ABSTRACT BOOK

INDIAN SCIENCE & ENGINEERING FAIR (INSEF)

INSEF Regional Fair – Mangalore

September 6th & 7th, 2013

Conducted By

The Yenepoya School, Mangalore

http://www.theyenepoyaschool.com/

in association with

Science Society of India

http://sciencesociety.in

on September 6th & 7th, 2013 at

The Yenepoya School

NH 17, Jeppina Mogaru Mangalore – 575 009

(The abstract text provided is exactly as submitted by the participants)

Index

Project Code: BIO-01 Online ID:108

Title: EVALUATION OF BUCHANANIA LANZAN LEAF MUCILAGE AS HERBAL HAIR CONDITIONER

Subject Category: Biology

Name: MEGHANA D Std: 9

Guide: Dr. RAMPRAKASH. D.

School: VIVEKANANDA ENGLISH MEDIUM SCHOOL,TENKILA, PUTTUR.

ABSTRACT:

Achieving great-looking hair without synthetic chemicals is not difficult. The purpose of the hair conditioner is to temporarily improve the cosmetic appearance of the hair. Herbal hair conditioners help to make the hair more manageable and often impart a smoother and softer texture. Aim of this study is to formulate and evaluate the leaf mucilage of Buchanania lanzan Spreng. as an herbal hair conditioner so that traditional knowledge and a natural product is scientifically studied. The freshly collected leaves were shade dried, then finely powdered and were mixed separately with distilled water to obtain different concentrations viz. 5%, 7.5% and 10% (w/v).The aqueous extracts (mucilage) were evaluated by conducting several physicochemical and performance tests. Common properties of hair conditioners such as wet combing, dry combing, gloss (shine) and moisturisation property were also studied using swatches of hair tresses. 10% (w/v) concentration sample of B. lanzan leaf aqueous extract (mucilage) was found to have all common properties of hair conditioners. It was effective as a herbal hair conditioner with good hair texture, moisture improvement, easy to comb, improved gloss (shine) when compared with 10% (w/v) reference sample of commonly marketed herbal hair conditioner. Hence, B. lanzan can also be considered as a very good conditioning agent in commercial herbal hair conditioners.

Project Code: BIO-02 (Team) Online ID:113

Title: Devolopment of natural product to control blood glucose level using roots of Hibiscus rosa-sinensis

Subject Category: Biology

Name: SHREERANJAN SHARMA.N & SAMPRITH RAO.P Std: 9TH

Guide: VASANTHI KEDILA

School: SRI RAMAKRISHNA HIGH SCHOOL,PUTTUR

ABSTRACT:

In this project we have prepared an eco-friendly natural diabetical syrup from Hibiscus rosa-sinensis root and demonstrated its diabitical efficiencies. Commercial products cause lot of problem to human health and synthetic diabitical product cause side effect to human beings. But our natural, eco-friendly diabetical product is safe to all and environment. Hibiscus rosa-sinensis is a plant growing in southern part of India and has also traditionally been used to

decrease the blood glucose level . According to traditional knowledge Hibiscus rosa-sinensis is not attacked by Microorganism, however no attempt was made to reduce the blood glucose level using Hibiscus root decoction. So, we decided to investigate scientifically the diabetical properties of Hibiscus rosa- sinensis diabetical syrup from it.

We took 25 roots of Hibiscus rosa-sinensis (250gms) and crushed it well and added 900 ml of water and filtered it to get 1 litre of the solution.

Proper Viscosity, surface tension, PH and EC of the extract is maintained. The rate of our product is Rs. 5/- per liter. We are able to decrease blood glucose level in artificial media within 15 minutes from 16.4mg/100ml to 14.0mg/100ml.

Thus we have an eco-friendly diabetical product which can be used to decrease blood glucose level.

Project Code: BIO-03 (Team) Online ID:116

Title: A novel product to control Leucoderme using the seeds of Psroralea Carylifolia

Subject Category: Biology
Name: Manoj Shetty K & Sarvesh Raje Urs Std: 9TH STD
Guide: VASANTHI KEDILA
School: SRI RAMAKRISHNA HIGH SCHOOL,PUTTUR

ABSTRACT:

In our project we have prepared an eco-friendly natural cream from Babch seeds (Psoralea carylifolia) to cure Leucoderma, a skin problem from ancient times.Our grand parents used the Psoralea carylifolia seeds powder to reduce the white patches due to Leucoderma.So we thought to have a scientific study of P.c.plant which is common in western ghats.growing for about 40 ft hight.

To prepare 1kg of our product , we took 500 gram of Babchi seeds and 500 gram of Tamarind seeds. Then we kept the seeds in water about Four hours. After that we added 1litre of water , crashed it well to get a paste. Thus a good old product is prepared by us for scientific study and use it against Leucoderma.

Proper EC, pH of the product maintained. Our product is eco-friendly ,cheap, safe, easy to prepare and use. The active components of the products is identified by HPTLC test, compared it to the other commercial products.

Project Code: BIO-04 Online ID:119

Title: A novel Antiseptic ointment using Mangifera indica leaves
Subject Category: Biology
Name: Sanjana Puttur Ramesh Std: 9th std
Guide: Vasanthi Kedila
School: Sri Ramakrishna High School Puttur D.K

ABSTRACT:

The aim of my project is to apply the antiseptic ointment on wounds.
Mango is the vernacular name of Mangifera indica. It is a well-known tropical fruit. Mango tree is found wild in India and cultivated varieties have been introduced to other warm regions of the world. Mangifera indica commonly used herb in Ayurvedic medicine. Its leaves are used as medicine.
We can prepare a Antiseptic ointment to cure the wounds. By appling this ointment wounds will cure fast. This can be used for various kinds of wounds.
I collected some Mango leaves and grinded it by pouring water to prepare a juice. Then I boiled the juice by adding 100 ml of coconut oil and 50 grams of mango leaves powder for 15 minutes till the water content evaporates. Then I poured this solution to the 25 grams of honey wax. Then I kept it to dry for sometime.Then only it converted into the ointment
My antiseptic ointment is eco-friendly, good and helpful for the society. It doesn't cause any side-effects and it is helpful for the future.

Project Code: BIO-05 Online ID:122

Title: CARDBOARD FROM BRIDELIA - RETUSA
Subject Category: Biology
Name: SHREE GOWRI RAO ULLAL Std: 9
Guide: VASANTHI KEDILA
School: Sri Ramakrishna High School,Puttur

ABSTRACT:

Man interfere the nature from his activities & cause harm to himself. These days earthquakes, floods have increased & houses & buildings get destroyed. Hence there is more expenses for the building of new houses fully using cement. Instead of it, it is better to build houses using cardboard,where ever possible.prepared using naturally available materials like Bridelia retusa. So I prepared cardboard from Bridelia retusa. I took 100gms the bark of Bridelia retusa ,crushed it, added starch to the paste of Bridelia retusa. Heated it & added small quantity of ethyl alcohol. Then pressed it & allowed it to dry for 4 days in sunlight.Thus I got a small hard reddish brown material just like cardboard.The HPTLC Test, Phytochemical analysis of the plant paste showed the supporting data for the use of Bridelia retusa to the preparation of superior cardboard. My product is biodegradable, less expensive than commercial cardboard, & can be easily prepared by all at their home.The fibre with plenty of prismatic crystals attached to it can be used to prepare cardboard using waste materials.

Project Code: **BIO-06** **Online ID:141**

Title: HERBAL HAIR GEL AS AN ALTERNATE FOR CHEMICAL HAIR GELS: FROM CORDIA OBLIQUA, ALOE VERA AND ROSA SINANSIS

Subject Category: Biology
Name: NISHANTH.SHASTRY Std: 9
Guide: SAYED NISSAN
School: VIVEKANANDA ENGLISH MEDIUM SCHOOL,TENKILA, PUTTUR

ABSTRACT:

HERBAL HAIR GEL AS AN ALTERNATE FOR CHEMICAL HAIR GELS:
FROM CORDIA OBLIQUA, ALOE VERA AND ROSA SINANSIS
The hair gels available in the market are prepared by various chemical process & contains ammonia & alcohol , which used on a continuous run causes dandruff , scalp breakage ,split ends, premature greying , hair fall, dry hair and its' natural oils strips off. Most hair Gels contain a plastic pvp /va copolymer that can damage the hair and the lungs when inhaled. Cationic polymers are one of the main functional components of hair gel. The positive charges in polymer cause it to stretch, making the gel more viscous. Hair gels resist natural protein conformations and allow hair to be styled and textured. This is because the stretched-out polymer takes up more space than a coiled polymer and thus resists the flow of solvent molecules around it. The positive charges also bind the gel to the negatively charged amino acids on the surface of the keratin molecules in the hair.

This project aims at preventing such problems. Herbal hair gel nourishes hair while holding hair in place .CLAMMY CHERRY SEEDS have stretched structure which helps in holding the hair in a particular style (as it has viscosity above 1). ROSA SINANSAIS LEAF helps in preventing premature greying and nourishes the hair. ALOE VERA controls dandruff and it also smoothens the hair. The gels derived from these herbs are mixed in the proportion 2:6:2 (15% Rosa sinansais: 60% Clammy cherry seeds: 15% Aloe Vera) and boiled, during this process 10% of agar agar (China grass) is added to get the texture of the gel. Preservation is made use VETIVARIA ZIZANIOIDES OIL also acts as perfume for the gel.
Comparison was made between chemical gel and herbal gel with three types of hair strands and continued this experiment for 25 days till date. Difference was found between the strands of hair. Strands which were set by chemical gel got rough it was difficult to comb it & the strands set by herbal hair gel were intact & it was easy to comb.
Viscosity test of herbal hair gel concludes that it can be used as an alternate for chemical hair gel. It is cheaper than the chemical gels. It has good and healthy fragrance .It can be preserved for several months and has no side effects.
References: Dr .G.N.Chauhan & Dr Piyush Trivedis' Natures Wonder Plant Aloe Vera & a Bulletin from Central Institute of Medicinal And Aromatic Plants, Lucknow On Vetivaria Zizanioides.

Project Code: BIO-07 Online ID:161

Title: Treatment of Luekoderma using Ficus recemosa leaves
Subject Category: Biology
Name: KARTHIK BHAT A Std: 11
Guide: Vasanthi K
School: Vivekananda PU College,Nehrunagar, Puttur, D.K

ABSTRACT:

Leukoderma is a skin disorder, which is identified by the white patches that form in small areas but enlarge on the body over a period of time. The skin disorder is more of a social problem than a disease because the skin condition affects the appearance of the individual turning the skin white. And its allopathic treatment such as phototherapy is not only expensive but also has a number of side effects. Many a times the synthetic drugs can not cure completely the disorder as well cannot be used for children below 10 years of age. So there is a need for a safe alternative treatment using natural products for Leukoderma.
India has a rich heritage of traditional medicine including homeopathy and ayurveda. Many diseases could be cured using treatment with natural plants or plant products. In this project the traditional way of treating leukoderma is studied. Ficus racemosa plant fruits and leaves can be used for curing Leucoderma in a simple way. It can be treated by re-pigmenting the affected areas. The active compound responsible for re-pigmentation is Psoralen (C11H6O3). Psolaren is abundant on Ficus leaves and was tested by Chromatography. Extraction of psolaren rich fraction is also studied. Many allopathic drugs also use Psoralen for the treatment of Leukoderma. Hence, the Ficus plant which is commonly present in this region as well in many other regions can be an effective cheap natural source for extraction of Psolaren. In India and in many other countries, alternative natural remedies are preferred for disorders like Leukoderma.

