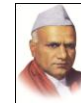
“Dissemination of Education for Knowledge, Science and Culture.”

– Shikshanmaharshi Dr. Bapuji Salunkhe



Shri Swami Vivekanand Shikshan Sanstha Kolhapur

Dattajirao Kadam Arts, Science and Commerce College, Ichlakaranji.

NAAC Reaccredited “B” grade with 2.89 CGPA

RESEARCH PROJECTS

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RESEARCH PROJECTS BY FACULTY

In today's world, we are constantly adopting. We are constantly demanding new things and new ways to do things. Without research our demands would go completely unrecognized. Research is what gets us as the human race farther.

Research is the product of curiosity which is something we all have. We get curious we question things and then we want to know all that there is to know. So what comes next? the research.

The research & teaching go hand in hand. Majority of teachers in D.K.A.S.C. College are specialists in their respective fields and are academically competent for undertaking research. Conduct of research by the teaching faculty & creating a research environment is the core activity of college.

Principal

List of Research Projects

Sr. No	Name of the Principal Investigator	Title of the Project	Funding Agency	Amount
1	Dr. H. S. Patil	शशी प्रभा शास्त्री तथा ममता कालीया के उपन्यासो मे कामकाजी नारी जीवन	U.G.C	Rs.60,000/-
2	Dr. K. D. Tiwade	Aspect of Religion in Larkin's religious poetry with special regards to Christianity A Critical Assessment	U.G.C	Rs.50,000/-
3	Dr. C. A .Patil	हिंदी और मराठी आत्मकथा का तुलनात्मक अनुशिलन .	U.G.C	Rs.50,000/-
4	Dr. M. G. Patil	Strucltural electrical and magnetic property of tetravalent ion substitute Cd-Ni ferrites	U.G.C	Rs. 1,40,000/-
5	Dr. A. D. Mhalungekar	Commander in chief of Shivaji Maharaj- Kadatoji Alia prataprao Gujar- A Critical Study (1666 to 1674)	U.G.C	Rs.30,000/-
6	K. Y. Mane	Study of Mineral Deficiency in grapeyard with special reference from Miraj and Tasgon tahsil.	U.G.C	Rs. 1,33,000/-
7	Dr. A. S. Vhasmane	Development of Textile Industry in Ichalkaranji, Dist Kolhapur (M.S.)	U.G.C	Rs.75,000/-
8	Dr. E.B. Alwekar.	contribution of Dakshin Maharashtra Sahitya Sabha in Litrary criticism.	U.G.C	Rs.55000
9	Dr. S.I.Noorani	A Critical Study of Hindu-Sikh and Muslim Characters in Some Selected Historical, Political Indian English Fiction.	U.G.C	RS. 90,000/-

10	Dr. P.B. Kale	Study of the Soil Problems due to over Irrigation and Heavy use of Chemical Fertilizers along the Krishna and Panchaganga Rivers belt from Shirol Tahsil District Kolhapur	U.G.C	Rs. 1,60,000/-
11	Dr. S.P. Kamble	"Studies on Panchaganga river pollution near Ichalkaranji area.M.S.India".	U.G.C	Rs 115000/-
12	Dr. S. T. Ingle	“Assessment of medicinal plants from forest of some holy places in Hatkangle, Tahsil”.	U.G.C	Rs. 1, 40,000/-
13	Dr. V. A.Patil	“Studies on Diseases and insect pest management of grapevine from Miraj & Tasgaon Tahsil & its importance in relation to grape yield.”	U.G.C	Rs. 55,000/-
14	Dr. M. G .Patil Mr. A.R. Nimblakar	Characterization of Al, Cu, doped and undoped ZnO thin film	INUP IIT Bombay	
15	Dr. M. G .Patil Mr. A.R. Nimblakar	Characterization of CuO thin films	INUP IIT Bombay	

Research Project by Dr. H. S. Patil

1. **Title of the research project :**

   शशी प्रभा शास्त्री तथा ममता कालीया के उपन्यासो मे कामकाजी नारी जीवन

2. **Name of the principal investigator :**

   Dr. Mrs. H.S.Patil

3. **Department/Subject :-** Hindi

4. **Name of funding agency:-** U.G.C

5. **Project sanction letter no:-**

   File No23-991/09(WRO)date 26.8.2009

6. **Amount funding allocated by funding agency –**

   Rs.60,000/-

7. **Amount Received-** Rs 45,000/-

8. **Whether project is ongoing or completed:-**

   Completed

9. **Project starting date:-** 26.08.2009

10. **Project completion date:-** 13.10.2015

11. **Objective of research project:-** Attached

12. **Whether the objectives are achieved? :-** Yes

13. **Brief summary of results / findings of research project:-** Attached

14. **What is social/economic relevance of the project**

Research Project by Dr. K. D. Tiwade

1. **Title of the research project :**
   Aspect of Religion in Larkin's religious poetry with special regards to Christianity A Critical Assessment

