Established in: 1984

Shri Datta Prasadik Shikshan Prasarak Mandal's,

Late Rajkamalji Bharti Arts, Commerce and Smt. Sushilabai R. Bharti Science College Arni, Dist-Yavatmal.

Affiliated to Sant Gadge Baba Amravati University, Amravati
NAAC Accredited (First Cycle)

Dr. Kirantai S. Bharti *President* | **Adv. Siddharth S. Bharti** *Secretary* | **Dr. N. A. Pistulkar** *Principal*

Phone (Office): 07234 – 295468, **Website: www.smdb.ac.in,** **E-mail ID:smdbacc418@sgbau.ac.in**

7.2 Best Practices

7.2.1: Describe two best practices successfully implemented by the Institution as per NAAC format provided in the manual.

2022-2023

Best practice report

TOPIC : ASSESSMENT OF ABIOTIC PARAMETERS OF DRINKING WATER OF ARNI, DIST-YAVTAMAL

DEPARTMENT OF ZOOLOGY

LATE RAJKAMALJI BHARTI ARTS,COMMERCE AND SMT.SUSHILABAI R.BHARTI SCIENCE COLLEGE, ARNI,DIST-YAVATMAL

TITLE OF THE PRACTISE : ASSESSMENT OF ABIOTIC PARAMETERS OF DRINKING WATER OF ARNI, DIST-YAVTAMAL

Water quality can be affected by poor planning of industrial sites, animal farms, and barnyards and feedlots. Until recently, the type of water source has been indicative of the potential risks of contamination. Poor water quality can affect the quality of food crops and lead to illness in those who consume them. water must be free of germs & chemical and be clear. Water that is safe for drinking is called potable water. Drinking Water is essential to human and other life forms even though it provide no calories or organic nutrients. Water has improved over the last decades in almost every part of the world but approximately one billion people still black access to adequate sanitation.

OBJECTIVES OF THE PRACTICE:

The water analysis project was conducted in Arni. The sampling sites were selected in a random manner so as to come up with results. For the analysis of different parameters of drinking water, water sample collected from tap (piped), shallow and deep wells, tube wells used for domestic purposes in Arni.

- **Ensuring** safe and healthy drinking water to meet designated beneficial uses.
- **Analysis** of the water quality of the area of the project i.e. Arni region.
- **Inspection** of any significant threats to groundwater or drinking water resources from project area.
- **Suggestion** for Protection and improvement of water quality within the area of the Project.

THE CONTEXT:

Sources of water:

Drinking water comes from variety of sources.

Surface water: The water which falls on the ground as rain or hill this water collected from a special area called as catchment. The water is then stored in natural or artificial barrier called dam or reservoirs.

River or lakes: Town water supplies are sometime drawn directly from nearby rivers or lake.

Springs: These are found where underground water flows out of the ground naturally without flows out of the ground naturally without the use of bores well or pump spring often occur forwards the bottom of a hill or on sloping ground.

Excavated Damps: These damps are made by scooping out soil to make a large shallow hole. These damps are sometimes placed at bottom of slope to aid water collection.

Rainwater Tanks: The rainwater which falls on the roofs of houses is often collected using poof guttering leading through a pipe to a storage tank.

Bores and Wells: These are holes drilled into ground deep enough to permanent body water. A pipe ran down the hole into water and pump is used to get the water up to ground levels.

Relationship of water and health:

- The relationship between water quality and health problems are complicated and include both negative and positive effects.

Availability of pure water:

- The availability of good quality of water is an indispensable feature for preventing diseases and improving quality of life.

Assessment is necessary:

- It is necessary that the quality of drinking water should be checked at regular intervals.

THE PRACTICE:

The analysis of water parameters is based on samples collected from 5 different region of Arni. Five samples are taken from each region or site. The main purpose is studying drinking water quality in terms of different parameters

including temperature, pH, TDS and DO. The results were then compared with the drinking water quality standards from WHO.

SITE A: - Shastri Nagar Area

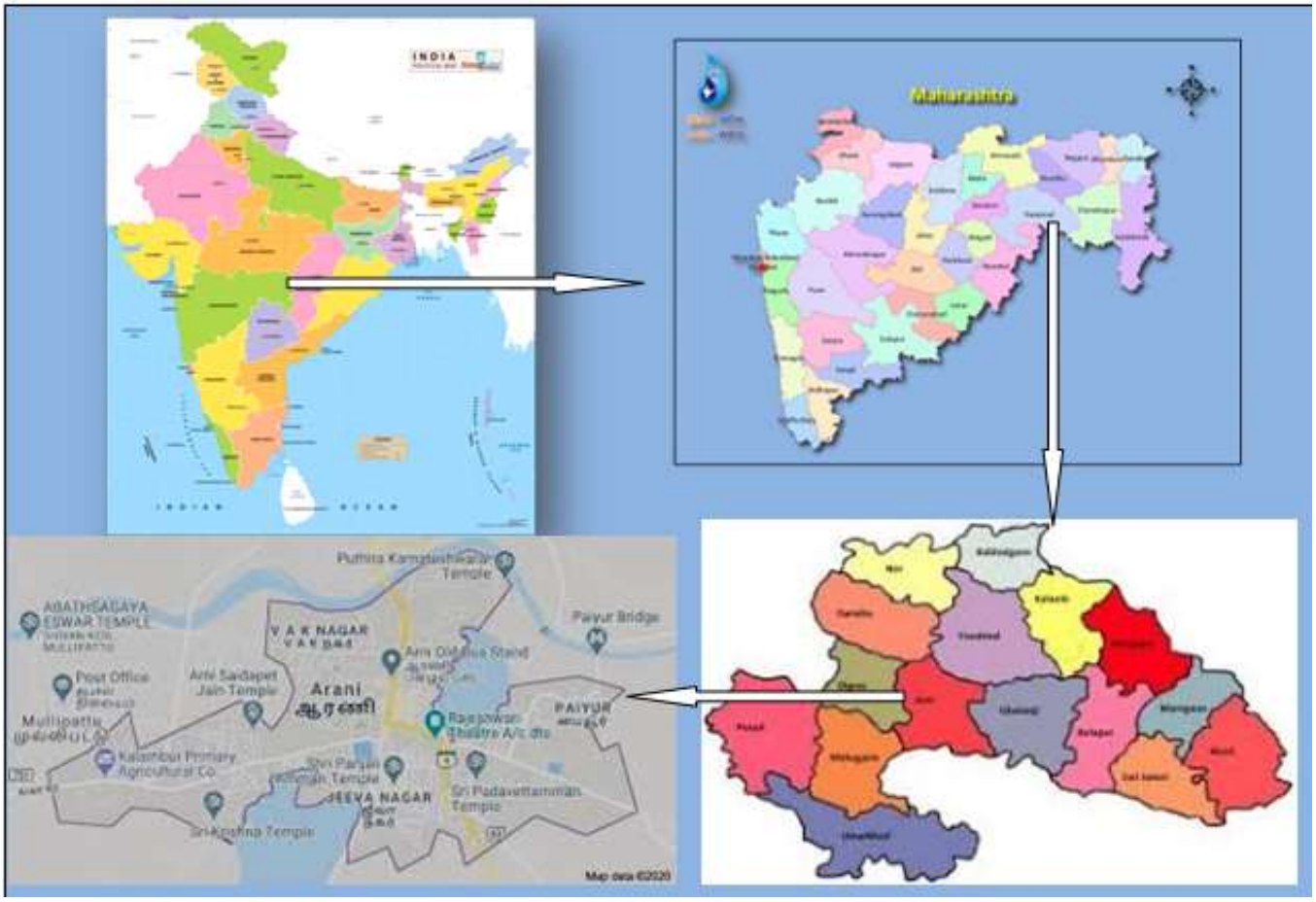
SITE B: - Shivaji Nagar Area

SITE C: - Sambhaji Nagar Area

SITE D: - Bhavsing Nagar Arni.

SITE E: - Green Park Arni.

The sample details were adequately described and the sample bottles were properly labeled to avoid errors. Water temperature and pH were recorded at the time of sample collection by using thermometer and digital pH meter. And others parameters such as TDS and DO are measured in laboratory by using water analysis kit.