Project Code: BIO-08 (Team) Online ID:162

Title: Fiber from weed
Subject Category: Biology
Name: Ayesha Fahima MS & Deepika C N Std: 9
Guide: Sadhana Hebbar
School: Sudana High School, Nehrunagar, Putur

ABSTRACT:

We have a lot of natural fibres available like cotton jute and sisal etc. We thought of using a very common weed growing in the wasteland- the communist plant or the Eupatorium.
The stem of this plant is used in making the fibres. We have soaked the stem in water for a week. The inner portion is got by removing the outer portion of the stem which becomes soggy. The fibres thus got are sun dried for a week or dried in the oven at 40 degrees for 30 minutes. The threads got are processed using limestone.
These threads can be woven to get the ropes of different thicknesses. The strength of the ropes has been tested against the ropes of jute and coir available in the market. Various weights have

been suspended from the ropes to test its strength.
These fibres can be used in the manufacture of doormats, bags, telephone mats and window screens. Colours and patterns can also be added to make it attractive and increase its durability.
It is a very common unwanted plant growing in our area which cannot be easily removed. So by using this plant for the preparation of ropes, we can say we are trying to solve the problem of weed removal and also make a utility item.

Project Code: BIO-09 (Team) (Jr) Online ID:163

Title: Heel healing cream
Subject Category: Biology
Name: Anjaki. K & Sanjana P Std: 8
Guide: Prathima NG
School: Sudana High School Puttur

ABSTRACT:

Normally, people suffer from cracked feet in winter and in our area which is very rainy people suffer here from fungal infection of the toes. Various application are available in the market which are usually chemicals and some people may be allergic to these chemicals also. So we thought of preparing some cream which helps in reducing both the problems. People in our area use roots of certain plants to relieve the pain and the cracks. So we thought of making use of this ancient knowledge for the preparation of the cream. My uncle throws the bee wax after removing the honey. So we combined both these to make our cream.
We have used root extracts of Cyclea peltata and wild Ixora plant in coconut oil. After filtering the oil with the extract, we have taken 70gm of bee wax heated to melt the wax. The mixture is stirred regularly during the melting process. After complete mixing of the oil and wax it was poured into a container. It is allowed to cool for 30 minutes. On cooling, we get a cream which can be directly applied to the cuts, wounds, cracked heels or any other injured part of the human body.
We have got a comparative testing of our product against the commercially available cream and found that our product better in pH value, toxicity level and besides it does not contain any harmful chemical substances.
This cream is effective in reducing the pain of cuts and wounds besides the healing property. It is comparatively more cheaper, effective and less harmful than the creams available in the market.

Project Code: BIO-10 (Team) Online ID:165

Title: Berry colours
Subject Category: Biology
Name: Ashuthosh Noojibail & Amoghversha K Std: 9
Guide: Prathima NG
School: Sudana High School Puttur

ABSTRACT:

Graying of the hair is a problem faced by many old and young people. The use of hair dye is a very old one. For ages people have been using henna for the hair. Now a days a lot of chemical dyes are available in the market which give various different shades of black, brown or other colours. But these will result in harmful effects on prolonged use.
We have made a natural hair dye that can be prepared at home whenever required. To make the hair dye we have used gooseberry fruits, fruits and bark of blackberry, henna leaves and the stem bits of banana. All the ingredients are taken in an iron vessel along with water and kept overnight or soaked for 6-8 hours. This mixture turns black and is then filtered. The filtrate is boiled for 15-20 minutes and allowed to cool. The filtrate will be brown in colour if iron vessel is avoided. This mixture is applied and left on the head for 15-20 minutes. For better results it can be kept for a longer time. Oil should be removed from the hair before application for better results. This product is harmless. It also gives a shine to the hair with regular use. We have tested this product against other natural and chemical hair dyes by testing the pH and by chemical analysis.

Project Code: BIO-11 (Team) Online ID:177

Title: Antiseptic cream from Cocus nucifera endosperm

Subject Category: Biology
Name: Abhilash K. George & Tusshar M. Shetty Std: 9
Guide: Krishna Prasad
School: Indraprastha Vidyalaya, Uppinangady

ABSTRACT:

Cocus nucifera, a tall branch less mono cot plant found along the coastal regions of India. Liquid endosperm of coconut is a rich source of sugars, minerals, electrolytes and retains its basic properties even under high temperature. In olden days the coconut water in its solidified form was used to heel the cuts and wounds effectively. But nowadays we discard it as a waste.

Methodology:
1 Ltr. of tender/mature coconut water is heated about 1hr. The dark golden brown paste obtained is very aromatic and soothing. It is tested for antibacterial property in the research lab Yenepoya, Mangalore.

Result:
Staphylococcus aureus cultured in tryptone soya agar along with 50ml of coconut water paste.After 24hrs of incubation it showed growth hinderance. 35mm zone of inhibition was seen in agar plates.
Shelf life of the samples were observed for 3 weeks and was noted that no change occurred in the colour, odour, texture.
pH, conductivity, viscosity, surface tension of the sample is measured in the chemistry lab of SDM college Ujre.
Active components of the product were analysed in the research lab of NITK, Surathkal.

Wound healing promoters present in the endosperm:
1. Reducing sugars-Gluing material

2. Protein–For fibroblast proliferstion collegen and blood vessel formation
3. Arginine-Helps in dialating blood vessels, activates white blood cells
4. Glutamic acid–Glucose formation and amino acid synthesis
5. Copper-Accelerate wound contractian and closure.
6. Iron-oxygen transport, collegen production

Hence this simple and cheaper ointment is sterile, antiseptic, antibiotic, non toxic and eco-friendly product.

Project Code: BIO-12 (Team) Online ID:179

Title: INDELIBLE INK FROM TERMINALIA CHEBULA
Subject Category: Biology

Name: Prathiksha Bangera & Anagha.M.S Std: 9
Guide: vasanthi khedila
School: Shri Rama krishna high school kombettu puttur

ABSTRACT:

Ink is a vital educational writing/drawing material which is used to keep records since ancient civilization. A variety of inks available in the market are usually prepared by hazardous chemicals. Extensive research has been carried out to develop Eco-friendly and non toxic ink from natural resources.

Indelible ink is used in the time of election for identification which is made from sliver nitrate. We thought of making an indelible ink from terminalia chebula. As it is Eco-friendly and herbal and does not cause any side effect.

Terminalia chebula, a giant tree growing abundantly in Western Ghats of India .Terminalia chebula tree yields smallish ribbed and nut like fruit which are picked when still green. We took the seed of terminalia chebula and crushed it we kept in water for half an hour and grinded it with leaves of lawsoniainermis. Then we kept it in an iron bowl for 12 hours. After that we added it glycerin and small amount of acetone.

We tested it as indelible ink .we also tested it to the artificial hair and it became black.

It can easily prepared in home.It can also be used as hair dye. It is Ayurvedic/traditional medicine so it is non toxic and safe.

Project Code: BIO-13 (Team) (Jr) Online ID:184

Title: Rubber by millk
Subject Category: Biology

Name: DHANUSH P.R & PRATHIKRAJ.J.S Std: 7
Guide: T.RAMAKRISHNA NAIK
School: VIVEKANANDA ENGLISH MEDIUM SCHOOL PUTTUR

ABSTRACT:

Ingredients: 1] Milk 2] Vinegar 3] Rubber tree milk

How to do: Take a bowl and pour half liter of milk and boil the milk for one or two minute. Put vinegar (5 ml) and mix it well for a few seconds. Pour Rubber tree milk (5 ml) and keep the mixture for a day in sunlight.

we can use this rubber as alternative product of rubber. We can use this rubber in the rubber industry for the production of rubber products.since it is bio degradable it is eco - friendly and on burning it won't give out any harmful gases into atmosphere.

Project Code: BIO-14 (Team) (Jr) Online ID:186

Title: Herbal gum based ball-A prevention of tooth decay
Subject Category: Biology
Name: Bhavana Kurup & Zareen Rahman Std: 6 std
Guide: Jyothi B
School: The Yenepoya school, Jeppinamogru

ABSTRACT:

Toothache is one of the most common health problems affecting all age groups. It is caused by caries forming bacteria buildup due to excess carbohydrate in daily diet and poor oral hygiene. Toothache is treated by antibiotics and subsequently by caries fill up depending on the severity of the problem. Toothache causes unbearable pain making it difficult for young children to tolerate the pain. Antibiotics should be prescribed by the dentist that needs an emergency visit to the clinic, which cannot be affordable in odd hours of the day. Over-the counter pain killers cannot be given to children hence there is a need to develop an alternative treatment using natural remedial measures known to mankind before the advent of modern drugs.
In Udupi region, flower of a small herb called Hemmugalu (Kannada) belonging to the sunflower family (Asteraceae) is used for toothache traditionally. Botanical name is Acmella oleracea. The floret is used to relieve the pain and subsequent usage to contain the toothache. Literature shows that leaves and flower head (aster) contain analgesic, antifungal and antibacterial agents. Hence, plant floret was tested against the dental caries causing bacteria, Streptococcus mutans. Florets showed strong inhibition of Streptococcus mutans growth. Based on this finding, a product based on this plant flower in edible gum was prepared. Benefits include: rapid relief from toothache in a natural and safe way. It can reduce buildup of carries causing bacteria in oral cavity and its juice has the ability to strengthen body immune system.

Project Code: BIO-15 (Team) (Jr) Online ID:205

Title: Natural lip gloss from beetroot
Subject Category: Biology
Name: Samah Assiya Abbas & Fathima Amreen Std: 6
Guide: Shubhavathi Alva
School: The Yenepoya School, Jeppinamogaru

ABSTRACT:

In this modern era cosmetics have become integral part of the lifestyle and cosmetic industry is

one of the major industries with several novel products aiming at safeguarding the users against any inadvertent health effects. Cosmetic market is so vibrant that many products are just a chemical decoction of coloring and texture giving products. Lipstick contains toxicants like lead nickel, copper, chromium, etc., and when applied, these toxic substances are absorbed by the lips and by the pigment of skin reacting with other chemicals in the environment causing rashes on the lips. Hence, there is a need to develop safe lipstick for the daily use. In this project, we have successfully developed a natural lip gloss using beetroots that are well known to the mankind as safe edible tuber. The most distinguishing characteristic of beetroot is bright red color due to pigments called betalins. For this, cleaned beetroot (500g) were finely sliced and boiled with water until beetroot were colourless. The contents were cooled, and filtered using a muslin-cloth. The solution was boiled to evaporate the water content and finally a red coloured jelly substance was formed. To this, one drop each rose water for fragrance and glycerine for smooth texture were added. The lip gloss was tested for sugar and mineral contents. Advantages are; it is non-toxic, natural and hence, will not cause allergic rashes but provide health benefits to skin. For creating different shades, natural pigments from blue berry etc., can be used.

Project Code: BIO-16 (Team) Online ID:209

Title: Salt from banana leaves - A natural cure for hypothyroidism

Subject Category: Biology
Name: NASIL SANIAH & NIMRA KHADEEJA Std: 10
Guide: NAGASHREE AITHAL
School: The Yenepoya School, Jeppinamogaru

ABSTRACT:

Hypothyroidism is a health problem caused by abnormally low thyroid hormone production with associated disorders. One of the major causes for hypothyroidism is severe iodine deficiency in the diet and severe hypothyroidism can be seen in 5% to 15% of the population, India is one of such regions. Symptoms are fatigue, depression, weight gain, dry skin, constipation etc. Major treatment involves daily use of synthetic thyroid hormone levothyroxine. Treatment with levothyroxine is long term steroid consumption shows side effects and is expensive. The overdose results in chest pain or heartache in aged people. Hypothyroidism was earlier treated by indigenous and traditional methods, people found solutions to diseases from diverse plant species from mother nature. In a small town near Tumkur city, “ash of banana leaves” is used to treat hypothyroidism with a high success rate. We investigated into the mechanism of reducing hypothyroidism by the use of ash from banana leaves (Musa paradascica enitre). Freshly collected banana leaves were sun dried and were burnt into ashes with the help of camphor. Ash obtained was dissolved in clean water and left undisturbed overnight. The ash and the supernatant were tested for iodine, mineral, metal compositions, Electrical conductivity and pH. It was found that, banana leaves contain high amount of iodine and other trace elements such as potassium and calcium needed for curing hypothyroidism. Banana leaves are naturally available, can be used for treating the hypothyroidism acknowledging the miraculous wealth of nature.