2. **Name of the principal investigator :**

   Dr. K. D. Tiwade

3. **Department/Subject :-** English

4. **Name of funding agency:-** U.G.C

5. **Project sanction letter no:-**

   File No23-1471/09(WRO)date 13.3.2010

6. **Amount funding allocated by funding agency –**

   Rs.50,000/-

7. **Amount Received-** Rs 40,000/-

8. **Whether project is ongoing or completed:-**

   Completed

9. **Project starting date:-** 13.04.2010

10. **Project completion date:-** 08.10.2015

11. **Objective of research project:-** Attached

12. **Whether the objectives are achieved? :-** Yes

13. **Brief summary of results / findings of research project:-**

14. **What is social/economic relevance of the project**

Research Project by Dr. C.A.Patil

1. **Title of the research project :**

   हिंदी और मराठी आत्मकथा का तुलनात्मक अनुशिलन .

2. **Name of the principal investigator :**

   Dr. C. A. Patil

3. **Department/Subject :-** Hindi

4. **Name of funding agency:-** U.G.C

5. **Project sanction letter no:-**

   File No23-2683/11(WRO)date 11.1.2012

6. **Amount funding allocated by funding agency –**

   Rs.50,000/-

7. **Amount Received-** Rs 40,000/-

8. **Whether project is ongoing or completed:-**

   Completed

9. **Project starting date:-** 24.02.2012

10. **Project completion date:-** 09.12.2014

11. Objective of research project:-

मराठी तथा हिंदी आत्मकथा का तुलनात्मक अध्ययन करना

मराठी आत्मकथा का हिंदी भाषा पर प्रभाव और हिंदी आत्मकथा का आवलोकन करना

12. Whether the objectives are achieved? :- Yes

13. Brief summary of results / findings of research project:- Attached

14. What is social/economic relevance of the project

Research Project by Dr. M. G. Patil

1. **Title of the research project :**

   Structural electrical and magnetic property of tetravalent ion substitute Cd-Ni ferrites

2. **Name of the principal investigator :**

   Dr. M. G. Patil

3. **Department/Subject :-** Physics

4. **Name of funding agency:-** U.G.C

5. **Project sanction letter no:-**

   File No47-11680/10(WRO)date 06.3.2011

6. **Amount funding allocated by funding agency –**

   Rs.1,40,000/-

7. **Amount Received-** Rs 1,22,500/-

8. Whether project is ongoing or completed:-

   Completed

9. **Project starting date:-**

10. Project completion date:-

11. Objective of research project:-

Microwave assisted chemical deposition of NiFe2O4 powder and pellet formation. Characterization of NiFe2O4 powder and pellet using SEM, XRD,TEM, Ir etc techniques. Fabrication of different super capacitive configuration and their individual performance testing using current- voltage and charge-discharge studies to calculate specific capacitance, power density, energy density, electrode stability.Fabrication of electrochemical cell for "in situ" measurement of transmittance (electrochromism) and super capacitive charge using Na2SO4 electrolyte and design aspects such as size, separator, sealing etc. Fabrication of demonstrative super capacitive models (>200F/g) using of NiFe2O4 pellet multielectrodes and their performance testing.

12. Whether the objectives are achieved? :- Yes

13. Brief summary of results / findings of research project:-

Many metal oxide thin films including ruthenium oxide, iridium oxide, manganese oxide, cobalt oxide, nickel oxide, tin oxide iron oxide, pervoskites ferrites, etc have been applied in

supercapacitors [24]. These material have been prepared using chemical methods, the chemical methods involving the growth from solution are called as chemical methods. Here, a fluid surface precursor undergoes a chemical change at solid surface, leaving a solid layer.

14. What is social/economic relevance of the project

Research Project by Dr. A. D. Mhalungekar

1. **Title of the research project :**

   Commander in chief of Shivaji Maharaj- Kadatoji Alia prataprao Gujar- A Critical Study (1666 to 1674)

2. **Name of the principal investigator :**

   Dr. A.D.Mhalungekar

3. **Department/Subject :-** History

4. **Name of funding agency:-** U.G.C

5. **Project sanction letter no:-**

   File No23-1271/09(WRO)date 16.11.2009

6. **Amount funding allocated by funding agency –**

   Rs.30,000/-

7. **Amount Received-** Rs. 30,000/-

8. **Whether project is ongoing or completed:-**

   Completed

9. **Project starting date:-** 20.08.2009

10. **Project completion date:-** 20.08.2011

11. **Objective of research project:-** Attached

12. **Whether the objectives are achieved? :-** Yes

13. **Brief summary of results / findings of research project:-** Attached

14. **What is social/economic relevance of the project**

Research Project by K. Y. Mane

1. **Title of the research project:**

   Study of Mineral Deficiency in grapeyard with special reference from Miraj and Tasgon tahsil.