MAP SHOWING LOCATION OF ARNI

SITE A: - Shastri Nagar Area (Avg. in 2022-23)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Danish Zakir Sayyed	Barrel water	32	5.58	110	10.3
2	Sanket G.Harsulkar	Tap water	33	5.39	620	8.4
3	Jitendra Khatri	Filter water	32	5.68	160	8.3
4	Amol Jaiswal	Open well water	32	8.42	540	10.3
5	Sandip Wadulkar	Bore water	33	8.92	540	9.0

SITE B: - Shivaji Nagar Area (Avg. in 2022-23)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Vinod Motipavar	Bore Well water	38	9.6	560	10.00
2	Gajanan Ambedvar	Hand Pump	34	8.25	710	9.06
3	Vilas Rathod	Barrel water	36	6.60	100	6.60
4	Amit Wankhade	Filter water	32	5.20	90	10.03
5	Rajaram Komavar	Tap water	32	5.20	280	10.09

SITE C: - Sambhaji Nagar Area (Avg. in 2022-23)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Sandhya A. Gulhane	Barrel water	32	6.98	90	8.5
2	Shantabai S.Dipewar	Hand pump	32	6.48	730	7.7
3	Shanu R. Chavan	Boar well water	33	5.40	650	7.8
4	Renuka J. Rathod	Filter water	32	7.65	80	7.6
5	Sayarbai S. Mukhtar	Tap water	33	7.25	520	7.9

SITE D: - Bhavsing Nagar (Avg. in 2022-23)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Maya R. Bansod	Well water	33	9.32	261	2.1
2	Sapna S. Bhalge	Tap water	32	9.34	50	1.8
3	Kavita V. Lohkare	Boar water	32	9.36	156	3.5
4	Priti M. Dhakulkar	Filter water	33	N.O.	N.O.	N.O.
5	Madhuri A. Take	Barrel water	33	9.35	590	11.2

SITE E: - Green park Arni (Avg. in 2022-23)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Shalini D. Jadhao	Filter water	34.2	4.70	160	5.3
2	Savita S. Wadekar	Barrel water	32	4.69	110	5.6
3	Suvarna V.Chaudhari	Boar water	32	3.72	540	5.5
4	Vidya R. Jadhao	Hand pump water	32	4.60	840	7.0
5	Shyam G.Raut	Well water	34.1	7.25	620	5.0

List of students participate in project (2022-23)

S.N.	Name of the participant students "Group A" Bsc II
1	Shubhangi Niranjan Sontakke
2	Sushil Sunil Adane

S.N.	Name of the participant students "Group B" Bsc II
1	Abhay V. Rathod
2	Samina Sheikh Aziz

S.N.	Name of the participant students "Group C" Bsc II
1	Diksha Suresh Patil
2	Namira Sheikh Mukhtar
3	Payal Dilip Chavan
4	
5	

S.N.	Name of the participant students "Group D" Bsc II
1	Mohini Vilas Lohakare
2	Sonali A. Sontakke

S.N.	Name of the participant students "Group E" Bsc II
1	Samiksha Santosh Kale
2	Shraddha Devanand Jadhao
3	Vaishnavi Digambar Bhoyar

PROBLEMS ENCOUNTERED AND RESOURCES REQUIRED

Social responsibility :

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Improper uses of water :

- People uses water for cooking, bathing, washing clothes & utensils, watering to plant in garden & parks, but more quantity of pure water flow away without use due to lack of water management.

Inadequate Sanitation :

- Regularly monitoring water quality is helpful of identifying existing problems, but any issues that could emerge in the future can not be understood previously.
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- Water has improved over the last decades in almost every part of the India but one large community still back access to adequate sanitation.

NORMAL RANGE OF PARAMETERS

- pH Lower limit -6.5 -Upper limt-8.0
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- TDS : Excellent less than 300 , Good 300-600, Fair 600-900, Poor 900-1200

Unacceptable Above 1200.

Conclusion :

Parameters of the drinking water samples collected from different area of Arni region shows variations but all results with in normal range.

Hence it is inferred that though the sources of drinking water varies but as per the norms of WHO the water is well and good in condition and potable.

Pictures of collection of sample from different sites

Pictures water analysis done in laboratory.

Pictures Submission of report to house owner.

Head
Department of Zoology
Late R.Bharti Arts. Com &
Smt.S.R Bharti Sci. College,
Arni, Dist-Yavatmal

Principal
late R.Bharti Arts.Com.&
Smt.S R.Bharti Sci.College
arni. Dist.Yavatmal

2021-2022

Best practice report

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DEPARTMENT OF ZOOLOGY

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SITE C :- Datta Nagar Area SITE D :- Ashok lay out.

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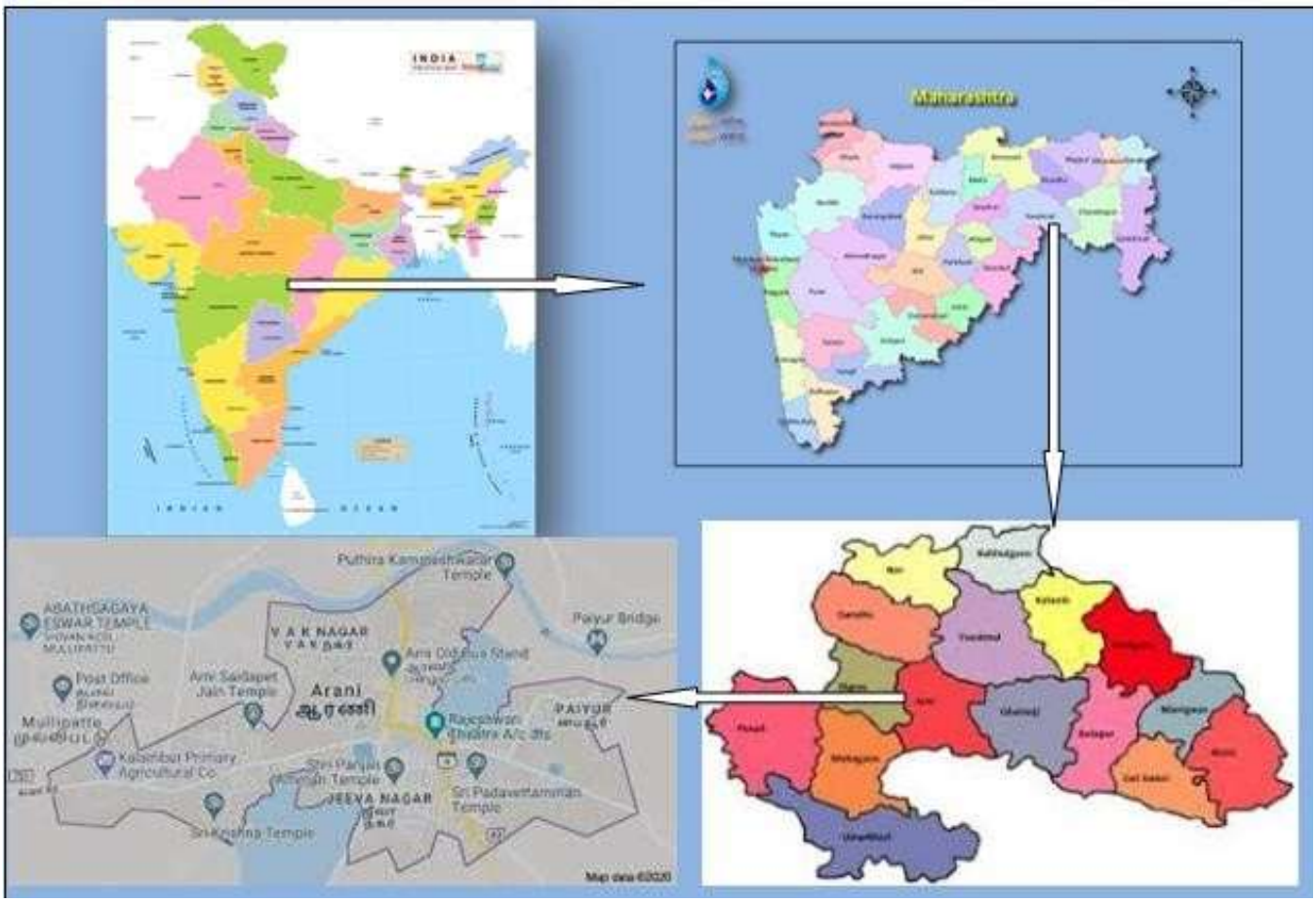