Project Code: BIO-17 Online ID:214

Title: A cost effective organic glue from redbeed tree seeds
Subject Category: Biology
Name: SWATHI DERKAJE Std: 10th std
Guide: Shailaja.S.Bhat
School: St.Philomena Highschool,Darbe,Puttur

ABSTRACT:

The Red beed trees are commonly seen in the humid tropics.This tree has a botanical name as Adenanthera pavonina L., belongs to the Fabaceae – Mimosoideae family.
The red beed trees have been observed to be flowering and fruiting almost throughout the year but peak in May. Pods are long and narrow, 15-22 x 2 cm with slight constrictions between seeds, dark brown, turning black upon ripening, leathery, curve and twist upon dehiscence to reveal 8-12 hard-coated, showy seeds, 7.5-9 mm in diameter, lens shaped, vivid scarlet; seeds adhere to the pod. Ripened pods remain on the tree for long periods. The seeds are popularly known as Circassian seeds.
An Ecofriendly, organic glue can be prepared by mixing the seed powder with the limestone powder.
Preparation of organic glue:
The ripened seeds are collected and cleaned by washing. They are sun dried for 7 days. The outer shell is removed and discarded. The inner part is grounded to get a fine powder. This powder is preserved in airtight container.Whenever one wants to fix the broken items like mirror,glass one part of Circassian seed powder is mixed with 2 parts of fresh organic limestone powder and made into a thick paste by adding little water. This serves as a good quick- fix glue to fix the broken items.
This organic glue is the most cost effective as the Circassian seeds are easily available throught the year; Organic limestone powder is common in Indian households. It does not contain any harmful, irritant chemicals as those available in the market.

Project Code: BIO-18 (Team) (Jr) Online ID:216

Title: Preparation of an effective herbal mouthwash
Subject Category: Biology
Name: Mansha Ashraf & Haneen Std: 6
Guide: Dr.Phirdose Ashraf
School: Yenepoya school, Jeppinamogaru, Mangalore

ABSTRACT:

Dental caries , commonly termed as tooth decay, is a bacterial (Streptococcus mutans) infection causing destruction of tooth structure .
Maintenance of good oral hygiene prevents most dental diseases as adequate cleaning of teeth and mouth dental plaque ; the bacterial source and causative factor of most dental problems.
Most people do physical cleaning of teeth with twigs or toothbrush once a day though atleast

twice daily brushing is recommended. Thus dental caries is the single most chronic disease affecting 60%-85% children and most adults in India.

Studies have shown that apart from brushing, a germ-killing mouthwash (which is convenient to use) , can significantly reduce occurance of plaque. A mouthwash when rinsed with reaches 100% of mouth surfaces unlike only brushing which focuses on teeth (25% of mouth) , thus acting on more bacteria.

Our aim is to prepare an anti-bacterial herbal mouthwash which overcomes the disadvantages of chemical(chlorhexidine)mouthwashes . Chlorhexidine is known to discolour teeth and oral surfaces, alter taste sensation and is not proven safe for children,pregnant women and nursing mothers.

We have selected traditional guava (Psidium guajava), mango(Mangifera indica) and neem (Azadirachta indica) leaves in various proportions to prepare the mouthwash.All of them are known for their anti-bacterial properties and guava leaves for astringent, immune-boosting(vit C) and anti-oxidant effect too. Astringent effect helps in reducing bleeding and swelling of gums too.

We aim at preparing a readily available, cost-effective, easy to use , safe, anti-bacterial mouthwash especially for the larger Indian population.We are also putting efforts to make a caries-preventing chewing gum with similar ingredients .

A mouthwash is relatively easy to use . We believe that if use of an effective and safe mouthwash is made widespread and also the awareness of the multiple benefits of mouthwash is increased , it will significantly help in reducing one of the most common disease in the world -- dental caries.

Project Code: BIO-19 (Team) Online ID:224

Title: Bio Fiberglass sheet Using Areca Fibers For Sound Proofing

Subject Category: Biology
Name: Ancilla Reema Gonsalves & Jane Harriet Miranda Std: 9
Guide: J.A.Gonsalves
School: St. Philomena High School, Darbe, Puttur.D.K.

ABSTRACT:

Bio Fiberglass sheet Using Areca Fibers For Sound Proofing
Abstract:-

This project is mainly prepared because in Karnataka though arecanut is cultivated as garden crop a large quantity of arecanut fiber is wasted. The extraction of areca fiber can be carried out by the same process like the extraction of coir fiber from dry coconut husk. In this process various steps are involved.

The requirements are Accelerator, Catalyst, Polyester Resin, wax and areca nut fiber. First separate the fiber from arecanut husk. Take a wooden plank and apply wax on it. Take a plastic bowl and mix 200ml of resin, 20ml of Catalyst, 10ml of accelerator. Place a layer of Areca fiber over the wooden plank and apply the mixture properly on it. Leave it for 10-15 mins. Now the sheet can be lifted and even be carved into shapes by using blade. If more thickness is required, then this procedure could be repeated. These Areca Bio Fiber Sheets could be effectively used as Soundproofing Panels too. Usually Cinema theatres, Auditoriums, need sound proofing. Most of the time this is done by using soundproofing panels or acoustic boards to cover the walls and

ceiling. The sound proofing panels absorb and diffuse various types of sound waves. The areca bio fibers will act as a cushion and absorb most of the sound waves. Due to its asymmetric texture it will diffuse the sound waves too.
Thus this project is helpful to the agriculturists who grow areca nuts & have some profit.

Project Code: CHEM-01 (Team) (Jr) Online ID:156

Title: Prevention of Fungal Growth on trees
Subject Category: Chemistry
Name: B.VARUN BHAT & NISHANTH D.B Std: 7
Guide: Girish Kamath
School: Vivekananda english midium school, Tenkila, Puttur

ABSTRACT:

Things needed:
1] Copper carbonate 24g(made at home by mixing Sodium, Water, Copper sulphate and should be filtered)
2]Ammonia(a colorless liquid with pungent smell used for cleaning purposes.)
3]Copper sulphate 25 g
4]Water
5]Large bottles

First of all take large bottles. Add 50ml of water to it.
Then add Copper carbonate 25g and Ammonia 15 ml.
Copper Carbonate dissolves completely and the solution changes into blue colour.
Now add 25 grams of Copper Sulphate to this solution.
Now this fungicide is ready to use. Apply this on Arecanut and Coconut trees avoiding the foliage as it is very poisonous.

Project Code: CHEM-02 (Team) (Jr) Online ID:173

Title: Sea water as a source of drinking water-desalting
Subject Category: Chemistry
Name: Vandana Ann Goveas & Richa Jewel Dcosta Std: 8
Guide: EDWIN SANTHAN D' SOUZA
School: St. Philomena high school Philonagar Darbe Puttur

ABSTRACT:

Sea water as a source of drinking water -Desalting
Desalting or desalinization is commonly applied to effect a partial or complete mineralization of highly saline water such as seawater (35000ppm of dissolved salts) or brackish waters. Partial demineralization applies to lowering of the saline content to a degree which renders the water suitable for drinking purposes(500ppm salines or less) and other general uses.
Shortage of water for drinking and Industrial purposes is becoming alarming day by

day.Intensive researches are going on in various Countries to solve the problem by "converting sea water into drinking water".Various methods such as freezing method,distillation method,multistage evaporation method,electro-dialysis and reverse osmosis method have actually been tried for this purpose.Out of these,the distillation method can be used for desalting.
One promising method is the distillation method in which the impurities can be separated out of saline or brackish water when it is distilled in a distillation chamber.This method is based on the fact that when saline water is subjected for distillation,the impurities will retain in the chamber giving out less saline water.The water produced may be tested for halides(Chloride,bromide,iodide)by treating the water with silver nitrate which gives the precipitate of silver halides(if halides present).The less saline water is then may be tested for the presence of sodium, calcium and magnesium by treating with the chemicals like potassium pyroantimonate, ammonium oxalate,and disodium hydrogen phosphate.
In this manner saline water may be converted into drinking water.

Project Code: CHEM-03 (Team) (Jr) **Online ID:175**

Title: A Novel way to extract Calcium from Terminalia elliptica

Subject Category: Chemistry
Name: Shreevara A & Aboobaker Ayaan Std: 8
Guide: Nishitha K. K.
School: Indraprastha Vidyalaya, Uppinangady

ABSTRACT:

Terminalia elliptica is a threatened species of combretacae family. It is a huge tree growing up to 30mts tall with peculiar bark. My grandparent's parents had the practice of using the lime extracted from this plant along with betal leaf. So we took this idea as our project material. The ash got by burning the 100gms of dried bark must be mixed with the 200 ml of ground leaves.Then the mixture must be covered by karanja(pongamia pinnata) leaves and placed inside the coconut shell. Then the coconut shell must be covered by cow dung followed by karanja leaves. The whole setup must be placed inside the burning charcoal for minimum 11 to 12 hours. Thus we can get the lime in solid form. We tested the chemical properties of the product in Vivekananda Degree Collage, Puttur and chemical analysis is done in NITK, Surathkal.

RESULTS :
1. Content-Inference
2. Calcium-Brick red colour is obtained by Flame test.
3. Carbonate-Efferescence is found with dil.HCl
4. Potassium-Yellow crystalline is obtained with Con.HNO_3 acid and aqueous Picric acid
5. Protein-Biuret test is done and solution turned to violet

Application :
1. Herbal kumkuma is prepared by using camphor,turmeric,ghee,lemon and the lime of T.elliptica.
2. Bordo Mixture is prepared by using equal ratio of $CuSO_4$ and T.elliptica lime.
3. Banana is ripened by applying T.elliptica lime within 3 days.

4. The lime is applied on slippery areas to remove the slime.

As this plant has more uses the plant population can be increased.

Project Code: CHEM-04 (Team) Online ID:210

Title: Low cost synthesis of Zinc Oxide Nanoparticles for waste water management.

Subject Category: Chemistry
Name: Koushik. P & Vivek Jadhav Std: 11
Guide: Ankita M A
School: Hongirana Independent PU college, Amatekoppa

ABSTRACT:

Our country being a developing nation, have upraise in industries such as dye industries, textile and many more industries which generate huge amount of colored effluent into the environment, which has significant undesirable biological and ecological effects. Several processes have been developed over the years to remove dyes from industrial waste waters such as chemical precipitation, membrane filtration and few other processes. However, none of these methods has been widely used due to relatively high-cost and low-feasibility for small-scale industries. In contrary, the Adsorption technique is more economical, simpler and is capable to efficiently treat dyes in their more concentrated forms. Further, adsorption techniques do not have secondary sludge disposal problem, making it eco friendly and most promising technique.
Metal-oxide nanoparticles, in particular, have been widely evaluated for the removal of various contaminants from water. Their large surface area and higher reactivity makes them an ideal choice for removal of contaminants.