2. **Name of the principal investigator :** K.Y.Mane

3. **Department/Subject :-** Chemistry

4. **Name of funding agency:-** U.G.C

5. **Project sanction letter no:-**

   File No47-860/09(WRO)date 04.09.2009

6. **Amount funding allocated by funding agency –**

   Rs.1,33,000/-

7. **Amount Received-** Rs99,000/-

8. **Whether project is ongoing or completed:-**

   Completed

9. **Project starting date:-** 11.10.2009

10. **Project completion date:-** 28.04.2014

11. **Objective of research project:-**

    Grape cultivation in miraj and tasgon tahsil surveyed. Different symptoms of nutrient deficiency will be observed. The nature and texture of soil in grape field will be studied. The deficiency of macro and micro nutrient from solid sample will be studied. To aware a grape growers to use deficient nutrient to enrichment of the soil with organic and inorganic manure and lime

12. **Whether the objectives are achieved? :-** Yes

13. **Brief summary of results / findings of research project:-** Attached

14. **What is social/economic relevance of the project**

Research Project by Dr. A. S. Vhasmane

1. **Title of the research project :**

   Development of Textile Industry in Ichalkaranji, Dist Kolhapur (M.S.)

2. **Name of the principal investigator :**

   Dr. A.S.Vhasmane

3. **Department/Subject :-** Geography

4. **Name of funding agency:-** U.G.C

5. **Project sanction letter no:-**

   File No23-3009/11(WRO)date 25.1.2012

6. **Amount funding allocated by funding agency –**

   Rs.75,000/-

7. **Amount Received-** Rs 57,000/-

8. **Whether project is ongoing or completed:-**

   Completed

9. **Project starting date:-** 01.04.2012

10. Project completion date:- 03.02.2015

11. Objective of research project:-

To study the distribution and factors responsible for the textile development on the Ichlkaranji. To study the growth of textile industry in Ichalkarnji. To identify the problems of textile industry in Ichalkaranji. To study the prospect and the few remedies for the solving the industrial planning and for feature development of Ichalkaranji.

12. Whether the objectives are achieved? :- Yes

13. Brief summary of results / findings of research project:-

The study highlighted the distribution and factors responsible for the textile development in ichalkranji. It is studied that there is big growth in textile industry in ichalkranji because ichalkranji is the Manchester of Maharashtra and Number of Auto & power looms were started in Ichalkaranji. It helped to create employment and business in the town it has helped the people to develop their skills. The study identified the various problems faced by the textile industry. Problems like

unemployment, wages short of skilled employees, pollution, workers, owners problems electricity, child labour, problems of old looms standard quality of clothe problems problem of production land value problem and problem of power loom industries etc.

14. What is social/economic relevance of the project

The study is use full and beneficial to the society as there are problems in the textile industries in Ichalkaranji. The study high lights the solution to the problems so it has societal importance.

Research Project by Dr. E. B. Alwekar

1. **Title of the research project:-**

   contribution of Dakshin Maharashtra Sahitya Sabha in Litrary criticism.

2. **Name of principal investigator –**

   Dr. Ekanath Baburao Alwekar.

3. **Department/Subject –** MARATHI

4. **Name of the funding agency –** UGC.

5. **Project sanction letter no. –**

   file No. 23-2546/11(WRO) 11 Jan2012.

6. **Amount funding allocated by funding agency** – Rs.55000 (Fifty five Thousand).

7. **Amount received –** Rs.37500

8. **Whether project is ongoing or completed –**

   Completed.

9. **Project starting date –** 15-02-2012.

10. Project completion date – 25-02-2014.

11. Objective research project – Attached

12. Whether the objective are achieved – Yes

13. **Brief summary of results/findings of research project –** Attached

14. **What is social/economic relevance of the project –** Because of this project Marathi criticism will get contribution.

Research Project by Dr. S. I. Noorani

1. **Title of the project:**

   A Critical Study of Hindu-Sikh and Muslim Characters in Some Selected Historical, Political Indian English Fiction.

2. **Name and address of the principal investigator:-** Dr. S. I. Noorani

3. **UGC approval no and date:-**

   File No.23-1472/09 (WRO), Dated 13.03.2010

4. **Date of implementation :** 13.04.2010

5. **Tenure of the project :** Two years (13.04.2010 to12.04.2012)

6. **Total grants allocated :** 90,000/-

7. **Total grants received :** 75,000/-

8. **Final expenditure :** 96,568/-

9. **Objectives of the project :**

10. **Whether objectives :** Yes

The present study was planned with specific objectives. The objectives were achieved.

1. To unfold the Hindu-Sikh and Muslim relations revealed in the novels.

   The novels understudy portrayed Hindu-Sikh-Muslim characters and brought out the relations between the communities. In the beginning the relations were cordial but due to the historical, political events in the country they change their perspectives towards each other. The marriages between Hindu-Sikh & Muslim girls change the situation and there is positive transformation in the Hindu-Sikh characters. A few Muslim characters are shown good whereas some are shown evil and villainous characters.

2. To introduce the novelists art of characterization.

   Characterization is an art and skill. It is an important aspect of the novel. The novelists understudy portrayed complex characters.