MAP SHOWING LOCATION OF ARNI

SITE A: - Shastri Nagar Area (Avg. in 2021-22)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Mamata Nugulwar	Tap water	21	6.30	217	1.3
2	Sangita Ade	Barrel water	20	6.40	35	1.4
3	Jostna Uike	Hand pump water	24	6.40	157	1.2
4	Jyoti Karanjkar	Open wel water	20	6.10	228	1.3
5	Priya Dullarwar	Filter water	21	6.8	53	1.3

SITE B: - Gandhi Nagar Area (Avg. in 2021-22)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Jayashri kakarwar	Tap water	31	6.20	154	1.0
2	Harshda kakarwar	Hand Pump	21	6.35	188	1.1
3	Archana Borechate	Boar wel water	24	6.38	197	1.1
4	Ramesh Chavhan	Open wel	20	6.05	194	0.8
5	Lalit Pittalwar	Filter water	18	6.28	24	1.2

SITE C: - Datta Nagar Area (Avg. in 2021-22)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Savita more	Open well water	22	6.41	196	1.5
2	Gauri Bande	Tap water	22	6.40	156	3.5
3	Manda Nikade	Boar wel water	22	6	274	2.3
4	Sharda Dhage	Barrel	22	6.34	50	1.8
5	Mamta Jadhav	Hand pump	22	6.41	196	1.5

SITE D: - Ashok lay out (Avg. in 2021-22)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Shobha Tale	Boar well	20	6.3	261	2.1
2	Bhagyshree Upadhye	Barrel water	22	6.34	50	1.8
3	Ranjana Gurgude	Tap water	23	6.40	156	3.5
4	Nimesh Dhomane	Hand pump	21	6.3	249	1.5
5	Open wel water	Open wel water	23	6.6	250	1.2

SITE E: - Deorwada nagar Area (Avg. in 2021-22)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Shila Jadhav	Hand pump	18	6.31	229	1.0
2	Savita Bajare	Tap water	20	6.6	180	1.2
3	Prathmeah Kadu	Open well water	21	6.10	212	1.1
4	Asha Deshmukh	Boar well water	23	6.41	251	1.3
5	Ashvini Bharbhade	Filter water	21	6.7	26	1.2

List of students participate in project (2021-22)

S.N.	Name of the participant students "Group A" Bsc II
1	Sanket Gajanan Harsulkar
2	Sneha Premdas Ade
3	Komal Vijay Bhokare
4	Aisha Sattar Shah
5	Payal Vinod Chavan

S.N.	Name of the participant students "Group B" Bsc II
1	Raddi Chavhan
2	Tanvi Chopade
3	Pratiksha Wankhada
4	Danish Sayyed
5	Sadanand Khatare

S.N.	Name of the participant students "Group C" Bsc II
1	Neha Sahebrao Rathod
2	Sayali Ramchandra Jadhav
3	Kanchan Suresh Jadhav
4	Shejal Anil Jadhav
5	Tejaswini Suresh Neware

S.N.	Name of the participant students "Group D" Bsc II
1	Devyani Suresh Changole
2	Neha Vilas Lohkare
3	Pratiksha Prakash Rathod
4	Vaibhavi Mohan Gurgude
5	Arya Namdeo Malkhede

S.N.	Name of the participant students "Group E" Bsc II
1	.Dharati Prakash Ratne
2	Jagruti Pramod Kaushatkar
3	Sakshi Harish Mindvaik
4	Sakshi Rathod

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QUESTIONARIES FOR THE PROJECT OF

ASSESSMENT OF ABIOTIC PARAMETERS OF DRINKING WATER OF ARNI, DIST- YAVATMAL

Group- 'A'

Class B.Sc.II (Sem-IV)

Department of Zoology

Late Rajkamalji Bharti Art's,Commerce & Smt.Sushilabai R. Bharti Science College Arni,Dist.Yavatmal

- Name of house owner:- Dilip Ganpat Devkar
- Mobile no.:- 9011445511
- Area / location:- Madhav Nagar
- Drinking water source:- Open well
- Opinion about drinking water sorce:- sweet in taste
- Are you interested in understanding quality of drinking water.- Yes
- How much water consume for drinking:- 40 to 45
- How much water consume for household purposes:- 500 lit

Diseases:-

- Gastrointestinal diseases- No
- Diarrhoea- No
- Vomiting- No
- Kidney stone- No
- Stomach pain- No
- Skin infection- No
- Eye irritation- No
- Mucous membrane irritation- No
- Fluorosis- No

Signature of House Owner

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Department of Zoology

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- Name of house owner:- Vijay Narayan Pachakhande
- Mobile no.:- 9423613410
- Area / location:- Madhav Nagar
- Drinking water source:- Barrel
- Opinion about drinking water sorce:- Good
- Are you interested in understanding quality of drinking water.- Yes
- How much water consume for drinking:- 20 lit
- How much water consume for household purposes:- 700 lit

Diseases:-

- Gastrointestinal diseases- No
- Diarrhoea- No
- Vomiting- No
- Kidney stone- No
- Stomach pain- No
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Head
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2019-2020

Best practice report

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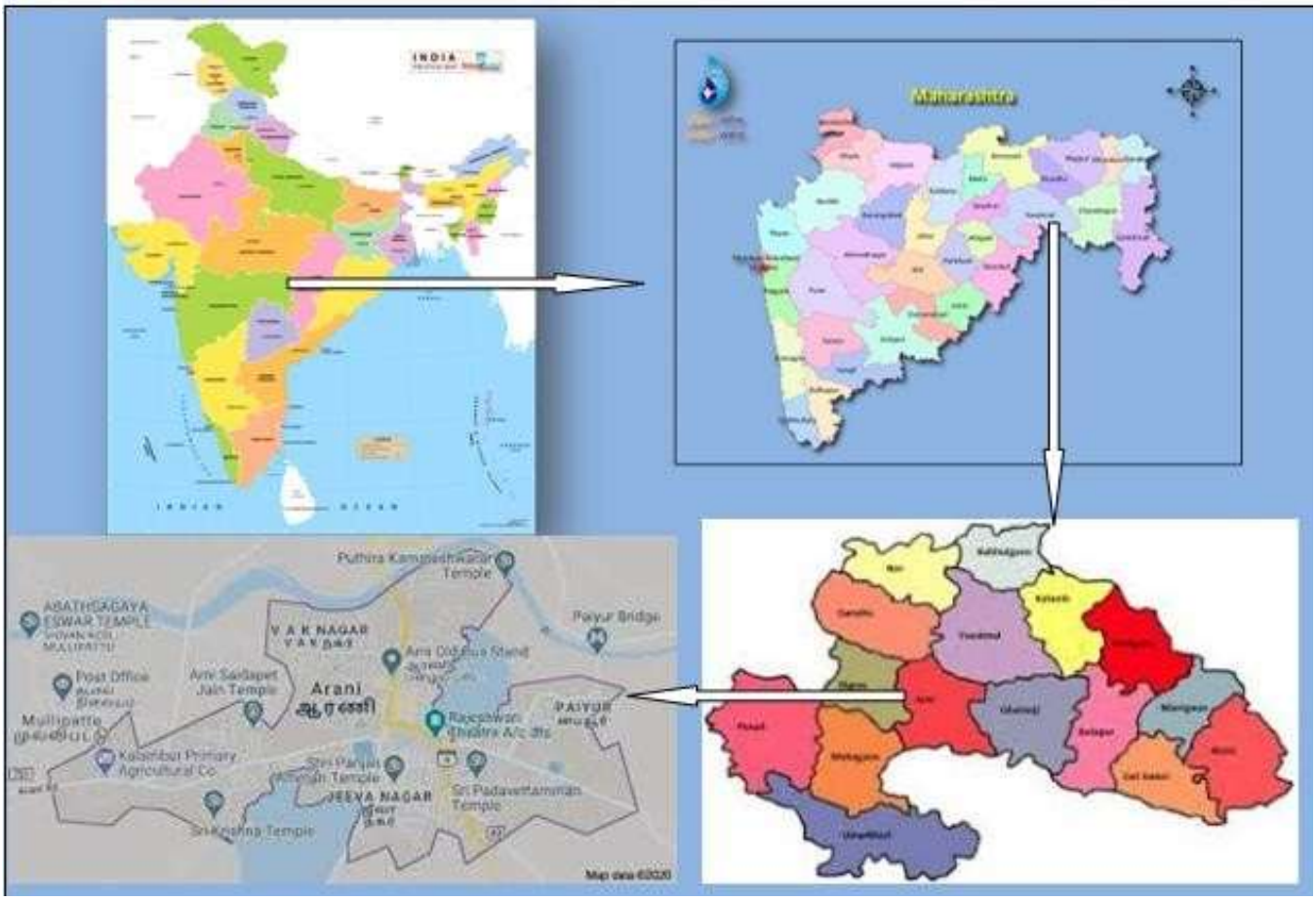

