Kisan Veer Mahavidyalaya Wai, Dist. Satara.

Guyaru

Principal

Dr. . G. J. Fagare

Kisan veer mahavidyalaya, wai

Shivaji university Kolhapur

## JANATA SHIKSHAN SANSTHA'S

## KISAN VEER MAHAVIDYALAYA, WAI



### **CERTIFICATE**

## **Environment of Studies**

This is to certify that Miss. Chikane Sanika Suresh of B.Sc II Class has completed the report of the field work on "Limnological Study Of Venna Lake" of the Environment subject satisfactory under the guidance of Prof. M.V.Ingawale during the year 2023-2023 as prescribed by the Shivaji University, Kolhapur

Superviso

Prof. Dr. M.V.Ingawale

Dr. M.V.Ingawale

Principle

Coordinator Prof. Dr. G.J.Fagare Kisan Voer Mahavidyalaya



# JANATA SHIKSHAN SANSTHA`S KISAN VEER MAHAVIDHYALAYA, WAI

9

9

3

3

3

3

3

0

3



## TITLE OF PROJECT

## "BIOFERTILIZER"

## CLASS - B.SC- II 'B' GROUP

## Submitted by

Sr.No.	Name of Student	Roll No.	Exam Seat No.
1	Sanas Vishakha Pandurang	86	
2	Gaikwad Akanksha Hanmant	13	
3	Wagh Akanksha Rajendra	12	
4	Akhade Komal Kondiram	85	

## UNDER THE GUIDANCE OF

Dr. Mrs. M.V. Ingawale

Project Year-2023 - 2024

#### JANATA SHIKSHAN SANSTHA'S

## KISAN VEER MAHAVIDYALAYA, WAI



### **CERTIFICATE**

### **Environment of Studies**

This is to certify that Miss.Sanas Vishakha Pandurang,Miss.Gaikwad Akanksha Hanmant, Miss. Wagh Akanksha Rajendra, Miss. Akhade Komal Kondiram Of B.SC. II 'B' Group has completed the report of the field work on **Biofertilizer** of Environmental Science subject satisfactory under the guidance of Dr.Miss.M.V. Ingawale during the year 2023-2024 as prescribed by the Shivaji University, Kolhapur.

Supervisor Dr.Mrs. M.V. Ingawale

3

3

3

3

3

Co-Ordinator Dr.Mrs. M.V. Ingawale

Environmental Studies Kisan Veer Mahavidyalaya

Wai, Dist. Satara.

Principal Dr. G. J. Fagare

Kisan Veer Mahavidyalaya

Wai

## DECLARATION OF THE STUDENT

I hereby declare that the project work entitled "Biofertilizer" is the original work carried out by me at the department of Environmental Science of Kisan Veer Mahavidyalaya, Wai. This project has not been carried out previously by any agency/ person. So I have selected this project for field work.

Place: Wai

Date:

Sr.No.	Name of Student	Roll No.	Sign
1	Sanas Vishakha Pandurang	86	Osanas
2	Gaikwad Akanksha Hanmant	13	Agaikwad
3	Wagh Akanksha Rajendra	12	awagh
4	Akhade Komal Kondiram	85	(Bk:

## **INDEX**

SR.NO	CONCEPT	PAGE NO.
1.	Introduction	1
2.	Market Status & Scope	2
3.	Importance of Bio fertilizer	3
4.	Definition of Bio fertilizer	4
5.	Types of Biofertilizer  BIO NPK  Azospirillium  Mycorrhiza Phosphate Solubilizing Bacteria Potassium Solubilizing Bacteria	5 TO 8
6.	Application of Biofertilizers	9
7.	Precautions of to take while using biofertilizer.	10

## Introduction

crucial role in boosting the agricultural production, however they have a shorthistory in modern agriculture. Their immediate action and low cost managed tobring them rapidly in to the center of attention. Their toxic effects onenvironment, plant, animal and human life diverted the focus on ecofriendlyplant protection. Moreover, the development of resistance in insects against common pesticides has not been solved yet. Thus, practices such as Integrated Pest Management (IPM) have gained more importance. Biopesticides are important componant of teh IPM. The terminology 'Biopesticide' means use of beneficial microorganisms to control the pest. However, the availability of biopesticide is the major constraint; considering the total cropped area.

Indescriminate use of chemical pesticides contributed in loss of soil productivity along with addition of salts to the soil. To revive the soil health and living on alternate source has become essential concept of biofertilizer came forward, which can be a good supplement for a chemical fertilizers, Biofertilizers are nutrient availability systems in which biological process are involved,

The term biofertilizers includes selective micro-organism like bacteria, fungi andalgae. Which are capable of fixing atmospheric

nitrogen or convert solublephosphate and potash in the soil into forms available to the plants. Biofertilizer is a cost effective, eco-friendly & renewable source of land nutrient they play a vital role in maintaining a long term soil fertility & sustainability. The biofertilizer with nitrogen

fixer & phosphate solubilizer fixes 20-40 Kg of nitrogen per acre. The biofertilizer maintain the soil fertility cost by using in theyield is assured with biofertilizer & continuos use of biofertilizer makes the soil very fertile for good yield.