Portrayal of character is complex process. It involved a lot of labour and skill on part of an author. The novelists reveals characters through dialogue, action and different devices. They presented the inner working of their characters. The characters are the victims of the historical and political events.

3. To examine the various characters in historical and political Indian English Faction.

   The characters not highlighted in the previous study. But the study highlighted the various characters in the historical, political novel understudy. Their personality traits and inner working of the mind are highlighted. Characters resemble the readers.

4. To throw light on characters. The characters will be analyzed at depth.

   i. The characters in the novel studied deeply their personality traits are highlighted. It studies thow novelist employ different traits. General, physical, personal and emotional. Characters are

flat, round and passive, active, static and dynamic.

5. How historical, political events affected the lives of characters -

   i. The historical, political events like freedom of the country, partition and national emergency affected the lives of characters. The characters are killed, women were raped, both men and women mutitated physically and psychologically. The novels portray transformation in all complexi cities.

Research Project by Dr. P. B. Kale

1. **Title of the research project:**

   Study of the Soil Problems due to over Irrigation and Heavy use of Chemical Fertilizers along the Krishna and Panchaganga Rivers belt from Shirol Tahsil District Kolhapur

2. **Name of the Principal investigator**:

   Dr. Pandurang Bandu Kale

3. **Department& Subject**: Botany

4. **Name of the funding agency**: UGC

5. **Project sanction letter No:**

   UGC File No. 47-132/12 (WRO) 18/02/2013

6. **Amount funding allocated by funding agency:**

   Rs.1,60,000/-

7. **Amount Received:** 1,15,000/-

8. **Project is completed**

9. Project starting date: From 18th March 2013 to

10. Project completion date: 18th March 2015

11. Objectives of research project:

a. Collection of soil samples from different sugarcane growing fields.

b. Determination of soil PH.

c. To study the Electrical conductivity.

d. Analysis of macroelements Nitrogen (N), Phosphorus (P), Potassium (K), Calcium (Ca), Magnesium (Mg), Sulphur (S), Sodium (Na)

e. To study the soil organic matter content

f. To create the awareness among the farmers about saline soil and its causes.

zddg. To maintain soil fertility for longer period. Soil is one of the natural resource. It is our duty to maintain its health and keep them healthy and hand over to the next generation.

i To prevent soil from hazardous effects of injudicious use of chemical fertilizers and over irrigation. To obtain higher crop yield by using natural resources like organic farming, which protects the environment. To protect the ground water from pollutants. To protect the beneficial soil microflora and physical fertile nature of soil. To suggest measures to reduce the problem of soil salinity in the region. To examine the trends in cropping pattern in agriculture. To

examine the progress in lift irrigation schemes in Shirol taluka.

12. Objectives are achieved :- Yes,

13. Brief Summary of results/ findings

We have presented and published paper entitled 'Study of the soil problems due to over irrigation and heavy use of chemical fertilizers along the Krishna and Panchganga rivers belt from Shirol Tahshil Dist. Kolhpur.' in National Conference on Environ. Biotech. ISBI 978-81-8498-412-6 organized by L. B. S. College, Satara on 29th & 30th Dec. 2014: Paper copy attached separately.

The soil analysis reveals that for certain samples pH values ranges from 7.9 to 8.4 as Moderately Alkaline soil. This category is found in Shirol and Shirti fields. This area is comparatively at higher elevation with respect to surrounding area. Hence, it is having natural drainage conditions to drain excess amount of irrigation water. Only three samples are falling in this category and showing alkaline tendency of soil than acidic.

Table No 2: Soil sample wise Results of pH and EC and Organic matter

Soil Sample	Fields	pH		EC (mS/cm)		Organic Matter (gm)	
		1nd Year	2nd Year	1nd Year	2nd Year	1nd Year	2nd Year
1	Shirol	8.30	7.11	2.65	1.48	1.4	1.6
2	Shirti	8.25	7.16	8.13	5.23	1.0	1.2
3	Kanwad	8.60	7.55	19.69	11.38	0.8	1.0
4	Ghalwad	8.53	7.99	19.70	11.99	0.8	0.8
5	Arjunwad	8.50	7.85	17.23	9.93	0.6	0.7

(Moderately Alkaline pH: 7.9 to 8.4; Strongly Alkaline pH : 8.5 to 9.0; Very strongly alkaline: above 9.0 and Less than 1.0 Normal values)

The pH value varies from 8.5 to 9.0, as Strongly Alkaline Soil. This category is found in Kanwad, Ghalwad and Arjunwad fields (Table No.2). EC values 2.00 to 4.00 ms/cm as slightly Saline category. This category is found in Shirol fields. EC values 4.00 to 8.00 ms/cm as moderately Saline category. EC values 8.00 to 16.00 ms/cm as high Saline category. This category is found in Shirti fields and only a few salt tolerant forage grasses can grow in such soil. EC values are above 16 are as very high saline soil category. This category soil samples are found in Kanwad, Ghalwad and Arjunwad fields. The salinity is quite very high which makes this soil unsuitable for agriculture. The organic content ranges from 0.6gm to 1.4gm. The soil samples from Shirol and Shirti show higher in organic content than