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2	Sandhya A. Gulhane	Barrel water	20	6.40	35	1.4
3	Rama S. Munnarwar	Hand pump water	24	6.40	157	1.2
4	Laxmi B.Atram	Open wel water	20	6.10	228	1.3
5	Vinod T.Suratkar	Filter water	21	6.8	53	1.3

SITE B: - Shastri Nagar Area (Avg. in 2019-20)

S.N.	Name of house owner	Type of drinking water source	Temp. ^0C	pH	TDS mg/l	DO mg/l
1	Bhaurav Naik	Tap water	31	6.20	154	1.0
2	Ranjana Pawar	Hand Pump	21	6.35	188	1.1
3	Nandkishor Sunsetwar	Boar wel water	24	6.38	197	1.1
4	Vaishali Rewanshete	Open wel	20	6.05	194	0.8
5	Madhukar Thakare	Filter water	18	6.28	24	1.2

SITE C: - Madhav Nagar Area (Avg. in 2019-20)

S.N.	Name of house owner	Type of drinking water source	Temp. ^0C	pH	TDS mg/l	DO mg/l
1	Dilip G. Devkar	Open well water	22	6.41	196	1.5
2	Vinod Chavan	Tap water	22	6.40	156	3.5
3	Champatrao Jadhav	Boar wel water	22	6	274	2.3
4	Vijay Pachkhande	Barrel	22	6.34	50	1.8
5	Parasram S. Chavan	Hand pump	22	6.41	196	1.5

SITE D: - Police station Area (Avg. in 2019-20)

S.N.	Name of house owner	Type of drinking water source	Temp. ^0C	pH	TDS mg/l	DO mg/l
1	Shammi Shafi Kazi	Boar well	20	6.3	261	2.1
2	Subhash Kasambe	Barrel water	22	6.34	50	1.8
3	Sagar Gatalewar	Tap water	23	6.40	156	3.5
4	Usman S.Sheikh	Hand pump	21	6.3	249	1.5
5	Shammi Shafi Kazi	Open wel water	23	6.6	250	1.2

SITE E: - Shivaji nagar Area (Avg. in 2019-20)

S.N.	Name of house owner	Type of drinking water source	Temp. ^0C	pH	TDS mg/l	DO mg/l
1	Ashwini Datta Nanote	Hand pump	18	6.31	229	1.0
2	Shahida Sharif Sheikh	Tap water	20	6.6	180	1.2
3	KrushnaviV.Kochade	Open well water	21	6.10	212	1.1
4	Javeria Zikar Sheikh	Boar well water	23	6.41	251	1.3
5	Fauzia Noushad Sa,Ali	Filter water	21	6.7	26	1.2

List of students participate in project(2019-2020)

S.N.	Name of the participant students “Group A” Bsc II
1	Unnati B. Bharane
2	Pallavi D. Bharane
3	Dipali B.Khodankar
4	Pallavi S.Pawade
5	Ku.Ambika D. Kochade
6	Vaishnavi S. Kute
7	Navamika N. Nandikondawar

S.N.	Name of the participant students “Group B” Bsc II
1	Maheswari S. Wankhade
2	Ayushi P. Ingole
3	Mayuri D.Rathod
4	Tejswini G.Mundhe
5	Bhushan G. Mandavakar
6	Ishwar U. Jadhav

S.N.	Name of the participant students “Group C” Bsc II
1	Komal Pachkhande
2	Pallavi Chavan
3	Ravina Chavan
4	Puja P. Chavan
5	Kartik D. Gabhane
6	Dhammadip D. Gawai

S.N.	Name of the participant students “Group D” Bsc II
1	Gaurav S. Gawande
2	Yash V. Lad
3	Abdul Hakim
4	Rahul Jadhav
5	Vijay Rathod

S.N.	Name of the participant students “Group E” Bsc II
1	Fiza Sharif Sheikh
2	Shifa A. Khan
3	Neha K. Godambe
4	Sapna B. Rathod
5	Hemlata V. Surjuse
6	Ragini Jadhav
7	Samiksha Gaykwad

PROBLEMS ENCOUNTERED AND RESOURCES REQUIRED

Social responsibility :

- It's social responsibility to educate people and aware them about pure drinking water to be used otherwise community has to face critical problem of health.

Improper uses of water :

- People uses water for cooking, bathing, washing clothes & utensils, watering to plant in garden & parks, but more quantity of pure water flow away without use due to lack of water management.

Inadequate Sanitation :

- Regularly monitoring water quality is helpful of identifying existing problems, but any issues that could emerge in the future can not be understood previously.
- Peoples are not aware about the effect of contaminated water.
- Water has improved over the last decades in almost every part of the India but one large community still back access to adequate sanitation.

NORMAL RANGE OF PARAMETERS

- pH Lower limit -6.5 -Upper limt-8.0
- DO : Above 3 mg/lit.
- TDS : Excellent less than 300 , Good 300-600, Fair 600-900, Poor 900-1200

  Unacceptable Above 1200.

Conclusion :

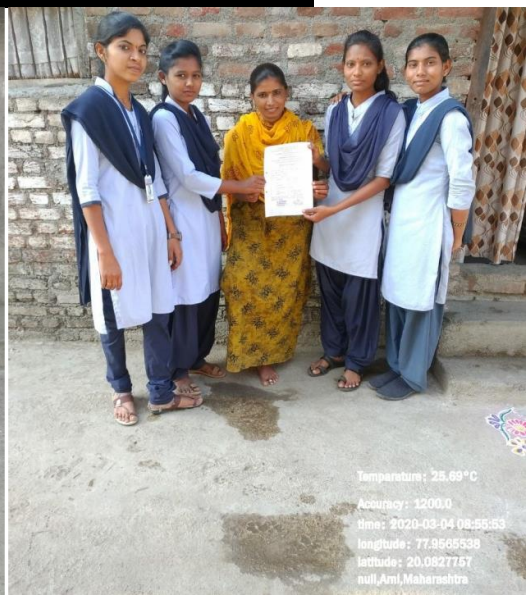
Parameters of the drinking water samples collected from different area of Arni region shows variations but all results with in normal range.

Hence it is inferred that though the sources of drinking water varies but as per the norms of WHO the water is well and good in condition and potable.

Pictures of collection of sample from different sites

Pictures water analysis done in laboratory.

Pictures Submission of report to house owner.