In a typical route, zinc oxide nanoparticles were prepared by adding 100 ml of basic precipitant 0.4M NaOH solution into a 100 ml of 0.2M metal salt under constant stirring. About 50 mg/L cetyl tri methyl ammonium bromide (CTAB) was added as capping agent which inhibits the anomalous growth of metal hydroxide crystals during the course of precipitation. Then the resulting solution was kept at room temperature for about 3 hrs under constant stirring. The obtained slurry was centrifuged at 1000 rpm and precipitate was washed several times with water and alcohol, dried in an oven for a period of 1-2 hrs at 600 C. Then powder is further heated in silica crucible for a period of 6 hrs at 6000 C. Finally, the resulting adsorbent was stored in air-tight container for further use to adsorption experiments.

Adsorption studies were carried out by batch adsorption techniques in a 250 ml of stoppered flask (Erlenmeyer flasks) that contain 100 ml of 20 mg/L of MGO solution. To that we have added 200 mg/L of ZnO nanoparticles. The experiments were carried out in thermostated shaker at 200 rpm. The flasks were removed from the shaker after 60 min and sample was analyzed by a UV-vis spectrophotometer (Shimadzu UV-1650, Japan) at 617 nm for MGO. The amount of adsorbate adsorbed at equilibrium condition, qe (mg/g) was calculated by the following equation:

$$qe=[Co-Ce]v /W$$

where Co and Ce are the initial and equilibrium concentrations (mg/L) respectively. V is the volume of solution (L) and W is the mass of adsorbent used (g).

Project Code: CHEM-05 (Team) Online ID:218

Title: Effect of cinnamomum camphor on headlice
Subject Category: Chemistry
Name: Shravya.M.P. & Sowmya Std: 9
Guide: Jayalaxmi A.
School: Shri Ramakrishna High School, Puttur

ABSTRACT:

Native to the wet forests of subtropical and tropical Asia, the camphor tree, cinnamomum camphor has been planted across the world's warm temperate, subtropical and tropical regions. It is a tree of many faces – a stately forest giant in its native range, a rampant pest in eastern Australia, a source of spice in south Asian cuisine, a shade tree in Florida, a natural pesticide – the list goes on. Its defining feature is the essential oil that can be extracted from it tissues and the cocktail of aromatic chemicals that give the oil its pungent, fresh odor. Of these camphor is the star-a highly aromatic terpent like chemical. Camphor oil itself a more complex cocktail of chemicals, including camphor, borneol,1,8-cineole, linalool, nerolidol and safrole.

My grandmother uses camphor oil to remove the headlice. From the literature we came to know that it is used as a natural pesticide. So we wish to do the project of preparing hair oil to remove head lice using camphor.

We took 250ml of coconut oil in a container and 50gms of camphor. Then kept it for 6 hours. Now we got 300ml of oil.

We applied each of our oil on different types of lice including animal lice for a time interval of 1/2 an hour, 1 hour, 11/2 hour and 2 hours. We observed that all the headlice were removed from the hair in a time interval of 1.45hours.

The PH of our product is done in our school laboratory.

Project Code: CSE-01 (Team) Online ID:197

Title: Structural Designation of Buldings
Subject Category: Computer Science & Engineering
Name: Sanjog S & Pradyumna S K Std: 9
Guide: Rajashekar B C
School: Vivekananda English Medium School, Vivekanagara

ABSTRACT:

This Project Tells us Proper Length and Width of the Structures ,how to Construct a building by using its Blue Print Plan. Logo Command Having Its Own Command Description and its number for the Length for angle for all side , height and width and also it describe the Size for Each dimensional of the Building Sides. Commands are Disguise the Exact structural Design of any Type of the Building and here Hand Design not required. only Commands are Shows how to Design Equivalently.

This will help us to design our Sketch with Exact angle of incident and their Direction Mode where to be Fix and Construct in a Proper Destination along with this Design.

Project Code: ENERGY-01 (Team) Online ID:112

Title: On Demand Instant Water Heater

Subject Category: Energy
Name: Samanth H.S. & M. Chinmay Prabhu Std: 9
Guide: Sujnana U.
School: Sri Sathya Sai Loka Seva Vidyakendra, Alike

ABSTRACT:

INTRODUCTION

India is one of the country of villages and agriculture is the back bone of our nation economy. The main aim of the project is to utilization of abundant agricultural waste as a fuel and to give the modified energy infrastructure to the nation and an efficient on demand boiler system to all kinds of people.

There are variety of water heater namely electric, LPG and solar water heater, but these are costlier and solar energy is seasonal. To overcome these problems , it needs to develop new system. ' On Demand Water Heater' uses any type of fuel derived from agricultural waste and system becomes very economy compare to any other sources of fuel.

CONSTRUCTION AND WORKING

The main parts are : 1) Combustion chamber 2) Heating Coil 3) Ash collector 4) Air windows

5) Combustion Starter 6) Drought System

WORKING PRINCIPLE

In this system, water heating takes place due to the direct combustion of solid fuels. The fuel is led into combustion chamber through the opening provided at the bottom. The firing is done through the combustion starter, and for efficient combustion, air windows are provided just below the combustion chamber.

The fined coil is placed inside the combustion chamber which in turn heats the water as it flows inside the coil tube against the gravitational force. The water gets heated due to convective and radiation mode of heat transfer and the hot water is taken out through outlet. The ash gets collected in the ash collector which can be disposed easily.

ADVANTAGES

1. Electricity or LPG is not required.
2. Agricultural wastes can be effectively utilised.
3. Simple in design and easy to operate.
4. The system is compact, portable, light weight and durable.
5. It is an instant heating system.
6. No skilled persons required to operate the system.

7. Initial and running cost is less compare to all kinds of heaters
8. Suitable for all seasons
9. It is helpful to all kinds of people. Mainly middle class and poor peoples.

Project Code: ENERGY-02 (Team) Online ID:118

Title: Floating Pump with Generator

Subject Category: Energy

Name: Shivakumar Shankarayya Shahapurmath & Sumeet Mahadev Dandaragi Std: 9

Guide: Sujnana U.

School: Sri Sathya Sai Loka Seva Vidyakendra, Alike

ABSTRACT:

INTRODUCTION

Floating pump is used in summer season. Then what about rainy season? So, we invented floating pump with floating generator.

ADAVNTAGES

It is very easy to carry as it weighs light.

In Submersible Pump, we have to keep the pump deep inside the water. To keep this pump inside the water we need at least 5 to 6 members as it is heavy in weight. But for our project we require only 1 to 2 members which saves the extensive use of workers. There is no need of sinking our floating pump inside the water but we can float it. If there is anything to repair, the fitter can sit upon it and can repair. But in Submersible Pump we should go inside the water, bring it up and then we have to repair it. If it is in original form it can bear weight up to 60 120 kgs (A man can sit on this pump and can repair it if there is a problem) We keep it another name as "Sujalaam Sufalaam" Pump

It is cheap and best.

HOW IT WORKS

From battery the wire is connected to the motor and electric power is transported from battery to motor. At that time the motor rotates the fan which is fixed to it. When the fan is rotated inside the impeller water is sucked from water level pipe and it pushes water outside via outgoing pipe and water is supplied to all the divisions(pipes) which are connected to floating pump.

FLOATING GENERATOR

Floating Generator is used in rainy season when the outlet pipe of the floating pump is kept under the falls. Then Falls water enters pipe in a furious manner. The turbine rotates , the turbine's rod is fixed to the dynamo. Because of rotating electricity is produced.

Project Code: **ENERGY-03 (Team)** **Online ID:150**

Title: HYDROELECTRIC FOOTWEAR

Subject Category: Energy
Name: NEHA YARAGATTI & ASHNI SUVARNA Std: 9
Guide: GOWTHAMI PARTHIBAN & SUMANA
School: NITK ENGLISH MEDIUM HIGH SCHOOL, SRINIVASNAGAR

ABSTRACT:

We have come up with an idea of placing small hydropower generators into the soles of shoes. The micro turbines will generate enough electricity to power almost any gadget.

There is a very basic principle how we walk: The foot falls heel-to-toe during each step. As your foot lands on the ground, forces brought down through your heel. When you prepare for your next step, you roll your foot forward so the force is transferred to the ball of your foot. It is apparently noticed this basic principle of walking has developed and idea to harness the power of this everyday activity.

There are five parts of footwear with hydroelectric generator assembly as described below.

a) Fluid
b) Sacs to hold the fluid
c) Conduits
d) Turbine
e) Micro generator which includes vane rotor

As a person walks, the compression of the fluid in the sac located in the shoes heel will force fluid through the conduit and into the hydroelectric generator module. As the user continues to walk, the heel will be lifted and a downward pressure will be exerted on the sac under the ball of the persons foot. The movement of the fluid will rotate the rotor and shaft to produce electricity.

An exterior socket will be provided to connect a wire to a portable device. A power control out put unit may also be provided to be worn on the the users belt. Electronic devices can then be attached to this power control output unit, which will provide an steady supply of electricity.

With the increase in the number of battery powered, portable devices there is an increasing need to provide a long lasting adaptable efficient electric source. This device will be used for powering portable computers, cell phones and CD players.

Project Code: ENERGY-04 (Team) Online ID:196

Title: E-G converter
Subject Category: Energy
Name: Bharath poojary & Keerthan Prabhu Std: 12
Guide: Ganesh L. Poojary
School: viveka pre university college kota

ABSTRACT:

There are so many ways in nature to convert forces which are in nature to electricity but all of them are not economical and suitable for all conditions. So from long years our scientist have trying to find a solution. Here we are producing electricity from the difference in the densities of two objects. By the density difference a propeller is made to rotate which generates a voltage of 12volt DC current which is connected by series of transistor amplifier which are directly coupled(dc coupled transistor amplifier). Which is connected to a oscillator to produce AC current which is stepped up by a transformer produce 220volt 500ampere current for domestic purposes.

Project Code: ENERGY-05 (Team) (Jr) Online ID:225

Title: Nutritional chocolate from cassia tora seeds
Subject Category: Energy
Name: Lahari & keerthika Std: 8
Guide: JAYALAXMI. A.
School: Sri Ramakrishna high school, Puttur

ABSTRACT:

Soaring food prices have triggered an increasing in hunger old wild. The increasing prices of food. Has been attributed to several factors. That includes production shortfalls due to drought and floods. This will increase the demand against a weak supply .Wild plants play on important role in the diet of most rural dwellers. These plants tend to be drought resistant and are gathered both in times of plenty as well as times of need. Cacciatore is a legume belonging to the caesalpiniaceate Family .It grows wild mostly in the tropics and is considered a weave in many places.

The aim of our project is to prepare chocolate from the seeds of cassia tora as a food supplement.

We collected 100 Gms of cassia tora seeds and roasted it. Then it was powdered and mixed with 15 Gms of milk powder .1gms of cardamom and 15gms of jiggery and boiled it with water for 5 minutes. Cooled it and prepare for about 15 tasty chocolate.

We did the ph test, Ec , viscosity and surfactant of the extract of seeds at v.c puttur. We went to Department of chemistry NITK surathkal and gave the powder for FTIR Study the composition under the guidance of Dr. Arun.M .Islur. We started our work in the month of June.