The biofertilizer can be manufacture in soil form or in liquid form for spraying on the plants. Biopesticide and biofertilizer is a need of modern agriculture since demand for safe and residue free food is increasing. Therefore, to cater the need, it is necessary to promote the efforts for production of biopesticides and biofertilizers in the state in private sector to encourage the entrepreneurs.



## Market status and Scope:

3

3

3

3 3

9

3

Sustainable agricultural is a complex issue associated with producing food whilemaintaining biophysical resources including soil, water & biota with no adverseimpact on the wider environment. Biofertilizer and biopesticide fulfils all theneeds for sustainable agriculture. In spite of the fact that biopesticides have been extensively

used in developedcountries for the past few decades, the non-availability of the same productssuitable for the regionally – important pests resulted in the sluggishness of the growth of biopesticides in developing countries. However, in recent years, awareness on biopesticides among farmers of the developing world has been increasing with newer products entering the market. And surprisingly, most currently registered products for insect control are produced in developing countries and included bacteria (104 products), nematodes (44 products), fungi(12 products), viruses (8 products) and protozoa (6 products). Market forbiopesticides is increasing as the agrochemical industry adapts to the problems of chemical pesticide resistance, re – registration of pesticide and changing public attitudes to pesticide use.

9 9

In India, similar condition is for biofertilizer production. Biofertilizer are availablefor almost all crops for three nutrient ie. N (N-fixers), P (P-solubilizers) & K (K-mobilizers). Therefore biofertilizer consumption is expected to increase too manyfold in coming years. Previously the state agriculture universities non governmentorganizations were engaged in mass production of biofertilizers. But now severalsmall and medium sector manufacturers have come in picture. Largestproducing states being Madhya Pradesh, Maharashtra, Karnataka andTamilnadu. The biofertilizer demand in India is several thousand tones, but nosufficient production facilities are available.

#### IMPORTANCE OF BIOFERTILIZER

Biofertilizers are important for the following reasons:

- Biofertilizers improve the soil texture and yield of plants.
- They do not allow pathogens to flourish.
- · They are eco-friendly and cost-effective.
- Biofertilizers protect the environment from pollutants since they are natural fertilizers.
- They destroy many harmful substances present in the soil that can cause plant diseases.
- Biofertilizers are proved to be effective even under semi-arid conditions.

## **Biofertilizers:**

3

3

3

3

3

3

3

9

-

9

'Bio' means 'life'. Therefore, by definition biofertilizers are living organisms that enrich the nutrient quality of the soil. It refers to the use of microbes instead of chemicals to enhance the nutrition of the soil. As a result, it is also less harmful and does not cause pollution.

This is what makes them so important to organic farming because they are completely environment-friendly. Let's take a look at the different microbes that are used as biofertilizers.

Biofertilizers are the substance that contains microorganism's living or latent cells. Biofertilizers increase the nutrients of host plants when applied to their seeds, plant surface or soil by colonizing the

rhizosphere of the plant. Biofertilizers are more cost-effective as compared to chemical fertilizers.

## Types of Biofertilizers:-

Biofertilizers have a broad segment. It has very different kinds of living organism-based bacteria like:-

Bio NPK

0

3

0

3

3

3

3

3

3

- Acetobacter
- Azospirillum
- Azotobacter
- Mycorrhiza
- Potassium Solubilizing Bacteria
- Phosphate solubilizing bacteria
- Zinc Solubilizing Bacteria
- Sulphur Solubilizing Bacteria

Rhizobium is one of the top bio fertilizer that widely used in farming. There are many different kinds of bio fertilizers, and have unique characteristics with different target crops. Let us know more about it in detail below.

### Bio NPK:-

Bio NPK is a combination of three different types of bacteria. Nitrogen, Phosphorus and Potassium. NPK bio fertilizer boosts nitrogen uptake while also producing plant growth hormones and vitamins. These aids the crop's germination, early emergence, and root development.

NPK bio fertilizer increases the availability of micronutrients (such as Mn, Mg, Fe, Mo, B, Zn, and Cu) from the soil to the plant, resulting in faster root growth, and nutrients uptake, and increased resistance/tolerance to diseases/drought.

Acetobacter (Biofertilizers)

Acetobacter is a Nitrogen-Fixing Bacteria (Biofertilizers) and is widely used for sugar-producing crops. Acetobacter forms colonies inside the crop tissues and provides sufficient nitrogen in crops. It also produces growth hormones that support roots & shoot growth.

## Advantages of Acetobacter:-

- · It improves soil fertility.
- · Nature-friendly and chemical-free solutions.
- Encourage root proliferation and rootlet density and branching, which results in increased mineral and water uptake and plant growth.