Kanwad, Ghalwad and Arjunwad soil samples (Table No.2)

Table No 3: Analysis of Soil samples for Macro-nutrient elements from Shirol, Shirti, Kanwad,Ghalwad and Arjunwad fields in first and second years

Sr. No	Macro-nutrient Elements	Shirol		Shirti		Kanwad		Ghalwad		Arjun	
		1st year	2nd year	1st year	2nd year	1st year	2nd year	1st year	2nd year	1st year	
1	Nitrogen (kg/hector)	163.07	128.58	181.88	200.70	191.29	213.25	166.20	97.22	181.88	
2	Phosphorous (kg/hector)	42.90	60.52	45.70	52.48	44.47	153.42	47.53	82.74	48.68	
3	Potassium (kg/hector)	952	431.0	672	560.00	840	1681.0	672	437.0	728	
4	Calcium (m. Eq.)	147.5	250.00	150.00	250.0	146.00	119.50	130.00	43.0	135.00	
5	Magnesium (m. Eq.)	17.50	30.83	25.75	26.72	21.17	28.78	22.09	417.34	17.84	
6	Sulphur (mg/kg)	2.00	7.70	2.1	7.73	1.00	7.60	2.8	8.04	3.00	
7	Sodium (m.Eq.)	24.57	24.00	108.70	90.11	108.70	101.04	108.70	95.03	108.70	

Each value is mean of three determinations

CONCLUSIONS AND SUGGESTIONS

The soils are unsuitable for agriculture in the study area in Knawad, Ghalwad and Arjunwad villages is certainly caused by the over irrigation and heavy use of chemical fertilizers. The population of the study area is mainly engaged in agricultural activities. This cultivated area is under intensive farming and is along belts of the two rivers Krishna and Panchganga. Unscientific agricultural practices and irrigation methods, overuse of agro-input, frequent flooding of plain areas have caused soil degradation in the study regions. This part is facing the problem of soil compaction and waterlogging. The soil in the region is mostly alkaline and saline with imbalance in essential elements. Lack of natural drainage, waterlogging, excessive use of chemical fertilizers and irrigation water, monoculture of sugarcane are some of the major causes for soil salinity and degradation of soil which makes soil unsuitable for agriculture. Some of the farmers are also doing Bandisth Sheli Palan/Goat farming **(Plate No. VII)** and Brick production activities from row materials like red soil, crushed sugarcanes from sugar factory (baggas), molasses; ash in their salty fields, such types of job oriented activities decreases the soil salinity (**Plate No. VII)**.

The soil management strategies suggested to farmers for reduction of soil salinity. Some of the farmers have adapted methods for the Leaching of salts by constructing proper drainage

systems and they have used balanced fertilizers after analysis of soils and even some farmers are using soil mulching method **(Plate No. VIIIe)** drip irrigation, organic farming. Farmers are using proper use of water for the crops i.e. drip irrigation. From the studied areas it is concluded that the soil salinity and waterlogging problems will be slowly decreasing by applying above methods. The salinity problem is more serious from Kanwad,Ghalwad and Arjunwad fields as compare to Shirol and Shirti fields. From the study it is concluded that after one year by the application of soil management strategies the soil salinity deceasing day by day, but requires more time period to recover the soil status.

Following reclamation measures are recommended for the study regions. The physical measures consist of scarping surface salt from saline patches, leaching and draining away of salts by rain and irrigation water and providing artificial drainage to affected area. These measures need to be practiced in the region on individual level by the farmers in the villages viz. Kanwad,Ghalwad and Arjunwad fields. Chemical measures include the addition of gypsum, sulphur and molasses to the affected soils in order to replace sodium in the clay complex by calcium. The use of gypsum is recommended in the villages viz. Kanwad,Ghalwad and Arjunwad fields. The green manuring of ‘dhaincha’ plant along with gypsum is useful in restoring physical condition and enriching the soil in nitrogen and

organic matter. Mulching reduces the moisture evaporation from surface soil and prevents salinization. Suitable crop rotation including salt tolerant crops has also proved successful. To overcome the problem of soil degradation, the proper measures, both for soil and water management need to be taken on priority basis. The awareness among the farmers to use the agricultural inputs cautiously must be created by organizing training camps, demonstration etc. The aforesaid site specific measures recommended will definitely help to reverse the process of soil degradation in the region.

In the study areas total 588 hectares of producible soil affected by salinity problem. Village wise affected soils in hectares are Shirol - 120, Shirti-88, Kanwad-105, Ghalwad-125 and Arjunwad-150 which are turned unfit for cultivation so as to all the farmers from these areas have submitted proposals to the Government of India for construction of artificial drainage system planes for sanction. Until now any system plan has not sanctioned. This information was published in the News paper Sakal on 29th December 2013 and again republished in the News paper Sakal on 04th November 2014 **(Plate No. IX – XII)**. All the farmers are waiting for Government sanction letter, but Government is not responding to this salinity problem.