Project Code: ENGG-01 (Jr) Online ID:109

Title: HOUSE OF LATERITE STONE BEAUTY AND ARCHES BUILT USING BLiSS MIXTURE INSTEAD OF CEMENT

Subject Category: Engineering
Name: ADITHYA KAMATH D Std: 8
Guide: ANANTHA KRISHNA KAMATH D
School: Kumaraswamy Vidyalaya, Vidyanagar, Subrahmanya

ABSTRACT:

Purpose: Project aims at building low cost, high quality, maintenance free house exposing laterite beauty. BLiSS mixture is used as a glue instead of cement. BLiSS is a blend of Black jaggery(B), Lime putty(Li), Sand(S), Sap of persea macrantha(S).
Procedure: In accordance with the engineering plan foundation wall was built. But the gaps between the granite stones were packed with plain sand instead of cement. After sealing the outside with BLiSS mixture. 2 feet long sturdy laterite stones were procured, polished with a granite cutting machine wall was built as usual but with BLiSS mixture as a glue. Different types of laterite arches bordering the windows, doors, were used to bridge the span, to support the weight above and to increase the beauty. The regular concrete slab was used as roof with 6inches thick hallow earthen tiles adopted in the ceiling inside. Mixture of very fine laterite powder, fine sand, red oxide & with cement was used to fill the gaps between the stone layers of the wall. Later entire wall was polished. A blend of white cement & lime putty was used for pointing the stones. I neither got the walls plastered nor painted. Instead, a melamine spray was given to the wall for the best feel of it. Electricians also worked hand in hand with masons. I got entire electrification concealed by burrowing holes and burrows in the stones during construction. The honey comb appearance of stones add beauty and help in air conditioning inside the house. Flooring was done with granite stones.
Conclusion: Fine finished laterite wall is beautiful, keeps the cool, cost effective. BLiSS mixture is a natural strong glue considerably increases the life of building. Periodic painting of the house is not necessary in such a case. My house is maintenance free.

Project Code: ENGG-02 (Jr) Online ID:133

Title: WATER SAVING TAP

Subject Category: Engineering
Name: VINAY SEDIYAPU Std: 8
Guide: VISHWAPRASAD SEDIYAPU.
School: VIVEKANANDA ENGLISH MEDIUM SCHOOL

ABSTRACT:

All existing water taps are free flowing water taps. These taps consume rove water and most of the water is wasted. To conserve this precious water, a tap is designed where a spray nozzle is fitted at the opening. Instead of free flow, water is just sprinkled on the hand. When compared to

the existing taps these spray nozzle fitted taps restrict us to use only 10% of the ordinary taps it means the remaining 90% is saved unlike in ordinary taps. If those new taps are used in hotels, railway station, and houses where hand wash is required an enormous amount of water could be saved. It is the modification of existing technology. It means the incorporation of spraying technique to ordinary.

Project Code: ENGG-03 (Team) Online ID:147

Title: Development of Eco-Friendly Vetiver Natural Fibre Composite Materials

Subject Category: Engineering
Name: Arzoo Ahmed & Shreyansi Vardhan Std: 9
Guide: Ranjini Prasad
School: The Yenepoya School (Jeppinamogaru,Mangalore)

ABSTRACT:

In the present days the trend of using natural fibre composite materials have increased due to many factors such as abundance of natural fibres, ease of processing, renewability, biodegradability and low density. These materials do have better strength, stiffness, flexibility, modulus and the most important one from an environmental point of view ie. Biodegradability. Chemical composition of natural plant fibres contains primarily of cellulose, hemicelluloses, lignin and pectin. It all depends upon the type of fibre, place of growth and other environmental factors. Use of eco-friendly composite materials with reinforcement of natural plant fibres are increasing slowly because of the favourable mechanical and acoustic properties.

The present work is focussed in processing a natural fibre composite material using natural fibres of vetiver and thermoset polymer of epoxy resin as matrix with suitable curing agents processed by simple traditional hand layup method. The fibres are treated with chemicals to improve the affinity between fibres and matrix. The developed eco-friendly material is tested for mechanical properties such as tensile and bending strength. These materials find suitable applications in building and automotive structures.

Project Code: ENGG-04 (Jr) Online ID:155

Title: Automatic Vehicle Controlling System

Subject Category: Engineering
Name: Nischith Rai S. Std: 7
Guide: VENUGOPAL RAI S
School: Vivekananda english midium school, Tenkila, Puttur

ABSTRACT:

Things needed:

1] L.D.R. Light Dependant Register
2]L. E. D. Light Emitting Diode
3]Transistor Q1 (BC547)
4]Transistor Q2(SL100)
5] 6 Volt Relay
6) ICLM324
7) IRLED

Automatic Dim Dipper Light
Dim Dipper Light workswith the help of transistor Q1 which receives message by the rider. Transistor Q1 works only when rider wants to use it during passing the other vehicle. Transistor Q2 will perform automatically even when there is no light falling down to the
base supply of current passing from Transistor Q2's emitter to collector.
So because of that operation relay gets on mode and dipper lights device will automatically work.
When light falls to L.D.R. Transistor Q2,
current gets supplied to the base of L.D.R. Transistor Q2 .
At the same time relay gets off mode and dim light device lights automatically.
Automatic Brake Control:
If the vehicle is running on the road, suddenly if there is a vehicle coming in cross road direction. To avoid accident and other harmful effects when vehicle is on speed mode, photo diode receives radiation with the help of IRLED. Photo diode will pass the current signal to ICLM 324.
This ICLM 324 supplies current frequency to the base of 324. This ICLM 324 supplies current frequency to the base of Transistor Q2. By that time emitter device passes current to the collector device and at the same time relay gets on mode and vehicle stops automatically

Project Code: ENGG-05 (Team) (Jr) Online ID:160

Title: ACCIDENT RESIST SPRING
Subject Category: Engineering
Name: ANKITH KARKERA & K ABHEESHTA KUMAR JAIN Std: 7
Guide: Mohini Bhandari
School: SRI SRI RAVISHANKAR VIDYA MANDIR, KARKALA

ABSTRACT:

Now a days the number of vehicles are increasing and everyday we come across so many accidents taking place. In such circumstances, it is very important to have safety measure to reduce the harm occurring in such accident cases. We have found a simple safety measure by fixing strong metal springs in front of the vehicles. As per our idea two strong springs are fixed between the bumper and chassis. When accident takes place and vehicle knock from the front side, these springs acts between the bumper and chassis and reduces the force. Because of its shape the spring works like elastic and this helps to reduce the force. That is why we called it as AC

CIDENT RESIST SPRING. As this is very simple and cheap can be fixed to all the vehicles and thus reducing the harm to both the vehicle and passengers.

Project Code: ENGG-06 (Jr) Online ID:167

Title: Innovative water pump
Subject Category: Engineering
Name: Prathyush Hebbar Std: 7
Guide: Sadhana Hebbar
School: Sudana Residential School Puttur

ABSTRACT:

It is a simple reciprocating pump that can be used to pump water to the overhead tank or to draw water from the well. The piston assembly of the modified cycle pump is attached to the rear wheel of the cycle. So when the wheel rotates the piston gets pushed forward and backward. The rotatory motion of the wheel is converted to linear motion in the cycle pump. As the wheel rotates, the piston gets extracted and retracted, sucking in water by the vacuum pressure created inside.
The pump is attached to pipes with non-return valves at the suction and the delivery end to ensure uni-directional movement of water. I have tested this at my house as well as my father's office and grandmother's house. I have tested it for different heights, different paces of pedaling and different valves. I have seen it work for reasonable height of about 6 meters. The pace of the pedalling did not make much difference in drawing water. The best valve was the one prepared using an ordinary rubber ball (crazy ball.
This pump can be used during power failure which all of us are very familiar with. It can also be used to save electricity or fossil fuel. It can also be used as a stationary bike for exercising. The cycle has a sturdy stand so that anyone can use it young or old. Since it has a stand balancing will not be a problem.

Project Code: ENGG-07 (Team) Online ID:169

Title: WIRELESS CHARGING SYSTEM FOR CHARGING ELECTRONIC GADGETS WHILE TRAVELLING IN A TRAIN
Subject Category: Engineering
Name: IJAZ AHAMED & ARKAAN SAYED Std: 9
Guide: CALVIN DSOUZA
School: THE YENEPOYA SCHOOL,JEPPINA MOGARU,MANGALORE

ABSTRACT:

In India, Charging electronic gadgets while travelling in a train is difficult as the number of charging points are insufficient while comparing to the number of passengers in the train. To overcome this problem a wireless charging system is proposed.
Wireless charging is achieved through a process of electromagnetic induction whereby a current

is transmitted from a coil in a charging point to a coil embedded in a gadget placed a few centimeters away .The system consists of wireless charging points inside the train and a receiver circuit connected to the gadget. Here a Charging Tray which acts as charging point produces changes in the magnetic field using electronic circuit. In response to this changing magnetic field the receiver circuit connected to the gadget produces Electro Motive Force (emf) which in turn produces alternating current which can be used for charging the electronic gadget. This alternating current will be produced according to the Faradays law, which states that "Any change in the magnetic environment of a coil of wire will cause a voltage to be induced in the coil". The electronic gadget has to be either laid down on, or a very short distance from the charging tray for wireless charging. This system has advantages like, Lower risk of electrical shock, Protected connections, Easier than plugging into a power cable and User convenience.

Project Code: ENGG-08 Online ID:180

Title: Hand crank solar powered portable mobile charger

Subject Category: Engineering
Name: Tanisha Shetty Std: 9
Guide: Gayathri K
School: Sudana High School Puttur

ABSTRACT:

Today mobile phones have become vital means of communication. But the life of these phones depends on the battery within it. Once the battery goes down the phone does not work. Hence there is a need for a robust economical alternative source for charging mobile which is also handy while travelling or during continuous power failure.

Our initial model consisted of a motor connected to a battery through a diode so that the current discharged from the battery could be charged through the motor and the solar panel. But the current output of the motor was not sufficient to charge the battery. It took a long time. So we thought of replacing the motor by a blowing motor of the car. We have connected a Flywheel of diameter 17cm to the motor. The motor is connected to the battery through a diode. A solar panel is connected to the battery. From the battery a wire is connected to LED through a switch. Another wire is connected from the battery to the car charger (adopter) through the switch.

It is found that we can charge the mobile using power obtained by rotating the motor and solar power. Innovations in such techniques and development of systems to harness newer sources of energy will help make our surroundings more energy-efficient and ensure our contribution to a greener future for many generations to come

Project Code: ENGG-09 (Team) Online ID:181

Title: Automatic gate for railway cross
Subject Category: Engineering
Name: Mohad & Sajan M K Std: 9
Guide: Sadhana Hebbar
School: Sudana High School Puttur

ABSTRACT:

A lot of accidents can be avoided at the unmanned level crossing if it has an automatic gate. We have made an automatic gate opening and closing system that can be adopted in such areas. We have used dynamos to produce electricity for giving a signal and the opening and closing of the gates. We got this idea by seeing the cycle dynamos used to generate electricity.

The average length of a train would be around 520 meters approximately 13 bogies of 40 metres in length. The speed of the train is 110 km/hour. The 2 dynamos are placed 3 to 6 km away on either side of the gate. A roller type of assembly is fixed to one side of the engine such that it rubs over the dynamos. As the train passes near it electricity is generated. When it moves over the first dynamo the sensor gets activated and the signal light is switched on. When it moves over the second dynamo the gate will be closed. The last bogie also has another roller assembly on the opposite side. When this rubs over the first dynamo fixed 3 to 6 km after the gate, the gate gets opened. As it moves over the second dynamo, since it placed in the reverse mode the signal is not given out.

This contraption can be applied wherever there is a necessity for a gate that cannot be manually controlled.

Project Code: ENGG-10 (Team) Online ID:207

Title: Automatic Humidity Monitoring And Pumping System For Farmers
Subject Category: Engineering
Name: syeda almas & Nasreena Std: 11th std
Guide: Geetha
School: hira women's composite pu college, hira nagar

ABSTRACT:

DESCRIPTION:

In this project the design is simple, easy to install, microcontroller-based circuit to monitor and record the values of efficiently inside a green house by actuating a water pump according to the necessary condition of the crops. An integrated Liquid crystal display (LCD) is also used for real time display of data acquired from the sensor and the status of the device.. The design is quite flexible as the software can be changed any time. It can thus be tailor-made to the specific requirements of the user.