QUESTIONARIES FOR THE PROJECT OF

ASSESSMENT OF ABIOTIC PARAMETERS OF DRINKING WATER OF ARNI, DIST- YAVATMAL

Group- 'A'

Class B.Sc.II (Sem-IV)

Department of Zoology

Late Rajkamalji Bharti Art's,Commerce & Smt.Sushilabai R. Bharti Science College Arni,Dist.Yavatmal

- Name of house owner:- Dilip Ganpat Devkar
- Mobile no.:- 9011445511
- Area / location:- Madhav Nagar
- Drinking water source:- Open well
- Opinion about drinking water sorce:- sweet in taste
- Are you interested in understanding quality of drinking water.- Yes
- How much water consume for drinking:- 40 to 45
- How much water consume for household purposes:- 500 lit

Diseases:-

- Gastrointestinal diseases- No
- Diarrhoea- No
- Vomiting- No
- Kidney stone- No
- Stomach pain- No
- Skin infection- No
- Eye irritation- No
- Mucous membrane irritation- No
- Fluorosis- No

Signature of House Owner

QUESTIONARIES FOR THE PROJECT OF

ASSESSMENT OF ABIOTIC PARAMETERS OF DRINKING WATER OF ARNI, DIST- YAVATMAL

Group- 'A'

Class B.Sc.II (Sem-IV)

Department of Zoology

Late Rajkamalji Bharti Art's,Commerce & Smt.Sushilabai R. Bharti Science College Arni,Dist.Yavatmal

- Name of house owner:- Vijay Narayan Pachakhande
- Mobile no.:- 9423613410
- Area / location:- Madhav Nagar
- Drinking water source:- Bandey
- Opinion about drinking water sorce:- Good
- Are you interested in understanding quality of drinking water.- Yes
- How much water consume for drinking:- 20 lit
- How much water consume for household purposes:- 700 lit

Diseases:-

- Gastrointestinal diseases- No
- Diarrhoea- No
- Vomiting- No
- Kidney stone- No
- Stomach pain- No
- Skin infection- No
- Eye irritation- No
- Mucous membrane irritation- No
- Fluorosis- No

Signature of House Owner

Head
Department of Zoology
Late R.Bharti Arts. Com.& Smt.S.R Bharti Sci. College, Arni, Dist-Yavatmal

Principal
late R.Bharti Arts.Com.& Smt.S.R.Bharti Sci.College arni, Dist.Yavatmal

LATE RAJKAMALJI BHARTI ARTS,COMMERCE AND SMT.SUSHILABAI R.BHARTI SCIENCE COLLEGE, ARNI,DIST-YAVATMAL

DEPARTMENT OF ZOOLOGY

REPORT OF

ASSESSMENT OF ABIOTIC PARAMETERS OF

DRINKING WATER OF

ARNI, DIST-YAVTAMAL

2018-19

TITLE OF THE PRACTISE : ASSESSMENT OF ABIOTIC PARAMETERS OF DRINKING WATER OF ARNI, DIST-YAVTAMAL

Water also essential for healthy growth to form carps, and farm stock and is used in the manufacture of many products. It is most IMP that the water which people drink & use for other purpose is clam water this means that the water must be free of germs & chemical and be clear water that is safe for drinking is called potable water.

Drinking Water is essential to human and other life forms even through it provide no calories or organic nutrients.Water has improved over the last decades in almost every part of the world but approximately one billion people still black access to adequate sanitation.

OBJECTIVES OF THE PRACTICE :

The water analysis project was conducted in Arni. The sampling sites were selected in a random manner so as to come up with results. For the analysis of different parameters of drinking water, water sample collected from tap (piped), shallow and deep wells, tube wells used for domestic purposes in Arni.

- Assessment of the drinking water quality of communities within the area of the project i.e. Arni region.
- Identification of any significant threats to groundwater or drinking water resources from project area.
- Attain water quality standards in drinking water to meet designated beneficial uses.
- Suggestion for Protection and improvement of water quality within the area of the Project.

THE CONTEXT :

Sources of water :

There are many ways by which we get water.

1) **Surface water :** The water which falls on the ground as rain or hill this water collected from a special area called as catchment. The water is then stored in natural or artificial barrier called dam or reservoirs.
2) **River or lakes:** Town water supplies are sometime drawn directly from nearby rivers or lake.

3) **Springs:** These are found where underground water flows out of the ground naturally without flows out of the ground naturally without the use of bores well or pump spring often occur forwards the bottom of a hill or on sloping ground.
4) **Excavated Damps:** These damps are made by scooping out soil to make a large shallow hole. These damps are sometimes placed at bottom of slope to aid water collection.
5) **Rainwater Tanks:** The rainwater which falls on the roofs of houses is often collected using poof guttering leading through a pipe to a storage tank.
6) **Bores and Wells :** These are holes drilled into ground deep enough to permanent body water. A pipe ran down the hole into water and pump is used to get the water up to ground levels.

Relationship of water and health :

- The relation ship between water quality and health problems are complicated and include both negative and positive effects.

Availability of pure water :

- The availability of good quality of water is an indispensable feature for preventing diseases and improving quality of life.

Assessment is necessary :

- It is necessary that the quality of drinking water should be checked at regular intervals.

THE PRACTICE :

The analysis of water parameters are based on samples collected from 4 different region of Arni. Five samples are taken from each region or site. The main purpose is studying drinking water quality in terms of different parameters including temperature, pH, TDS and DO. The results were then compared with the drinking water quality standards from WHO.

SITE A: - Gandhi nagar Area

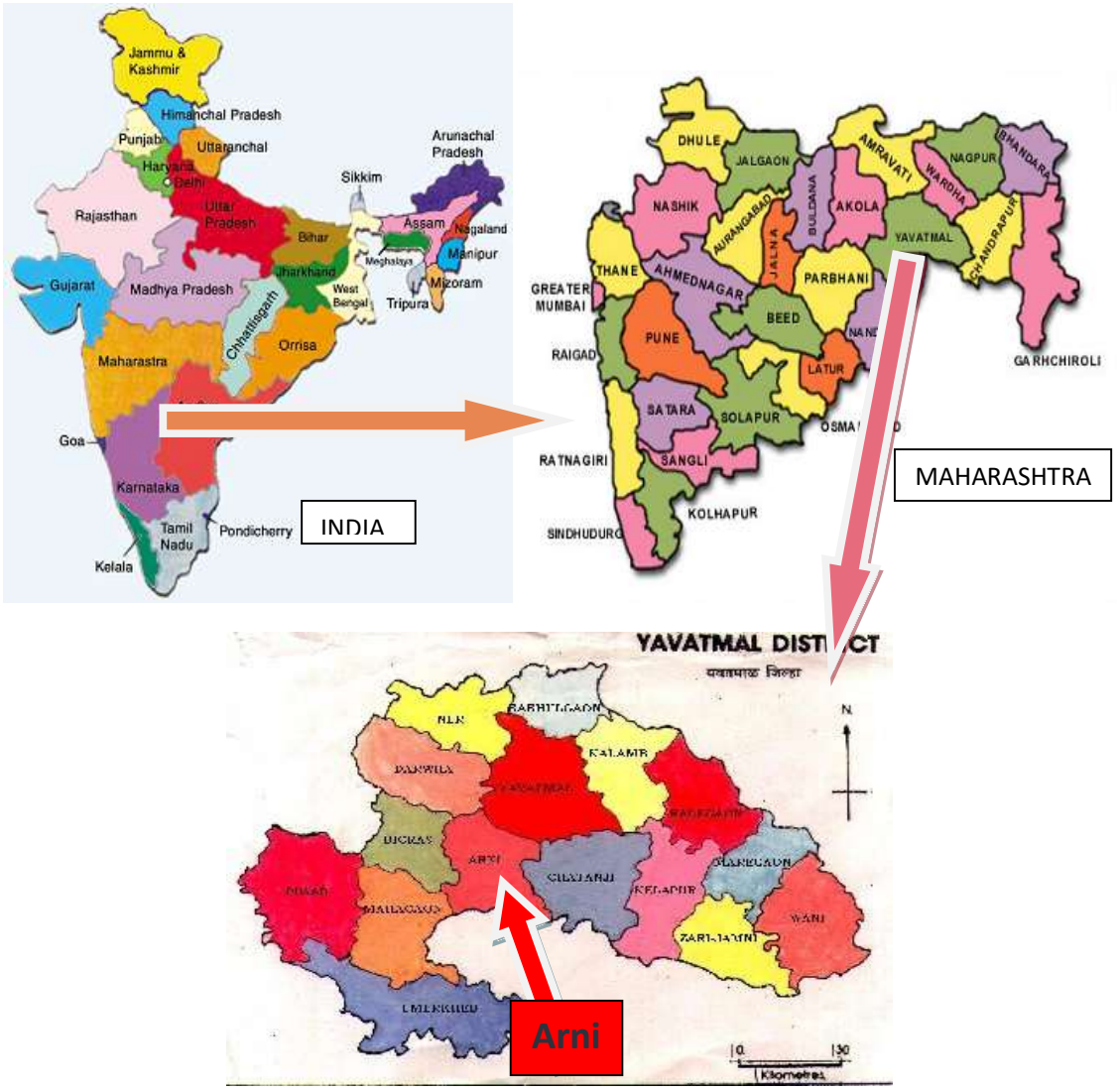
SITE B :- Shivaji Nagar Area

SITE C :- Shashtri Nagar Area

SITE D :- Green Park Area

Tap water, well water, tube well water sample were collected and stored in suitable bottles to permit accurate analysis. The sample details were adequately described and the sample bottles were properly labeled to avoid errors. Water temperature and pH were recorded at the time of sample collection by using thermometer and digital pH meter. And others parameters such as TDS and DO are measured in laboratory by using water analysis kit.