4. CONTRIBUTION TO THE SOCIETY

The soil management strategies suggested to farmers for reduction of soil salinity. Some of the farmers have adapted methods for the Leaching of salts by constructing proper drainage systems and they have used balanced fertilizers after analysis of soils and even some farmers are using soil mulching method, drip irrigation, organic farming. Farmers are using proper use of water for the crops i.e. drip irrigation. From the studied areas it is concluded that the soil salinity and waterlogging problems will be slowly decreasing by applying above methods. The salinity problem is more serious from Kanwad,Ghalwad and Arjunwad fields as compare to Shirol and Shirti fields. From the study it is concluded that after one year by the application of soil management strategies the soil salinity deceasing day by day, but requires more time period to recover the soil status.

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Principal Investigator
(Dr. P. B. Kale)

Principal
(Dr. H. B. Patil)

PRINCIPAL
Vivekanand College
Kolhapur.

Co-Investigator
(Prof. S. B. Jadhav)

Co-Investigator
(Prof. S. A. Patil)

(Seal)

Research Project by Dr. S. P. Kamble

1. **Title of the project-**

   "Studies on Panchaganga river pollution near Ichalkaranji area. M.S.India".

2. **Name of Principal Investigator-**

   Dr. Kamble S. P.

3. **Department/Subject-** Zoology

4. **Name of funding agency-** U.G.C.

5. **Project sanction letter no.**

   File No 47-124/12 (WRO)

6. **Amount funding allocated by funding agency-**

   Rs 115000/-

7. **Amount Received-** Rs 90000/-

8. **Whether project is ongoing or completed-**

   Ongoing

9. **Project start date-** April 2013

10. **Project completed date-** Ongoing

11. Objective of research project

a) To determine physical chemical and biological characteristics of water

b) Evaluate the quality of surface water during different seasons of the years

c) Detection of any sign of deterioration in water quality

d) Identification in chemical and biological aspects

e) Establishing pattern in variation of water quality if any

f) Recognize microbial pollution if any

g) Establishing patterns if any in over all conservation of water

12. Whether the objectives are achieved?

13. Yes the objectives are achieved

14. Brief summary of results/finding of research projects.

The present research work entitled “Studies on Panchaganga river pollution near Ichalkaranji area. M.S. India" embodies the biotic and a biotic factor of panchaganga river Ichalkaranji Dist.

Kolhapur M.S. India. The Physico-chemical parameters recorded includes atmospheric temperature, temperature of water, pH, turbidity, conductivity, total dissolved solids, dissolved oxygen, free CO2, total alkalinity ,chlorides, hardness, sulphate ,BOD,COD,MPN, Phytoplanktons Zooplanktons, and Macrophyte. All these physicochemical and biological parameters have been assessed at monthly bases for 24 months (April 2013 to May 2015).There seasonal studies revealed that:

Surface water Temperature showed wide variation of22.4OC-25.2OCThe ambient temperature of panchaganga was lowest 21.2OC and highest was 25.2OC.The pH value ranged from minimum 7.6 to maximum 7.7 in both years. The free CO2 showed much difference in both the years it was minimum 8.4mg/lit and maximum 12.9 mg/lit. The alkalinity ranged from minimum 139mg/lit to maximum 152mg/lit. The Dissolved oxygen varied from minimum 4.7mg/lit to maximum 7.4mg/lit. The total dissolved values varied from minimum 1130 mg/lit to maximum 1758 mg/lit. The Total dissolved solids were low in winter and rainy season while higher in summary season.

The Turbidity values varied from minimum 18mg/lit. to maximum 41mg/lit. The conductivity values were higher in summary and this may be due to contamination of water by sewages domestic and Industrial waste. The Chloride values varied from minimum 127mg/lit. to

maximum 276mg/lit. The maximum values were seen in rainy and winter season which may be due to attribution of considerable amount of domestic sewage. Lower values of Chloride were observed in summary which may be due to deposition of soil. Total Hardness ranged from minimum 61mg/lit. to maximum 82mg/lit. The Sulphates value ranged from 116 to 134 mg/lit. Increase in the sulphate value was observed from November to May. The higher value of Sulphate during summary were also noted which may be due to attributed to the evaporation of water. The BOD values varied from minimum 0.1 to maximum 14.5mg/lit. The BOD values are higher in summary due to high rate of organic decomposition. The lower BOD values are seen in monsoon and winter may be due to decrease in temperature of water which in turn retarded the microbial activity. COD values varied from minimum 18.2 to 40.2mg/lit. The COD values were higher in summary and lower in winter and rainy season. The bacterial population was studied in the form of MPN the Panchaganga is considerably contaminated having highest bacterial population maximum 82/100ml at one site and minimum 32/100ml at other sites. The Zooplankton studies include Rotifers Cladocerans and Copepods. The rotifers were found in large numbers in Panchaganga river.