This makes the proposed system to be an economical, portable and a low maintenance solution

for greenhouse applications, especially in rural areas and for small scale agriculturists. There is one water level sensor is present to indicate the level of water in the well. Also, the use of easily available components reduces the manufacturing and maintenance costs

Project Code: ENGG-11 Online ID:219

Title: SENSITIVE LPG LEAKAGE ALARM ;SIMPLE SECURITY SYSTEM USING TOUCH PLATES

Subject Category: Engineering
Name: SHREE JNANESH Std: 12
Guide: Bhima Bharadhwaj
School: Vivekananda Pre University College , Puttur

ABSTRACT:

1
Gas leakage is common during domestic usage .Very often this causes major casualties including deaths.The addition of ethyl mercaptan is insufficient during certain times.Hence it is necessary to have a fool-proof leakage alarm based on modern technology.
This LPG alarm circuit consists of a MQ6 six pin gas sensor sensitive to LPG but not to low mass alcohols and smoke.It also has a swift response time .The output is indicated in the form of a resistance taken through a piezo buzzer by formal circuit.Also the sensitivity can be varied using pots.
It was successful in detecting even minor gas leakage in 14.2 kg and 19.1 kg cylinders with greater efficiency
Due to its high reliability and variable sensitivity it can be used for both short and long distance leakage detection
2 Robbery is common in a general society. However safe we are the thieves are always a step ahead . Hence it is necessary to have a novel undetectable method to trap them.
This security system works on the principle of making and breaking of circuits. It consists of a touch plate system on a x ray sheet base placed at entries and exits.when a person[for ex,the thief] steps on it the plates touch each other and circuit closes triggering the relay which in turn activates the alarm circuit
Experimentally verified circuit in which the alarm goes bang for 10 minutes approx.
Owing to its economical reliability applicable right from household uses to large banking systems.

Project Code: ENGG-12 Online ID:221

Title: METAL DETECTOR USING DIFFERENCE RESONATOR

Subject Category: Engineering
Name: Mahesh G Bhat Std: 12
Guide: Bhima Bharadhwaj
School: Vivekananda Pre University College , Puttur

ABSTRACT:

Certain metallic objects can be fatal for human beings .Hence it is necessary to detect and remove them before any fatality .this circuit is capable of it.

Based on the principle of induction resonance this circuit uses copper coil wound over a metallic base rod .It consists of a triggering circuit which answers frequency disturbance within the coil .

It is efficient enough to detect most ferro magnetic metal .

Because of its small size,it can be used everywhere .

Project Code: ENGG-13 Online ID:222

Title: METAL DETECTOR
Subject Category: Engineering
Name: Ruthvik Hebbar N Std: 12
Guide: Bhima Bharadhwaj
School: Vivekananda Pre University College , Puttur

ABSTRACT:

It is important to analyse and detect metals in certain places like airports ,banks etc. But it is difficult to manage bulky systems .Hence this mini circuit is dearly helpful .

It works on the basis of differential frequency triggered by multiple access ,one of IFT other of search coil .The output is taken in the form of beeping headphone.

Successful in detecting metals even from a certain depth ,underground .

Efficiency ,reliability is its second name. So trust it .

Project Code: ENV-01 Online ID:114

Title: A novel product to prevent pests of Cocos Nucifear
Subject Category: Environment
Name: Suhail Shek Std: 9TH STD
Guide: VASANTHI KEDILA
School: SRI RAMAKRISHNA HIGH SCHOOL,PUTTUR

ABSTRACT:

Abstract:-

Bettle is one of the big threats to farmers as they destroy cultivated coconuts. There are a number of bettle spray available in the market .They are not dangerous and cause pollution to the environment .So as to replace the use of these bettle chemical spary. We thought of preparing the natural bettle spary.

We took 90 grams of Malabar nut leaves and crushed it .To prepare 1litres of bettle spary. We found that the mortality rate o four product is 100% . We distributed to many farmers to apply and experiment it on their field and collected their opinion. It was very much appreciated by them.

Thus our product safe, low cost and eco-friendly and can be used in general. proper,E.c,p.h of the product maintained.our product is non-toxic,Eco-friendly and safe,easy to prepare and use

Project Code: ENV-02 (Team) **Online ID:115**

Title: A novel way of treating vegetable pest using Tinspora cordifolia
Subject Category: Environment
Name: Sagar M & Gautham B Std: 9TH STD
Guide: VASANTHI KEDILA
School: SRI RAMAKRISHNA HIGH SCHOOL,PUTTUR

ABSTRACT:

Vegetable pests are one of the big threats to farmers as they destroy the cultivative crops. There are a number of harmful chemicals available in the market. They are dangerous and causes pollution to the environment . So as to replace the use of these hazardous chemical sprays , we thought of preparing the natural spray from Tinospora cordifolia.
we took 1 k.g of Tinospora cordifolia leave and crushed it well and homogenized with 600 ml of distilled water and then filtered it.Thus we got the one litre of natural product which is used to control vegetable pests.
Proper viscosity, surface tension and pH, E.C ,of the extract is maintained. The mortality rate of our spray is 100%. We did more than 10 trials to get best result, distributed to 7 farmers to apply .They sprayed it to their field and gave positive opinion.. Thus our product is effective,safe, eco-friendly,low cost and preparation is easily. We also applied it to bettles of Coconut and the Slugs of Aracanut garden.
We also got the soil test of the sprayed place of the product which proved that our product improves the nutrient quality of the soil.

Project Code: ENV-03 (Team) (Jr) **Online ID:121**

Title: A Novel Anti Cockroach Bio Spray From Pandanus Unipapillatus
Subject Category: Environment
Name: SRILAKSHMI PAI N & PRATHEEKSHA.S. Std: 8TH STD
Guide: VASANTHI KEDILA
School: SRI RAMAKRISHNA HIGH SCHOOL,PUTTUR

ABSTRACT:

Our aim is to prepare an non-hazardous bio spray against harmful chemical sprays available in the market to kill or repel Cockroach. In our place some people use the fruits of Pandanus unipapillatus to avoid cockroaches(Perplentena americena).Extensive research has been done to prepare a natural spray by using pPandanus unipapillatus.
To prerare 1 litre of anti cockroach bio spray from Pandanus unipapillatus we used 500 grams of Pandanus unipapillatus leaves and crushed and squeezed using 300 ml of distillled water and

is filtered. Thus 1 litre of the Perplantena americena repellent is prepared.

Proper viscocity,surface tension, pH, electrical conductivity is maintained.The repellent rate of anti cockroach bio spray is 100% when compared to that of the chemical product available in the market.we are able to inactivate the cockroaches with our product.We compared our product with commercial product(Hit).

Project Code: ENV-04 (Team) Online ID:125

Title: Bio- ethanol from the pods of rain tree
Subject Category: Environment
Name: Theertha A V & Swathi T Std: 9th
Guide: Vasantha mooloya P
School: Sri Ramakrishna High school ,Puttur

ABSTRACT:

Now day petrol, diesel, coal and many other energy resources are vanishing. Therefore there is a need of other energy resources in the field of transport. The solution for this problem is the use of Bio ethanol as a fuel. Bio ethanol can be prepared by the conversion of sugar into ethyl alcohol by yeast by the process of alcoholic fermentation. In alcoholic fermentation substances containing fermentable sugar and substances containing starch are use as raw materials. The important raw material containing sugar are fruits .SO We have decided to use the fruits of rain tree as bio mass for the production of ethyl alcohol by the process fermentation of glucose .

We took 10gms of fruit of rain tree are cut into slices and crushed and it is mixed with 5 times volume of water. The resulting solution is put into container 25gms of yeast is added to it. The mixture is maintained about 33 degree Celsius for 2-3 days. During this period the enzymes present in being about the conversion of sugar in ethyl alcohol

This contains 15-18% of ethyl alcohol it's subjected to fractional distillation at 78 degree Celsius to get Absolute alcohol.

The distillation was done in Vivekananda collage puttur

The chemical analysis of the product were done in NITK Surathkal Mangalore and under the guidance of Dr. Arun .m islur .

Project Code: ENV-05 (Jr) Online ID:127

Title: "Forget Watering Your plants"-A great water saving technique for irrigation purpose
Subject Category: Environment
Name: Vismaya Devasya Std: 6
Guide: Lakshmana
School: Kumara Swamy Vidyalaya, Vidyanagara, Subramanya

ABSTRACT:

Sometimes we lose our loving plants at home just by forgetting to water it. Especially if we are living in a rental house or have to stay away from home, it becomes difficult to water the plants.

This project is about devising a set up wherein plants survive for months without watering. I have used the property of the water to rise in small tube which is called "Capillarity of water". The plant in the pot takes water from a container kept below the pot. When the pot runs out of water it gives an indication light and a alarming sound to remind for refilling water container. With this innovative technique only the least quantity of water is required to raise and maintain the plants. Hence it is a great water saving technique too. Also I have observed that water spills over the floor when excess water is poured. Sometimes we see a tray kept under the pot to hold the excess water which goes waste. This project also takes care of this problem that this excess water is also reused automatically. Though I have demonstrated the new watering technique applying it to the plants in the pots, it can also be used in general as a new irrigation system to the crops in which a drastic saving of water could be achieved.

Project Code: **ENV-06 (Team)** **Online ID:128**

Title: An effective pesticide from Clerodendrum viscosum for garden snails

Subject Category: Environment
Name: SHLIPA & SUSHMA ANANTHIMARU Std: 9
Guide: JAYALAXMI. A.
School: SRI RAMAKRISHNA HIGH SCHOOL. PUTTUR

ABSTRACT:

Clerodendrum viscosum leaves are useful and a medicinal plant which has its own and In this project we have prepared a effective pesticide for garden snail from clerodendrum viscosum leave garden snail causes a lot of damages to plantation, crops, trees. So we have worked into the possibility of developing a pesticide from clerodendrum viscosum however no information on the biocidal activity of clerodendrum viscosum leave is available so we have scientifically investigated the pesticide activity of clerodendrum viscosum leave against garden snail develop an ecofriendly pesticide agent.

We took 1kg of clerodendrum viscosum leave .we boiled it in water bath and crushed and mixed a salt then we get the extract.now 250ml of herbal spray is ready.

This solution was sprayed on the garden snail and observed for their activity .This was repeated at least 10times to conform .the experiment was carried out in a manner similar to the use of commercial repellents.this solution was very effective against the garden snail in very small quantity. We prove that, natural derodendrum viscosum based pesticide is very effective, cheep, safe, non-toxic agent and can be prepared at home by common people for the agricultural or garden use

The Ph , viscocity,surface tensionand electrical conductivity of our product was done in vivekananda college puttur. We gave our product to NITK suratkal for FTIR.

Project Code: ENV-07 (Team) Online ID:129

Title: BIO-PESTICIDE FROM ANONA SQUAMOSA LEAVES
Subject Category: Environment
Name: Akshatha Aranthanadka & Prajna Mithadka Std: 9
Guide: Jayalaxmi A
School: Sri Ramakrishna High School,Puttur

ABSTRACT:

In this commercial based society people want to make quick and more money. Hence even farmers used pesticides to protect plants from pests. This reduces soil fertility. The yield produced also contains the harmful chemicals of the pesticides. This food if consumed causes deadly dieses. So to avoid this problems we made a bio-pesticide from Anona squamosa leaves.

