



Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

# Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

Date :

## Criteria 3- Research, Innovations and Extension

### Key Indicator 3.2- Innovation Ecosystem

#### 3.2.1 Institution has created an ecosystem for

innovations and has initiatives for

creation and transfer of knowledge

### 1. Initiatives for Innovative Ecosystem

Sr. No.	Initiatives by the Institute
1	Self-Cleaning Superhydrophobic Coating
2	Water Feeding Pots/Devices for Birds in the Garden
3	Development of Antidiabetic, Anticancer and Antimicrobial Drugs
4	Leaf litter composting in the college campus
5	Nesting for Birds
6	An Innovative Approach for Preparation of Eco-friendly Ganesh Idol for Ceasing Environmental Pollution



Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

Estb: 2012

## **Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,**

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in



Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Ref. No.

Date :

### **1.Self-Cleaning Super hydrophobic Coating**

The innovative technique named self-cleaning super hydrophobic coating assists to stop the damage the super hydrophobicity of the coating caused by various inorganic/organic contaminants and dust particles. The typical property of coating helps water drops to roll off quickly and pick away dust particles on the surface. Impacting water jet and rolling water drop, immersing in muddy water are some ways where the self-cleaning performance of super hydrophobic coating is studied. It is observed that the coating remained clean without any impression of muddy water drops. The current innovative research technique indicates that the prepared super hydrophobic coating was highly stable during self-cleaning test.

*Digram*



Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

Estb: 2012

# Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in



Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Ref. No.

Date :





Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

# Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

Date :



**Self-cleaning Fabric**



**Non-wetting Currency Note**





Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

# Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpac468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

Date :



Self-cleaning Window Glass

## 2. Water Supply Devices for Birds and Glass fish aquarium





Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

Estb: 2012

## Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in



Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Ref. No.

Date :



Water Supply Devices for Birds: Birds need water just as much as they need food. It is very difficult for birds to find water in the wild especially in the summer season. Students of Department of Zoology prepared water supply devices for birds. These devices were lodged in the campus of our college  
Glass fish aquarium: Management and maintenance by students

### Glass fish aquarium: Management and maintenance by students





Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

Estb: 2012

## **Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,**

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in



Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Ref. No.

Date :

Students of Zoology Studied Management and maintenance of Aquarium by constructing various Glass Fish Aquariums. This innovative idea enriched knowledge of students regarding different varieties of ornamental fishes and their maintenance by starting their part time business.



Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

## Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

Date :

### 3. Development of Antidiabetic, Anticancer, Antifungal and Antimicrobial

**Drugs** Department of Chemistry has taken initiatives of discovering various Antidiabetic, Anticancer and Antimicrobial drugs found in the medicinal plants. This initiative has collected the medicinal plants named *Mappia (Narkya)*, *Culinary (Turmeric)* *Ocimum Basilicum (Tulasi)* These selected plants contain a good amount of drugs in relation to antidiabetic, anticancer and antimicrobial properties. The future initiative will focus on developing extraction technology for therapeutically drugs.

#### ***Mappia (Narkya):***



***The Mappia (Narkya) plant has medicinal values and is used in the treatment of cancer.***





Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

Estb: 2012

## **Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,**

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpac468.cl@unishivaji.ac.in



Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Ref. No.

Date :

### **Garcinia Indica (Kokam Fruit):**

#### **Garcinia Indica (Kokam Fruit):**



A polyisoprenylated benzophenone in fruit rind has antioxidant anti-cancer and anti-ulcer properties.

### ***Ocimum Basilicum (Tulasi):***



Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

## Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

Date :



**Survival of lung cancer cells can be reduced by using Ocimum Basilicum(Tulasi).**

Fungal inhibition: The essential oil of leaf and/or terminal shoot is effective against a large number of species including *Lactiplantibacillus plantarum* and *Pseudomonas* spp. The essential oil of leaf and/or terminal shoot is effective against a large number of species.



Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

## Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

Date :

### Culinary (Turmeric):



*Survival of lung cancer cells can be reduced by using Ocimum Basilicum(Tulasi).*

4. Leaf litter composting in the college campus. Objectives of the practice: Composting leaves is a terrific way to recycle and create nutrient rich garden soil. The benefits of leaf compost are numerous. The leaf litter compost increases fertility of soil. It also enhances soil porosity. The leaf litter compost makes a dark rich, earthy organic matter which retains soil moisture. Leaves are often referred to as nature's nutrient recyclers. Context: The college has spacious and well grown garden, having as many as 300 trees, shrubs and herbs. Lots of leaf litter is produced daily. Cleaning the daily leaf litter is tedious routine. As a green practice college has decided to produce leaf litter compost as a valuable source of soil nutrients. The practice: The amount of daily fallen leaves is estimated. To produce leaf litter compost the rectangular cement and brick tanks are constructed around the trees. The fallen leaves are directly collected in piles by sweeping the dry fallen leaves in to the piles. The mulching is done by adding cow dung slurry and water in between layers of dry leaves. Some liquid urea is also





Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

## **Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,**

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpac468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

Date :

added to enhance aerobic microbial action. The pile is covered with jute cloth. Periodically the leaf pile is stirred and water is added to maintain moisture level. The done leaf litter is harvested periodically after every 45 days and used for garden plants. Evidence of success: This extensive practice of composting of leaf litter suggests that leaf litter can be efficiently managed by converting it into manure. Sustainable management and utilization of leaf litter can be successfully applied in home gardening. Managing leaf litter by composting proposes an alternative approach to waste management since the leaf litter will neither be burnt nor be land filled. This also helps in reduction of air pollution produce by leaf litter burning. Different types of nutrient rich compost prepared by leaf litter can be further used for organic farming which results in increased productivity of crops. Leaf litter utilization and management will help in making the college campus areas cleaner and greener. Resources required: Leaf litter, cow dung manure, jute cloth, water, human recourse for collection of leaf litter, earth worm culture, vermicompost.



collection of Leaf litter for Vermicomposting from Campus by Students.





Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

## **Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,**

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpac468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

**Students while watering the Vermicomposting**

Date :

## **5. Nesting for Birds**

The house birds is one of the first birds that most of us recall from our childhood days. They used to reside in colonies in nearly every house in the neighbourhood, as well as public locations like bus bays and railway stations, surviving on food grains and tiny worms. For many of us, the house birds evokes many wonderful memories. Unfortunately, these birds are fast becoming extinct, and their populations are rapidly declining. Date To raise awareness and protect the house birds, every year on March 20 World Birds Day is observed. The first World Birds Day was organized in 2010. HistoryThe Nature Forever Society of India and the Eco-System Action Foundation of France came up with the idea for World Birds Day. The idea was to dedicate a day for the house birds in order to spread the word about its protection. Theme- "I Love Birds" is the theme for World Birds Day. It was inspired by the hope that more people will recognise the importance of the human-birds interaction. The theme's major goal is to emphasise people's passion for birds and the seemingly tiny things they do to make a great difference in the birds' lives. Significance – The day is observed to raise awareness on the plight of the birds, which is on the verge of extinction. World Birds Day also aims to bring individuals together who have a passion for birds and appreciate their beauty. House birds were a common sight in our backyards, and they were easy to see. However, as we have lost touch with nature and biodiversity in recent years, spotting house birdss in the city has become more difficult. Comments – The purpose of World Birds Day is not only to honour the event for a day but also to use it as a platform to emphasise the importance of birds



Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

## Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

Date :

conservation and urban biodiversity. To aware and to conserve the tiny bird the birds day was celebrated by Raje Ramrao College, Jath, Zoology department and IQAC for this day. To give breeding, nesting ground as well as food, water with the help of waste wooden boxes, plastic bottles the nest, feeder was provided to birds by prepared by student.

### Hanging the nests for Birds



Hanging the nests for Birds



Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

## Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

Date :



**Participated Students of Hanging the nests**

**6. An Innovative Approach for Preparation of Eco-friendly Ganesh Idol** for Ceasing Environmental Pollution Objective of Research: - In Hindu culture, Ganesh Utsav is most popular festival and celebrated ever-year in Maharashtra. In this festival, the main concern is chemical-based preparation of Ganesh Idol and which causes significant amount of several types of environmental pollution after its Visarjan. This is a very serious problem which ultimately affecting human-life too. Therefore, we need to find an alternative solution for this problem in order to balance our eco-system as well as to preserve our culture. In chemical-based method of preparation of Ganesh idol involves used of plaster of paris (POP), binding chemicals, cement, plastic materials, etc. In



Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

## **Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,**

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

Date :

addition to this, required decorative materials contains hazards chemical-based colors, stainer, turpentine, etc. This is a costly and time-consuming method. To order to solve this problem, we have developed an innovative approach for preparation of eco-friendly Ganesh idol for ceasing environmental pollution. This is totally chemical free method would not produce any type of environmental pollution. In this method, Ganesh idol is prepared from cow-dung and natural guar-gum powder. In addition to this, we add turmeric-powder as an antibacterial agent to avoid production of fungal infection. We use natural food grade colors for decorating Ganesh idol. We believe that, our method is completely Green and efficient way to cease environmental pollution. Problem: - In Hindu culture, Ganesh Utsav is most popular festival and celebrated ever-year in Maharashtra. In this festival, the main concern is chemical-based preparation of Ganesh Idol and which causes significant amount of several types of environmental pollution after its Visarjan. Material and Method: - Food grade colour, cow-dung and natural guar-gum powder





Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

**Vitthal (Daji) Patil Arts, Commerce & Science  
Mahavidyalaya, Salgare,**

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.

Date :

Chemical free preparation method Mixer of cow dung, Guar gum,  
turmeric powder

*Water addition and ratio optimization of above contents*

*Ready Paste*

*Pour the above paste into specific or desired mould*

*Take out from mould and dry for one day Dye*

*it with food grade colours made of corn, beet root, turmaruic powder  
etc.*



Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

Estb: 2012

# Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in



Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Ref. No.

Date :



Activate V

**Evidence of success:**



Shivaji University Kolhapur affiliated,  
Shri Siddheshwar Shikshan Prasark Sanstha, Salgare

## Vitthal (Daji) Patil Arts, Commerce & Science Mahavidyalaya, Salgare,

A/p.Salgare, Tal : Miraj, Dist : Sangli, Pin 416 418.  
Mob: 9970544740, E-Mail : vpacs468.cl@unishivaji.ac.in

Chairman **Shri.Tyagraj S. Patil** Mob: 9325684335

Estb: 2012



Ref. No.


Date :



- Get rid of from chemical-based Ganesh idol
  - Economical and time saving method.
  - Decorative food grade colours would be served as food for marine lives.

### Conclusion

- Excellent Eco-friendly approach.Cease environment pollution
- The student sale the ecofriendly Ganesha in market
- The student also told the importance of ecofriendly Ganesha.
- The awareness of ecofriendly Ganesha as well as the side business of cattle farming was also created in peoples

  
I/C PRINCIPAL  
VITTHAL (DAJI) PATIL  
Arts, Commerce & Science  
Mahavidyalaya, Salgare