The Panchaganga river is is largely contaminated with microbes, human and animal wastes along with pathogens. These are also polluted due to

sewage, damping of debries, Industrial wastes etc. The polluted water causes harmful effect not only among humans but also animals plants and even agricultural land thus effecting the national economy.

Conclusively in the present study various a biotic and biotic characteristics of water Panchaganga were pointed out with the pollution status including the pollution indicator along with micro.zootic fauna,analyzed qualitatively as well as quantitatively as well as qualitatively.

15. What is the social/economic relevance of the project.

As we know water is one of the prime necessities of life we can hardly live for few days without water. But due to industralization and modernization man impact on nature is growing due to which the streams, rivers, lakes pond, pools are being affected. Most of the human population is inhibits around the banks of rivers and along the coasts, but from centuries these life line are being polluted and the stage has come were most of the rivers are on the verge of Eutrofication. Most of the agricultural land is on the river banks but due to dumping of industrial wastes, sewages, domestics garbages etc the rivers are being polluted and deterioration in water quality occures this same polluted water with heavy metals increased sulphates phosphates nitrates chlorides etc is used for irrigation from many decades resulting in damaging the fertility of the soil ultimately effecting the productivity of

agricultural products causing national loss. Not only this polluted water causes serious damages to human beings, animals, aquatic life, plants and the environment. Hence to create awareness in the society about the rivers and to protect, preserve and conserve these life lines this project was under taken and shortly this report will be submitted to the higher Indian Government authority for seeking help in restoration of the natural water bodies. Thus act locally and think Globally to save the human race and Environment by protecting the natural resources.

Research Project by Dr. V. A. Patil

1. **Title of the project-**
   'Studies on Disease and insect pest management of grapevine from Miraj & Tasgaon Tahasil & its importance in relation to grape yield.'

2. **Name & address of the principal investigator-**

   Dr. V. A. Patil

3. **Name & address of the institution-**

   S. M. Dr. Bapuji Salunkhe College Miraj.

4. **UGC approval no. And date -**

   File No. 47-151/07(WRO) Dt22/2/2008

5. **Date of implementation** - 1/4/2008

6. **Tenure of the project-** 2 Years

7. **Total grant allocated:-** 55000/-

8. **Total grant received –** 41000/-

9. **Final expenditures-** 27050/-

10. **Objectives of the project-**

1) To conduct the survey of agriculture land under the grape cultivation by actual visits. The data from government and non- government agencies will be obtained.

2) The diseases and insects-pests affecting the crop at various stages of development will be observed and collected.

3) The effect of climatic conditions on diseases and insect pests will be studied.

4) The conventional methods of diseases and pest management practiced in the area will be studied.

5) To study the use of biological methods to control diseases and pests to produce export quality grape.

11. WHETHER OBJECTIVES ARE ACHIEVED

– YES

12. ACHIEVEMENTS FROM THE PROJECT

Area under grape cultivation is increasing in Maharashtra especially in Nasik and Sangli district. To faith the money from export of grape and raisins (kismis) the residual effect of pesticides must be nil.

13. SUMMARY OF THE FINDINGS-

So some biological and conventional methods are recommended to reduce the intensity of pathogens as compared to pesticide use.

14. CONTRIBUTION TO THE SOCIETY-

Maharashtra is leading state in grape cultivation in India. The area under cultivation is more in Nasik and Sangli districts. Miraj and Tasgaon Tahsil has been a grape growing area because of dry and favorable climate. In this region grape grower have broad spectrum about spraying fungicide insecticide and bactericide to protect the grapevine from diseases and insect pests. The Indian grapes due to residual effects are rejected from western super markets, which is major problem in front of grape growers. So they are paying venture inspire in controlling the diseases and pests by biological and traditional methods.

Research Project by Dr. S. T. Ingale

1. **Title of the project-**

   "Assessment of medicinal plants from forest of some holy places in Hatkangle,Tahsil".

2. **Name & address of the principal investigator-**

   DR.S.T.INGLE

3. **Name & address of the institution -**

   D.K.A.S.C.COLLEGE, ICHALKARNAJI.

4. **UGC approval no. And date -**

   File No. 47-1661/10/ (WRO) dated 16/3/2011

5. **Date of implementation-** 1.4.2011

6. **Tenure of the project -** Two year

7. **Total grant allocated –** 1, 40,000/-

8. **Total grant received –** 1, 33, 000 /-

9. **Final expenditure-** 1, 42,749 /-

10. OBJECTIVES OF THE PROJECT-

To make a survey of mentioned localities. To make a critical analysis of medicinal plants. To make a inventory of medicinal plants resources of above localities. A systematic quantification of medicinal plants. To make a statically analysis (locality wise). Documentation of medicinal plants in the form of herbarium and photographic evidences.