Take 1.5kg of Anona squmosa leaves. Crush it and mix it with liter of water and keep it one whole night. Now take 500gm of chili powder mix it with 2 liter of water and take 1kg of neem bark and prepare it's tonic and keep one whole night. And mix this three solutions. Then mix with 10 liters of water and spray.

We can apply this pesticide on many insect side and ants. It kills more than 100 insect in 1 hour. It also kills one of the insect called Aphid .

We did the viscosity, surface tension PH and EC of our Product at Vivekananda college puttur.We gave our product for FTIR chemical analysis at NITK suratkal

Thus we have prepared an eco friendly, non-toric, low cost, Bio insecticide which can be used for house hold and industrial purpose.

Project Code: ENV-08 (Jr) Online ID:159

Title: WIND HARVESTING EQUIPMENT/NATURAL AIR CONDITION
Subject Category: Environment
Name: K ABHEESHTA KUMAR JAIN Std: 7
Guide: MOHINI BHANDARI
School: SRI SRI RAVISHANKAR VIDYA MANDIR, KARKALA

ABSTRACT:

Fresh air is essential inside the houses and buildings. Now a days we close our windows and doors to protect ourselves from mosquitoes and even from thieves too.
By this we can't get fresh air. I have found solution for this in the form of WIND HARVESTING EQUIPMENT. I have made one square box which has three holes in three sides for fixing three funnels. I have fixed three small flexible pipes to those funnels inside the box. These pipes are again together passed through a broad pipe which is again brought outside the box through another hole. The WIND HARVESTING EQUIPMENT is ready.

Usually wind passes from east or west. Due to the shortage of place, sometimes we can't keep the windows in proper direction and thus we can't get fresh air inside the house. In such conditions, this equipment is very helpful. This equipment can be placed outside the house above the window

by making a hole through which the broad pipe can be passed inside the house. The funnels helps to collect more air and the same is passed inside the house through the pipes.

This equipment is based on the rule that air passes from higher pressure area to lower pressure area and air is having the character of mobility. No doubt this is very cheap and best equipment which can be placed in all the directions of the house through which we can get fresh air into our house/buildings.

Project Code: ENV-09 (Team) (Jr) Online ID:171

Title: HERBAL SHAMPOO FROM BLACK SEED
Subject Category: Environment
Name: Jumainah Haris & Hina Fathima Std: 6
Guide: Mrs. Sindhu Sedhu
School: The Yenepoya School , Jeppinamogaru , Mangalore

ABSTRACT:

In the modern days the conception of shampoos and conditioners have increased tremendously.However,the present commercially available shampoos contain chemicals.Hence,the usage of herbal shampoo is desirable.

For thousands of years, people around the world recognized the tremendous healing properties of a legendary herb - Nigella Sativa ,or Black seed.This herb has had a resurgence in Western medicine.Black seed has proved itself a forceful ally against many ailments, such as those caused by bacteria viruses and common allergies. So,in this context we have prepared an ecofriendly antidandruff herbal hair conditioner using Black seed.

We tested Black seed paste with different types of hair(collected from saloon)and found that it gives a shiny texture to the hair without drying it.We also tested the PH of Black seed extract as well as oil and it was found to be a mild base.To prove the antibacterial property of Black seed, some dandruff samples from the scalp is cultured and is been treated with Black seed oil.From this analysis we presume to prove that herbal Black seed shampoo is ecofriendly, promotes follicle growth strengthens hair root and helps to prevent dandruff.

Project Code: ENV-10 (Team) (Jr) Online ID:172

Title: A Novel herbal material for Preserving Grains/seeds
Subject Category: Environment
Name: Nihali Shetty & Rashmi M Std: Grade 7
Guide: Akhila Bolar
School: The Yenepoya School , Jeppinamogaru , Mangalore

ABSTRACT:

Preserving of grains/seeds against insect attack is a major challenge to farmers and traders. Every year on a global scale it causes loss of few million dollars. Even though there are different preserving techniques such as gamma ray irradiation, chemical preservation (using

insecticides) and other methods are in practice, they have their own limitations. Such as, toxicity, side effects and are expensive in nature. Hence there is tremendous demand for developing herbal based, nontoxic and economical type of material as preservative for seed & grains.We hereby reporting a novel, nontoxic, cheaper herbal based material as an effective grain preservative. The same was prepared by mixing 1:1 proportion of shade dried fine powder of mango leaf & cashew nut tree leaf. About 3.0 grams of this ecofriendly powder can effectively preserve 1.0 Kg of grains/seeds for 6-8 months.Also we have performed few of the chemical characteristics of this herbal material such as Infra red spectra H

This is a simple and very ideal material for the preservation of grains.

Project Code: ENV-11 (Team) Online ID:174

Title: To study the effect of different plant products on the growth of Phytophthora arecae

Subject Category: Environment
Name: MADHURA .P.K & SAGAR.M Std: 10TH STD
Guide: REKHA P.D
School: SRI RAMAKRISHNA HIGH SCHOOL,PUTTUR

ABSTRACT:

Tests were carried out on the efficacy of different potential biomaterials on the inhibition of growth of Phytophthora arecae. The tested plants were Alstonia (bark), Yam (water extract), and Garcinia indica (leaf extract). Among these Garcinia indica leaf extract showed inhibition of Phytophthora arecae.

Experimental: Preparation of extracts was made using water and ethanol. Fungus was grown on potato dextrose agar (PDA) plates. For testing the growth inhibition, agar well diffusion method was used. For this, 50 microliters of each extract was added to 10 mm well made in the PDA agar plates inoculated with Phytophthora arecae. Plates were incubated at 32 degree Celsius in an incubator. After 24 h of incubation, agar plates were observed for clear zones around the agar wells to measure the growth inhibition. It was found that among the tested plant extracts, Alstonia (bark), Yam (water extract) could not inhibit the growth of the Phytophthora arecae but Garcinia indica ethanol extract showed good activity and Henna leaves extract showed moderate inhibition.

Project Code: ENV-12 Online ID:178

Title: Spray from cactus - A threat to flea beetle

Subject Category: Environment
Name: Anusha K. Std: 9
Guide: Nishitha K. K.
School: Indraprastha vidyalaya, uppinangady

ABSTRACT:

Cactus is a spiny plant which belongs to the family Cactaceae within the order Caryophllales. They live in dry environment and are usually found in many parts of the world. Our ancestors used cactus for fencing and grew them beside vegetable gardens so as to protect them from enemies. To know the scientific reason behind this I started working on cactus.

METHODOLOGY:

1. Juice of cactus was extracted and three different solutions were prepared.
   a. Cactus+salt
   b. Cactus+salt+sodium silicate+oil+water
   c. Cactus+salt+gum acacia oil+water
2. These solutions were kept for observation along with pure cactus extract to check its shelf life.
3. All solutions were sprayed on cowpea and ladies finger to repel pests.
4. Chemical analysis, pH, conductivity, surface tension, viscosity tests were conducted in SDM College Ujire.
5. Prepared mosquito coil adding cow dung powder, tamarind and fenugreek gum, organic scent or rose water and a small quantity of cactus juice.

RESULTS:

1. Found that cactus spray with sodium silicate has more shelf life comparing to rest of them.
2. The insect flea beetle which attacks cowpea and ladies finger repels when cactus solutions are sprayed on them.
3. Cactus extract contains polyterpenes and phenolic compounds where phenolic compounds respond to insect attack.
4. Mosquitoes repel when cactus mosquito coil is burnt.

Thus cactus insecticide and mosquito coil are natural, cheap, easily available, eco-friendly, non toxic products which can be prepared by the farming community themselves.

<u>Project Code</u>: ENV-13 (Team) **Online ID:183**

Title: STUDY OF ANTI-MICROBIAL PROPERTY OF ALSTONIA SCHOLARIS IN DIFFERENT SEASONS

Subject Category: Environment
Name: Shreeranjan Sharma.N & NIKHIL BHAT Std: 9TH STD
Guide: VASANTHI KEDILA
School: SRI RAMAKRISHNA HIGH SCHOOL,PUTTUR

ABSTRACT:

As a result of increasing environmental and health related problems caused by synthetic chemical pesticides currently used, suitable and non-hazardous innovative alternatives are being sought. The anti-microbial property of Alstonia scholaris both in nature and eco-system has attracted our attention, with the main goal of using this property in the biological control of plant pathogens. Alstonia scolaris is a medicinal tree which grows abundantly in south India, especially in the Western Ghats.

The outer layer removed bark of the Alstonia scholaris tree (1 Kg) should be cut into small pieces

and the pieces must be crushed, powdered and squeezed. The liquid obtained is heated at a temperature of 800 C for 5 min and then it has to be filtered. Thus the obtained liquid (225 ml) can be used as anti-microbial spray. We have used it for Abelmoschus esculentus (ladies finger), Brinjal, etc. against disease causing fungi and got the expected results.
We found out the surface tension, viscosity, pH value and electro conductivity of our product and compared it with that of the commercially available chemical products (fungicides). Proper viscosity and surface tension are maintained. The type of microorganisms which get destroyed or are prevented by our biospray, is yet to be known and is under process in the research laboratory. This spray is a natural, eco-friendly, non-toxic and it prevents water pollution and soil pollution unlike other chemical pesticides and also increases the nutritive value of the vegetables. It also reduces bio-magnification.
The tree is easily available in nature and it is of very low cost when compared to toxic chemical pesticides. As the liquid obtained contains anti-microbial property, it can be used as a spray on vegetables like cucumber, cauliflower, cabbage, etc. This spray can also be prepared in a large scale by adding barks and leaves of some other medicinal plants like lemon grass, nekki, etc

Project Code: ENV-14 (Team) Online ID:198

Title: Green Hearth- The best way to reduce the release of Carbon-dioxide into the environment

Subject Category: Environment
Name: Akshay G. K & Mohammed Tabish Hassan Std: 10
Guide: Mrs. Uma R Kaje
School: Indraprastha vidyalaya uppinangady,

ABSTRACT:

Due to the increase in the level of carbon dioxide in the environment, the temperature of the earth has been increased and caused global warming. So, due to the environmental dedication "Green Hearth" is an easy and effective Hearth which helps in decreasing the amount of carbon dioxide to the atmosphere.

METHODOLOGY

Materials required

- Plywood
- Aluminium pipe
- Cement
- Sand
- Bricks
- Fresh Lime water
- Plastic box
- PVC pipe
- L- bend
- Reducer

Take a plywood of required measurement and upon that with the help of brick, and the mixture of sand and cement in the ratio 5:7 create a hearth. Next, with the help of reducer, fix an aluminium pipe like a chimney. Next, with the help of L- bend fix a PVC pipe like a U-shape the

free end of the pipe must be dipped in the fresh lime water.
Chemical Equation:
Ca(OH)2+ CO2-> CaCO3+H2o
Calcium Hydroxide + Carbon dioxide gives Calcium Carbonate + Water.
Thus, the collected Calcium Carbonate must be mixed with POP to prepare it as a chalk.
Advantages: This setup can be used in houses, hotels, industries.

Due to the use of the "Green Hearth" the amount of carbon dioxide released to the environment gets decreased and thus the hazards due to the global warming can also be minimised. This Hearth is Pollution free, Safe, Eco-Friendly.
As a future plan, we will implement it in houses, hotels, industries which releases maximum Carbon dioxide from the hearth.

Project Code: ENV-15 (Team) Online ID:201

Title: Bio Ethanol from Dioscorea Aleta

Subject Category: Environment
Name: SHREE LAKSHMI PUTTUR & PRAJNA KODIYAADI Std: 9
Guide: JAYALAXMI. A.
School: SRI RAMAKRISHNA HIGH SCHOOL. PUTTUR

ABSTRACT:

Now days petrol, diesel, coal and many other energy resources are vanishing. Therefore there is a need of other energy resources in the field of transport and agriculture. The solution for this problem is the use of Bio-ethanol as a fuel.