## Azospirillum:-

3

3

3

Azospirillum is also a type of Nitrogen-fixing bio-inoculant and is used as a biofertilizer. Azospirillum also produces a large number of biologically active substances such as vitamins, nicotinic acid, indole acetic acids, and gibberellins.

### Advantages of Azospirillum:-

- Stimulate plant growth
- Helpful in nitrogen fixation
- Helps in better germination
- Helps in better root development

## Mycorrhiza

3

3

**3** 

0

9

0

9

9

Mycorrhiza is a kind of fungus used in crops as a bio fertilizer. Mycorrhiza fungi form a symbiotic relationship with plant roots to increase the absorption of phosphor, water, and minerals from the soil. It also protects from diseases causing organisms to the roots. Mycorrhiza also restores original soil fertility.



### Advantages of Mycorrhiza:-

- Improves nutrient absorption from the soil.
- Improves plant growth.
- Improves stress management.
- Helps in healthier and dense root development.

## Phosphate Solubilizing Bacteria

Phosphate solubilizing bacteria or PSB is capable of solubilizing inorganic phosphate from insoluble components. PSB is widely used as a bio fertilizers for

plant growth and nutrient use efficiency. Soil microbes play an important role in regulating the decomposition dynamics of organic matter and the availability of plant nutrients such as nitrogen (N), phosphorus (P), potassium (K), and other



nutrients.

0

3

0

3

3000

99

e

9

9

### Advantages of Phosphate Solubilizing Bacteria:-

- Increase the availability of micronutrients such as Mn, Mg, Fe, Mo, B, Zn, and Cu from the soil in addition to P2O5.
- Stimulate rapid root growth for water and nutrient absorption.
- Produce organic acids such as malic, succinic, fumaric, citric, tartaric acid, and acetic acid that accelerate P2O5, and increase maturation and yield.
- Increases disease resistance and drought tolerance in plants due to rapid cell growth.
- Substances that promote growth, such as adapting to the plant along with other beneficial microbes.
- Reduce the need for phosphatic fertilizer by 25 30%.

#### **Potassium Solubilizing Bacteria**

9

3

3

9

3

3

3

3

3

0

9

0

c

9

Potassium soluble bacteria is a biofertilizer that plays an important role in the formation of mono acids and proteins, these are produced by ammonium ions, which are then absorbed by the root from the soil. It also helps plants to take up other elements that activate several enzymes.

Advantages of Potassium Solubilizing Bacteria or PSB:-

- It helps in raising potash in all soil types and increases the crop yield by 15-20%.
- · Increases crop resistance against different weather conditions
- Improves fruit and grain size and quality of crops.
- It also helps in photosynthesis properly.

### Application of Biofertilizers:-

<u>Soil Treatment</u>: Bio fertilizers can be used to treat soil since they restore the soil's original fertility. For soil treatment, we mixed bio fertilizers with compost fertilizer and, we kept mixture for a night. Then we spread this mixture into soil where seed is to be sown.

<u>Seed Treatment</u>: We can also use organic fertilizers to treat the seeds. For seed treatment process, seeds are soaked in a mixture of nitrogen and phosphorus fertilizers. After that, the seeds dry out and harden as quickly as possible.

These are some of the most important Bio fertilizers types that are widely
used in crops. So Bio fertilizers are the need of the hour. They are stable
reliable and environment-friendly also. Peptech Biosciences deals in various
types of Bio fertilizers. You may check the technical details of BiofertilizersProducts

 Biofertilizer product must contain good effective strain in appropriate population and should be free from contaminating microorganisms.

9

9

0

3

3

0

0

e e

3

200

2

9 9 9

9

000

- · Select right combination of biofertilizers and use before expiry date.
- Use suggested method of application and apply at appropriate time as per the information provided on the label.
- For seed treatment adequate adhesive should be used for better results.
- For problematic soils use corrective methods like lime or gypsum pelleting of seeds or correction of soil pH by use of lime.
- Ensure the supply of phosphorus and other nutrients.

## Precautions to take while using biofertilizers:

- Biofertilizer packets need to be stored in cool and dry place away from direct sunlight and heat.
- Right combinations of biofertilizers have to be used.

3

- As Rhizobium is crop specific, one should use for the specified crop only.
- Other chemicals should not be mixed with the biofertilizers.
- While purchasing one should ensure that each packet is provided with necessary information like name of the product, name of the crop for which intended, name and address of the manufacturer, date of manufacture, date of expiry, batch number and instructions for use.
- The packet has to be used before its expiry, only for the specified crop and by the recommended method of application.
- · Biofertilizers are live product and require care in the storage
- Both nitrogenous and phosphatic biofertilizers are to be used to get the best results.
- It is important to use biofertilizers along with chemical fertilizers and organic manures. Biofertilizers are not replacement of fertilizers but can supplement plant nutrient requirements.

Coordinator
Environmental Studies
Kisan Veer Mahavidyalaya
Wai, Dist. Satara.

Jugar