11. WHETHER OBJECTIVES ARE ACHIEVED

– Yes

12. ACHIEVEMENTS FEOM THE PROJECT –

184 Medicinal plants are assed in above locality which are important medicinal sources.

13. SUMMARY OF THE FINDINGS –

In different holy places the above 184 medicinal plants are found to e having local as well as traditional medicinal importance; it is remedies for different ailments and curing the diseases.

14. CONTRIBUTION TO THE SOCIETY –

Project study is importance for Cultivators, researches, Students and common people who prepare and used the local medicine.

Research Project by Dr. M.G. Patil ,

Mr. A.R. Nimbalkar

1. **Title of the research project:**

   Characterization of Al, Cu doped & undoped ZnO thin film.

2. **Name of the principal investigator :**

   Dr. M.G. Patil, Mr. A.R. Nimbalkar

3. **Department/Subject :-** Physic

4. **Name of funding agency:-** INUP IIT Bombay

5. **Project sanction letter no:-**

6. **Amount funding allocated by funding agency –**

7. **Amount Received-**

8. **Whether project is ongoing or completed:-**

   Completed

9. **Project starting date:-** 31.01.2017

10. **Project completion date:-** 25.03.2017

11. Objective of research project:-

Nano crystalline semiconducting oxides are very important as a sensor material since size reduction and gas diffusion control are the main factors enhancing gas-sensing properties. Zinc oxide has attracted considerable interest as a nano structured material for thin film gas sensors in electronic noses. Zinc oxide (ZnO) is an interesting wide-band-gap semiconductor material with a direct band gap of 3.36 eV at room temperature and exciton binding energy of 60 meV. A major advantage of ZnO is that its properties can be readily modified and controlled by appropriate doping both by cationic or anionic substitution, and by post-growth annealing. Thin films of ZnO are utilized for a wide variety of applications, such as integrated optics, antireflection coatings, liquid crystal displays, piezoelectric, surface acoustic wave devices, electro- and photoluminescent devices, chemical and biological sensors. These thin films are synthesized using substrates via sol-gel method followed by spin coating technique. In order to study the different parameters like crystal structure, elemental analysis, morphological properties, and these thin films are required following characterizations. Viz. AFM, HRTEM, XPS, FE-SEM, Raman.

12. Whether the objectives are achieved? :- Yes

13. Brief summary of results / findings of research project:-

14. What is social/economic relevance of the project

In the present proposal we synthesized ZnO thin film via Sol-gel route. The thin film is synthesized by modified sol-gel route followed spin coating technique. The thin film of ZnO stands as one of the most popular materials for gas-sensing applications. Their use as a gas sensor, in which the surface conductivity changes in response to adsorbed gases, made them an ideal candidate in the field of surface science. In the field of gas sensing, it has been known that the electrical conductivity of materials varies with the composition of the gas atmosphere surrounding them. In order to carry out further study, these samples require AFM, FESEM, Pofilometer, XPS, and Raman Spectrometer characterization for structural analysis. The various parameters are to be optimized such as crystal structure, surface morphology, thickness of thin film samples.

Research Project by Dr. M.G. Patil ,

Mr. A.R. Nimbalkar

1. **Title of the research project:**

   Characterization of CuO thin films

2. **Name of the principal investigator :**

   Dr. M.G. Patil, Mr. A.R. Nimbalkar

3. **Department/Subject :-** Physic

4. **Name of funding agency:-** INUP IIT Bombay

5. **Project sanction letter no:-**

6. **Amount funding allocated by funding agency –**

7. **Amount Received-**

8. **Whether project is ongoing or completed:-**

   Ongoing

9. **Project starting date:-** 25.03.2017

10. **Project completion date:-**

11. **Objective of research project:-**

Among the various nanostructured metal oxides, Copper (II) oxide (CuO) nanomaterials with a monoclinic lattice and band gap range of 1.21–1.51 eV. This material has a great potential for different technological applications such as gas sensors, magnetic phase transitions, catalysts, and superconductors. These thin films are synthesized using substrates via sol-gel method followed by drop casting technique. In order to study the different parameters like crystal structure, elemental analysis, morphological properties, and these thin films are required following characterizations, Viz. AFM, HRTEM, XPS, FE-SEM, Raman.

12. Whether the objectives are achieved? :- Yes

13. Brief summary of results / findings of research project:-

14. What is social/economic relevance of the project

In the present proposal we synthesized CuO thin film via Sol-gel route. The thin film is synthesized by modified sol-gel route followed drop casting technique. CuO, a monoclinic crystal system, is a p-type semiconductor with a narrow band gap; such semiconducting properties make it a potential candidate for in gas sensors. Low operating temperature, a cost effective option, offers stability to the active sensing materials and becomes an automatic choice for sensing application. For metal oxides, including surface reaction by an adsorption of toxic

gas, the recovery process of the sensing materials depends strongly on the operating temperature. In order to carry out further study, these samples require AFM, FESEM, XPS, HRTEM and Raman Spectrometer characterization for structural analysis. The various parameters are to be optimized such as crystal structure, surface morphology, and thickness of thin film samples.