MAP SHOWING LOCATION OF ARNI



SITE A: - Gandhi nagar Area Avg. in (2018-19)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Mohan Chavan	Water barrel	26	7.15	320	24.0
2	Jitendra Jain	Tap water	26	7.25	300	3.70
3	D.Deshmukh	Tap water	26	7.61	380	3.6
4	Ramesh Chavan	Tap water	26	7.52	990	3.5
5	Santosh Kakarwar	Bore well water	29	7.48	780	2.9

SITE B: - Shivaji Nagar Area (Avg. in 2018-19)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	V.V.Sawarkar	Tube well water	32	7.64	900	3.0
2	U.R.Komawar	well water	32	7.74	900	2.9
3	P.S.Bhoyar	Tap water	32	8.12	420	3.0
4	R.G.Ambedwar	Hand pump	32	7.43	850	2.8
5	D.R.Ade	Filter (Barrel)	26	7.59	600	2.9

SITE C: - Shashtri Nagar Area (Avg. in 2018-19)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Mangala Nakhate	Tap water	32	7.69	440	2.6
2	Ujwala Bhoyar	well water	30	7.87	500	2.8
3	Arun Uke	Filter water	32	8.02	90	2.7
4	Sunil Pawar	Hand Pump	31	7.59	620	2.5
5	Nanibai Bavaskar	Tap water	32	7.79	660	2.6

SITE D: - Green Park Area (Avg. in 2018-19)

S.N.	Name of house owner	Type of drinking water source	Temp. ^{0}C	pH	TDS mg/l	DO mg/l
1	Vaishali S.Bhalge	Filter	28	7.47	350	2.7
2	P.R.Rathod	Tube well water	29	7.39	1030	2.3
3	Atul D. Mangavkar	Tube well water	30	7.42	1010	2.4
4	Rupali Vinchurkar	Tube well water	29	7.24	1010	2.6
5	Vijay B.Kejkar	Tap water	30	7.50	920	2.6

S.N.	Name of the participant students “Group A” Bsc II
1	Pooja R.Dugad
2	Payal S.Gawande
3	Aarju N.Shal
4	Shivani K.Wankhade
5	Adiya A.Sayyad
6	Manisha Ade

S.N.	Name of the participant students “Group B” Bsc II
1	Ashwini R.Kale
2	Dipa S.Bompilwar
3	Kirti S.Bompilwar
4	Payal S.Tupe
5	Sakshi R.Katkar
6	Vaishanvi R. Mantriwad
7	Vrushali D.Makode
8	Pooja G. Rajpurohit

S.N.	Name of the participant students “Group C” Bsc II
1	Pavan M. Uike
2	Kunal R.Nakhate
3	Vivek N.Kamble
4	Swapnil S.Pillewar
5	Kirti A.Pawar
6	Shubhangi N.Raut

S.N.	Name of the participant students “Group D” Bsc II
1	Pratiksha B.Nimbalkar
2	Pratiksha M.Rathod
3	Sneha B.Rawate
4	Ankita S.Gomase
5	Shruti S.Kadao
6	Ananya V.More

PROBLEMS ENCOUNTERED AND RESOURCES REQUIRED

Inadequate Sanitation :

- Regularly monitoring water quality is helpful of identifying existing problems, but any issues that could emerge in the future can not be understood previously.
- Peoples are not aware about the effect of contaminated water.
- Water has improved over the last decades in almost every part of the India but one large community still back access to adequate sanitation.

Improper uses of water :

- People uses water for cooking, bathing, washing clothes & utensils, watering to plant in garden & parks, but more quantity of pure water flow away without use due to lack of water management.

Social responsibility :

- It’s social responsibility to educate people and aware them about pure drinking water to be used otherwise community has to face critical problem of health.

NORMAL RANGE OF PARAMETERS

- pH Lower limit -6.5 -Upper limt-8.0
- DO : Above 3 mg/lit.
- TDS : Excellent less than 300 , Good 300-500, Fair 600-900, Poor 900-1200

  Unacceptable Above 1200.

















Photographs of water analysis

Head
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LATE RAJKAMALJI BHARTI ARTS,COMMERCE AND SMT SUS HILABAI R.BHARTI SCIENCE COLLEGE, ARNI,

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Best Practice 1

1.Title of the Practice: Hands on Seed Ball Preparation

2.Goals: Students will learn a new method for dispersing seeds that has both artistic and historical value.

3.Objectives: i) Students will be involved in preparing seed balls in the college campus by using the seeds provided them from the forest department and self collected.

ii)All the prepared seed balls will be distributed among the forest department students teaching and non teaching staff.

ii) to spread greenery in minimum expenditure and hence a very good idea to conserve and develop nature.

4 Context: The Seedballs making activity is conducted consistent activity run by the Zoology Dept. from the year ,18-19and 2019-2020 and 2020-21 and 22-23 as an intiative in greening the environment. The increasing population is creating pressure on the resources which has resulted in many environmental problems. The Seed Ball programme focuses on **increasing green cover** across India. The basic aim of the activity is to make students, community as well as public aware about the environment and its conservation. So on 5/8/2022 the activity was carried out for the B.SC I, II, III year students. And the student of B.Sc III also collected the seed of Mango,Berry etc. "The participants managed to create about 200 seedballs. Of these, we shall be giving 500 seedballs to Social Forest department Arni

The remaining seed balls had been thrown by the students themselves for distributing in the places around their native places.

for ecological restoration The composition of seed ball makes it **self-sustainable and favorable for germination** in most environments.

Practice: The faculty and the students of B.Sc III are involved in the simple steps process of seedball making**.**

1) Take the clay, different types of medicinal seeds and the dry compost and water.

2) Mix assorted seeds, dry organic compost, and dry clay together in a large bin.

2. Mist or pour a small amount of water onto the bin while continuing to mix. Spray or add just enough water so that the mixture binds together but does not stick to your hands.

3. Take a pinch of the finished mixture and roll into penny-sized round balls in the palm of your hand. 4. Put seed balls on a tray to completely dry for a day or two.

4) Store in a dark, dry place throw seed balls into the garden. Water to allow seeds to germinate

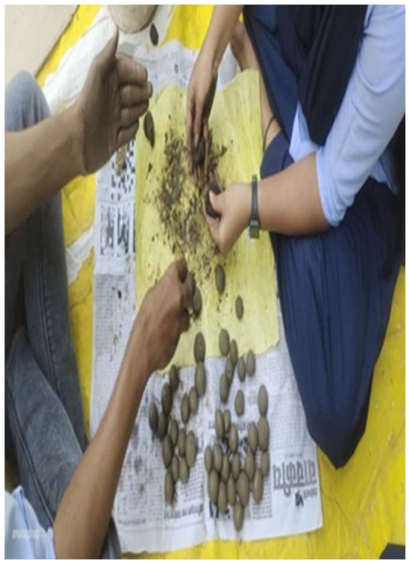
Evidences of success:

- The students learnt to make the use of seed instead of throwing them.
- The seedballs made by us gets 90-95% of germination rate thus helps for the reforestation.

Workshop of Seedball

Seedball made by students

Seeds given by forest dept.



Students making seedballs

Seedballs ready for Forest Dept.

Assistant Professor
Late R.Bharti Arts, Com.&
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Arni, Dist-Yavatmal

Principal
late R.Bharti Arts.Com.&
Smt.S.R.Bharti Sci.College
arni, Dist.Yavatmal

LATE RAJKAMALJI BHARTI ARTS,COMMERCE AND SMT.SUSHILABAI R.BHARTI SCIENCE COLLEGE, ARNI,DIST-YAVATMAL

DEPARTMENT OF ZOOLOGY

REPORT OF Best Practice

SEEDBALL BOMBING

2021-2022

LATE RAJKAMALJI BHARTI ARTS,COMMERCE AND SMT SUSHILABAI R.BHARTI SCIENCE COLLEGE, ARNI,DIST-YAVATMAL

Best Practice -I

1. **Title of the Practice** Seed Bombing –One of the best practise

2. **Goals:** Students will learn a new method for dispersing seeds that has both artistic and historical value.

3. **Objectives:** Seed Bombing is a techquie of planting tree spices by embedding organic seed balls in the ground. It is a hand – on activity of moulding, soil, clay, compost seed and water with your hands until everything sticks together and roll the mixture into firm seed balls and leave the balls into dry in a sunny spot for at least 48hours before throwing. With the seed bombing activity vegetation can be introduced in any land by dropping seed balls in one hand and to initiate afforstration at unused waste land. The main objectives are.

   i) To protect seed from wild insects and animal

   ii) to spread greenery in minimum expenditure and hence a very good idea to conserve our mother earth and develop nature.

   iii) to germinate maximum number of seeds and grow into plants

4 Context: The programme focuses on **increasing green cover** across India. The process involves making golf ball-sized mixture of soil, seeds and compost, and scattering it in suitable places for trees to grow.Among many initiatives to improve green cover, making and distributing seed balls is a **quicker and cost-effective** method to reclaim the lost green cover of our environment. Hence, it is an emerging **afforestation technique** adopted

worldwide; most commonly used for ecological restoration The composition of seed ball makes it **self-sustainable and favorable for germination** in most environments.

Seedballs- the seedbomb making is the consistent activity of Zoology Dept from the year ,17-18.18-19and 2019-2020. In the year 2021-22 the students of the final year of zoology dept.has made 200 seed balls. In the year also (2018-19) the Dept has worked over making 500 seerdballs. In the year 2020-2021 due to the Covid 19 all the world was facing lockdown but inspite of this the students of B.Sc III were involved in making these seedballs. They made 200 seed balls with all the seeds they have with them at their own places.In the current year after the covid pandemic situation the students were eagerly involved in making the seed balls .All the students of B.Sc I ,II and III participated in making seed balls.

The Seed of Tamarind, Mango,Neem etc were taken to make seed balls. Also the students collected the seed of Mango,Berry etc. "The participants managed to create about 300 seedballs. Of these, we shall be giving 200 seddballs to Social Forest department Arni

The remaining seed balls had been thrown by the students themselves for distributing in the places around their native places.

Make balls of seeds that are both fun to throw and an easy way to grow native trees. We invite volunteers of all age groups to contribute towards nature. From school students, college students to working professionals, all are welcome to join this campaign started by Lt.Rajkamalji Bharti Arts Commerce and Smt.S.R.Bharti Science Colege Arni . And do not just stop with yourself – motivate your neighborhood to join this.

Practice: Our college Zoology department has taken up seed bombing practices is one of the best practice and executing the activity regularly by involving students and staff.

1)Take the clay, different types of medicinal seeds and the dry compost and water.

2)Mix assorted seeds, dry organic compost, and dry clay together in a large bin.

2. Mist or pour a small amount of water onto the bin while continuing to mix. Spray or add just enough water so that the mixture binds together but does not stick to your hands.

3. Take a pinch of the finished mixture and roll into penny-sized round balls in the palm of your hand. 4. Put seed balls on a tray to completely dry for a day or two.

4)Store in a dark, dry place throw seed balls into the garden. Water to allow seeds to germinate

Evidences of success:

- The students learnt to make the use of seed instead of throwing them.
- The seedballs made by us gets 90% of germination rate thus helps for the reforestation.

Students making seedball in college campus

Demo of making seedballs

Seedballs made by the students

Assistant Professor
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LATE RAJKAMALJI BHARTI ARTS,COMMERCE AND SMT SUSHILABAI R.BHARTI SCIENCE COLLEGE, ARNI,DIST-YAVATMAL

Best Practice -I

1. **Title of the Practice**: SEEDBALLS making (Due to covid -19pandamic)

2. **Goals:** Students will ,make the seed balls at their homes due to covid .

3. **Objectives: i)** Students will create seed balls at their own homes due to covid and lockdown.

   ii) to spread greenery in minimum expenditure and hence a very good idea to conserve and develop nature.

4 Context: Seedballs- the seedbomb making is the consistent activity of Zoology Dept from the year ,18-19and 2019-2020 . In the year 2020-21 the students of all the year of zoology dept.has made 200 seed balls. Due to the Covid 19 all the world was facing lockdown but inspite of this the students of B.Sc were involved in making these seedballs at their respective homes.They made 150 seed balls with all the seeds they have with them at their own places. The Seed Ball programme focuses on **increasing green cover** across India. The process involves making golf ball-sized mixture of soil, seeds and compost, and scattering it in suitable places for trees to grow.

Among many initiatives to improve green cover, making and distributing seed balls is a **quicker and cost-effective** method to reclaim the lost green cover of our environment. Hence, it is an emerging **afforestation technique** adopted worldwide; most commonly used for ecological restoration The composition of seed ball makes it **self-sustainable and favorable for germination** in most environments.

And the student of B.Sc III also collected the seed of Mango, Berry etc.

“The participants managed to create about 200 seedballs. Of these, we shall be giving 100 seddballs to Social Forest department Arni

The remaining seed balls had been thrown by the students themselves for distributing in the places around their native places.

Make balls of seeds that are both fun to throw and an easy way to grow native trees. We invite volunteers of all age groups to contribute towards nature. From school students, college students to working professionals, all are welcome to join this campaign started by Lt.Rajkamalji Bharti Arts Commerce and Smt.S.R.Bharti Science Colege Arni . And do not just stop with yourself – motivate your neighborhood to join this.

Practice: The faculty and the students of B.Sc III are involved in the simple steps process of seedball making**.**

1)Take the clay, different types of medicinal seeds and the dry compost and water.

2)Mix assorted seeds, dry organic compost, and dry clay together in a large bin.

2. Mist or pour a small amount of water onto the bin while continuing to mix. Spray or add just enough water so that the mixture binds together but does not stick to your hands.

3. Take a pinch of the finished mixture and roll into penny-sized round balls in the palm of your hand. 4. Put seed balls on a tray to completely dry for a day or two.

4)Store in a dark, dry place throw seed balls into the garden. Water to allow seeds to germinate

Evidences of success:

- The students learnt to make the use of seed instead of throwing them.

The seedballs made by us gets 90% of germination rate thus helps for the reforestation

Students Made Seedballs at their home due to Covid -19 pandemic

Students Made Seedballs at their home due to Covid -19 pandemic

Students Throwing seedballs to the surrounding area

Assistant Professor
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LATE RAJKAMALJI BHARTI ARTS COMMERCE ARTS COMMERCE AND SMT SRB SCIENCE COLLEGE ARNI

DEPARTMENT OF ZOOLOGY

REPORT OF BEST PRACTICES

MAKING OF SEEDBALLS

2019-2020

LATE RAJKAMALJI BHARTI ARTS,COMMERCE AND SMT SUSHILABAI R.BHARTI SCIENCE COLLEGE, ARNI,DIST-YAVATMAL

Best Practice -I

1. **Title of the Practice**: Making SEEDBALLS –One of the best practise

2. **Goals:** Students will learn a new method for dispersing seeds that has both artistic and historical value with the help of teacher.

3. **Objectives: i)** Students will make the seed balls.

   ii) to spread greenery in minimum expenditure and hence a very good idea to develop nature.

4 Context: The department of Zoology is continuously busy in carrying out various activities every year from the year 2017-18,18-19. This year also Seedballs- making activity was carried out by the Department of Zoology . In the year (2019-20) the students of of zoology dept.has made 1100 seed balls. along with the students of Shri Mahant Dattaramji Bharti School had made seedballs in a one day workshop held at the college campus on 28/6/2019.The basic aim behind this workshop is to bring the awareness about the deforestation and the consequences of it ,so as to have the forest conservation and to have the reforestation 1100 seedballs were prepared .

Little hands are working assiduously to create a green cover on the barren hills of Arni region district Yavatmal. The childrens from Shri. Mahant Dattaramji School Arni have prepared 1100 seed balls that will be dispersed on the slopes of the hills and other def orested parts of forest region with the help of the forest department.

"Since last Monday, with the help of teachers and Dept.of Zoology these children were able to prepare around 1100 seed balls.

The forest department provided seeds of tamarind, neem, soapnut and other medicinal trees. The staff even assisted in the preparation of the red soil and manure mixture to make the seed balls.

The students seemed to enjoy every bit of it.Most of the student, says it is more fun when learning is outside the classroom. “We made seed balls ourselves and learnt as we prepared them,’.

The teachers of the school, said, “We can teach children better during such activities than in theory classes. These children will, in turn, tell their parents too.”

“It is practically impossible to plant saplings as it is a hillock. The seed balls are a good idea as they can grow into trees in the next few years,”. This was a small a small efforts taken so as to bring awareness in students and to the society.

. The Seed Ball programme focuses on **increasing green cover** across India. The process involves making golf ball-sized mixture of soil, seeds and compost, and scattering it in suitable places for trees to grow.

Practice: The faculty and the students of B.Sc III are involved in the simple steps process of seedball making**.**

1)Take the clay, different types of medicinal seeds and the dry compost and water.

2)Mix assorted seeds, dry organic compost, and dry clay together in a large bin.

2. Mist or pour a small amount of water onto the bin while continuing to mix. Spray or add just enough water so that the mixture binds together but does not stick to your hands.

3. Take a pinch of the finished mixture and roll into penny-sized round balls in the palm of your hand. 4. Put seed balls on a tray to completely dry for a day or two.

4)Store in a dark, dry place throw seed balls into the garden. Water to allow seeds to germinate

Evidences of success:

- The students learnt to make the use of seed instead of throwing them.
- The seedballs made by us gets 90 to 95% of germination rate thus helps for the reforestation.

Seedballs made by the students

Students and Principal Prof.G.M.Agrawal , Dr. P.J.Awate HOD Zoology, Dr.R.P.Tekade Asst. Professor, H.M. Shri Mangam sir present for the seedball workshop

Seedalls made by the students

Assistant Professor
Late R.Bharti Arts, Com.&
Smt.S.R.Bharti Sci. College,
Arni, Dist-Yavatmal

Principal
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arni, Dist.Yavatmal

LATE RAJKAMALJI BHARTI ARTS,COMMERCE AND SMT.SUSHILABAI R.BHARTI SCIENCE COLLEGE, ARNI,DIST-YAVATMAL

DEPARTMENT OF ZOOLOGY

REPORT OF Best Practice

SEEDBALL BOMBING

2018-2019

LATE RAJKAMALJI BHARTI ARTS,COMMERCE AND SMT SHILABAI R.BHARTI SCIENCE COLLEGE, ARNI,DIST-YAVATMAL

Best Practice -I

1. **Title of the Practice**: Making SEEDBALLS –One of the best practise

2. **Goals:** Students will learn a new method for dispersing seeds that has both artistic and historical value.

3. **Objectives: i)** Students will create seed balls.

   ii) to spread greenery in minimum expenditure and hence a very good idea to develop nature.

4 Context: Seedballs- the seed bomb making is the consistent activity of Zoology Dept from the year 2017-18,18-19. In the year 2017-18 the students of the final year of zoology dept. has made 200 seed balls. In this year also 8/6/2018(2018-19) the Dept has worked over making 900 seerdballs. All the 36 students of B.Sc III were involved in making these seedballs. The Seed Ball programme focuses on **increasing green cover** across India. The process involves making golf ball-sized mixture of soil, seeds and compost, and scattering it in suitable places for trees to grow.

Among many initiatives to improve green cover, making and distributing seed balls is a **quicker and cost-effective** method to reclaim the lost green cover of our environment. Hence, it is an emerging **afforestation technique** adopted worldwide; most commonly used for ecological restoration The composition of seed ball makes it **self-sustainable and favorable for germination** in most environments.

The forest Dept of Arni and the social forest Dept provides us different types of seed .This year they gave us 10 different types of medicinal seeds like Amala ,Almond, Neem, Hirda etc. And the student of B.Sc III also collected the seed of Mango,Berry etc. “The participants managed to create about 900 seedballs. Of these, we shall be giving 300 seddballs to Social Forest Dept Arni ,200 to Forest Dept Arni,200 to Forest Dept ,Digras for its upcoming sapling plantation drive in July and onwards. ,”

The remaining seed balls had been given to the participants for distributing in the places around their native places.

Make balls of seeds that are both fun to throw and an easy way to grow native trees. We invite volunteers of all age groups to contribute towards nature. From school students, college students to working professionals, all are welcome to join this campaign started by Lt.Rajkamalji Bharti Arts Commerce and Smt.S.R.Bharti Science Colege Arni . And do not just stop with yourself – motivate your neighborhood to join this.

Apart from making the seedballs in the college campus the faculty is also serving for the society by involving in the workshop at different places and at different college in collaboration with the forest dept. In the month of July the faculty was engaged in the workshop held at Bhavani Tekdi,Digras. Here the program was started with the plantation with the RFO forest dept, Digras the faculty gave the theoretical explanation to the Anganwadi sevika on the seedballs and how to throw them so that they can be easily germinate.

The students of Mohna bai girls school Digras were given the Demo on the making of the seedballs. At the Datey collg yavatmal the students of Geography dept. were given the Demo of seed ball the students made the seedball by using the seeds provided to them.

Practice: The faculty and the students of B.Sc III are involved in the simple steps process of seedball making**.**

1)Take the clay, different types of medicinal seeds and the dry compost and water.

2)Mix assorted seeds, dry organic compost, and dry clay together in a large bin.

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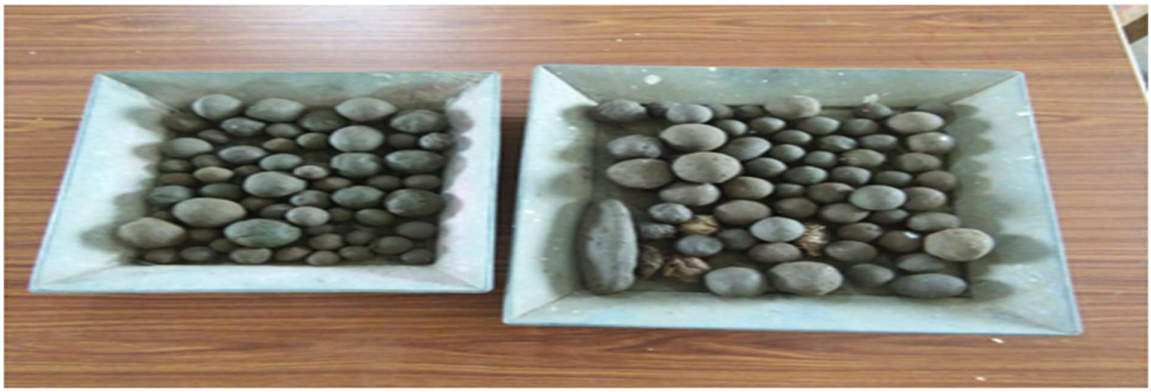
4)Store in a dark, dry place throw seed balls into the garden. Water to allow seeds to germinate

Evidences of success:

- The students learnt to make the use of seed instead of throwing them.
- The seedballs made by us gets 90.5% of germination rate thus helps for the reforestation.

Making seedballs at college campus(900 seedballs)

Students made seedballs by using Medicinal seeds



Seedballs of various seeds like Mango,Neem ,Boar, Blue berries ,Hirda etc.

Seedballs Handing over to Rept.Rangari Mam RFO Social Forestry Dept.Arni

Seedballs thrown by Anganwadi sevika,Digras

Seedball making demo to Anganwadi sevika,Digras

Workshop Of Seed ball making at Mohna bai girls school Digras

World of Seedball by Power point presentation

Workshop Of Making Seedballs at Datey college yavatmal

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