Bio ethanol can be prepared by the convertion of sugar into ethyl alcohol by yeast, by the process of alcoholic fermentation, substances containing fermentable sugars and substances containing starch are used as raw materials.

The important raw material containing starch is cereals like rice, maize and potato like vegetables.
We have decided to use the root of Dioscorea Aleta for the production of ethyl alcohol by process of fermentation of glucose as biomass.

100gms of Dioscorea Aleta root are cut into slices and crushed and it is mixed with 5 volumes of water. The enzyme diastase is needed to hydrolyse starch to maltose. It is present in small amounts in barley and can be developed considerably upon germination. For this purpose barley is steeped in water for two days, and the allowed to germinate. Barley is then heated to 60 degree celcius to stop germination and crushed the barley. This is now added to solution of Dioscorea Aleta
Root and temperature is raised to 60 degree celcius. Within half an hour diastase converts the starch to maltose. Then 25gms of yeast is added to the maltose solution which converts maltose into glucose and glucose into ethyl alcohol. This is subjected to fractional distillation . Alcohol is obtained at 75 degree celcius .We did the distilation at chemistry lab ,vivekananda college ,puttur

Project Code: ENV-16 (Team) Online ID:206

Title: INSECTICIDE FROM CITRUS PEEL
Subject Category: Environment
Name: PADAVISHREE & G ASHWINI Std: 9
Guide: ROSHAN PINTO
School: CARMEL GIRLS HIGH SCHOOL, MODANKAP

ABSTRACT:

Principle: Citrus peel contains D-limonene. It can be extracted by distillation. It gives citrus fruit, their familiar aroma and therefore used in perfume and house hold cleaners for its fragrance. It has the property to kill the insects so it is also used as an insecticide. It is also flammable.

Description of the exhibit

Introduction: Insecticides are agents of chemical or biological origin that control insects. Control may result from killing the insect or otherwise preventing it from engaging in behaviors deemed destructive. Insecticides may be natural or man made and are applied to target in a myriad of formulations and delivering systems. Some 10,000 species of the more than 1 million species of insects are crop eating, and of these, approximately 700 species world wide cause most of the insect damage to man's crops, in the field and in storage.

Material Requiered :

100g of Orange Peel, 150ml water, 25g of salt, Spray bottle.

Procedure:

Take 100g of orange peel and cut it into small pieces. Add 150ml of water and 25g of sodium chloride to it. Boil till 15 minutes. Cool and then filter. The filtrate is then pour into a spray bottle and then used as an insecticide.

Application: 1. The extract from the citrus peel is natural, green and relatively safe which makes it a great alternative to using toxics, synthetic chemicals.

2. With its powerful antiseptic properties, it is a superb cleaning agent with a pleasant smell and is an environmently friendly.

3. It is Biodegradable, insect repellent, non toxic.

Project Code: ENV-17 (Team) Online ID:208

Title: An Organic Detergent from Coconut Palm
Subject Category: Environment
Name: P Divya Haritha & Nafeeya Std: 10
Guide: Shirly K
School: The Yenepoya School

ABSTRACT:

An organic detergent from coconut palm

In India, coconut tree is called 'Kalpavriksha' as each of its part from the fruit to the roots is useful. In many villages, earthen wares and metal wares are cleaned using ash from the dried parts of coconut tree. Similarly, it is used for removing the oil stain from clothes in Kerala where,

coconut is integral part of the peoples' lives. Generally, a plethora of synthetic detergents are available in the market for washing, and are expensive, synthetic and also cause pollution to our water/sewage system. Traditional practice of using coconut ash soaked water for removing oil stain was scientifically validated for developing a natural detergent. Ash collected from burning the coconut frond was mixed in water and kept to settle (1hr). Supernatant was carefully decanted and used as detergent to remove oil stain from clothes. Experiment was performed with different oils; coconut, sesame, mustard and motor oils. In all the cases oil stain removal was very efficient. Mechanism involves creating hydrophilic ends by binding of salts present in coconut ash to the non polar ends in oil. To prove the solution was tested for emulsification activity and found it formed stable emulsion of oil in water. Among the advantages, ash is a value added product from waste, residue available can be used for producing the organic fertilizer and water after washing can be reused for plants as it will not be toxic. This would be a safe good alternative for the expensive detergents.

Project Code: ENV-18 Online ID:211

Title: Automatic working of toilet room urinals

Subject Category: Environment
Name: Jnanesh.C Std: 12
Guide: H.K.Prakash
School: Vivekananda PU college

ABSTRACT:

At present in the world especiely in area of uneducated people living in that area the conditions of public toilet rooms is very bad because of lack of knowledge about using the modern toilet rooms.In present days technological ideas are improving rapedily,already the scientists have inveted automatic working of toilets during urination.But it requires electricity but iun some backword villeges are facing lack of electic supply in this region out of 24hrs they get 4to5hrs electric supply but the modern toilets with sensors does not works continuesly and also if it get damaged it took lot of time to get reparied in villeges so we introducing this new type of toilets which doesnot requires electric supply from any source of energy and electronic devices.
These toilets can be prepared with in minimum costs.It works in a simpler manner.
A spring is connected to the backside of the valve of the pipe and other side of the spring is connected to the base of the model and iron rod is connected to the front portion of the valve of the pipe to the footboard which is present in front of this model on which person stands during urination and valve of the pipe is connected in between the pipe which carries the water from the tank and to the flusher of urinal in between this valve is placed.
When a person comes and stand on the foot board of the urinal during urination the footboard moves slightly downward due to weight of the person the rod pulls the valve s,then valve of the pipe opens and water starts to flow through flusher in urinal and spring which is connected to valve and base in back portion of urinals it expands,due to expansion of spring it try to come to normal position.After urination the person steped down from the footboard the expanded spring pull the valve of the pipe towards it then valve will close then flowing water will stops.In this method the model works.
Conclusion:

This model is very useful and essential in ruralareas ,hospitals,hostels,busstand,railway station and all public places it avoids bad smell in urinal and also helps in maintainance of toilets in good condition and it doesnot require electric devices and electricity insted it use manpower unknowing to himself.

Project Code: ENV-19 (Team) (Jr) Online ID:220

Title: Eco-friendly plastic burner with water heater

Subject Category: Environment
Name: NARAYANA GANAPATI SABHAHIT & NAVANEESHA P. Std: 8
Guide: Sujnana U.
School: Sri Sathya Sai Loka Seva Vidyakendra, Alike

ABSTRACT:

ECO-FRIENDLY PLASTIC BURNER WITH WATER HEATER

Introduction:-

In this modern era we are having a difficult problem of maintaining the global warming. This has increased recently because of factories, industries etc. now we can ask to ourselves that whether science is a boon or a curse? It certainly is a boon but also a curse.

Plastics are one of the curses now-a-days. It is true that we can do many things with it. But it is harmful for the environment. We can't decompose it.

Problems by plastics:-

*when plastics are burnt, they release harmful gases which can cause breathing problems, malaria etc if inhaled.

*If they are decomposed in the soil, they affect the water table.

Materials required:-

One big metal can
A bent metal pipe
Two buckets full of water
Match box
waste plastic things
copper pipe

construction and working:-

combustion chamber
air windows
heating coil
Dissolvation of harmful gases.

Working principle:-

In this system, plastics are burnt in the combustion chamber and the harmful gases are released to water through a bent metal pipe. then the gases which are liberated are dissolved in the waste water. At the same time, the copper pipe is heated and the clean water on the other side is heated.

Advantages:-

Waste plastics can be burnt in an eco-friendly manner.
Hot water can be made without much money. (Lpg,electricity or dry lumber is not required. Only plastics or other agricultural wastes are needed.

Project Code: ENV-20 (Jr) Online ID:227

Title: Extracts of castor and mustard seeds—its use as an insecticide and its enriching soil fertility properties

Subject Category: Environment
Name: Deeksha Parvathi Std: 8
Guide: Mr. GopiKrishna
School: Vivekananda English Medium High School. Puttur

ABSTRACT:

Extracts of castor and mustard seeds—-its use as an insecticide and its enriching soil fertility properties

Crop protection plays a vital and integral role in modern day agricultural production. The ever increasing demands on yield and the intensification of farming practice, have increased the problem of pest damage, and hence control. Inspite of development of various modern synthetic insecticides and pesticides, loss of crops and stored grains due to attacks of pests and diseases is still considerable due to vector versatility and increasing tolerance of pests to these chemicals. In recent years the use of pesticides, particularly of insecticides has become very common. Excessive and indiscriminate use of these toxicants has unlimited hazards for human beings and animals. Pesticides and insecticides of plant origin may be indigenously available but are considered comparatively safe.
In the present study the extraction of Castor (Ricinus communis) and mustard seeds (Brassica nigra) are carried out by using ethanol in soxhlet extractor. The alcoholic extracts of Castor and mustard seeds are combined with acacia gum.
The insecticidal activity of alcoholic combined extracts of Castor and mustard seeds were investigated by mixing with the soil surrounding the infected vegetable plants. The study also includes detailed Phytochemical analysis of above extract.
Based on our present findings it is concluded that the combined extracts of Castor and mustard seeds could be used as an insecticidal for the prevention of diseases of plants caused by insects and its influences on the fertility of soil also.

Project Code: PHY-01 (Team) Online ID:110

Title: Electrostatic precipitator

Subject Category: Physics
Name: Nishar Mohiyuddin & Mohiyuddin Saleeth Std: 10th Std
Guide: Ayswarya Menon
School: Al-Badriya english medium school,

ABSTRACT:

Electrostatic precipitator is device used to control air pollution .It works on the principle of attraction of opposite charges.Since magalore is a industrial area its an effective method to control pollution.
The smoke produced during the burning of any fual contains charged particles. When these charged particles are passed through a charged capacitor, they get attracted towards the plaves of capacitor – such a device is called electrostatic precipitator. The chimney described in this experiment is the electrostatic precipitator. When high voltage is passed it acts as precipitator – all the charged particles get attached to the chimney

It is applicable for large scale industry as they produce large amount of toxic. This method decreases health issues due to air pollution. This method decreases acid rains and depletion of ozone layer.

Project Code: PHY-02 **Online ID:124**

Title: CONSTRUCT YOUR OWN DIFFRACTION GRATING

Subject Category: Physics
Name: MAHESHA.K Std: 9
Guide: Clement Pinto
School: St.Philomina High School, Puttur

ABSTRACT:

CONSTRUCT YOUR OWN DIFFRACTION GRATING

A diffraction Grating is an optical device which consists of a large number of parallel equidistant slits of same width. An experimental grating is generally made up of a glass plate. It costs about 2000 rupees. I constructed a simple experimental diffraction grating. The raw materials used for it are easily available materials like fiber plates, threads, gum etc. The cost to construct the grating is very less, as low as 20 rupees. But it is compatible with the available grating in market.

I constructed the grating with different number of lines per unit length. Using 625 nm laser beam as monochromatic light practically verified number of lines per unit length in the grating. The laser beam was obtained by semiconductor laser unit of model AS 201 from Kamaljeeth instruments of wavelength 625 nm with 5 mW output power. We did the same experiment using the 500 LPI grating available in the market and compared our result. It is found that the constructional error in our grating is negligibly small. We also verified the uniformity in the slit width of our grating. We experimentally showed the effect of variation in the number of lines per unit length on the diffraction pattern by constructing the grating of different number of lines per unit length.

The main advantages of this work are

i) Cheaper and compatible accuracy
ii) Any school teacher/ student can construct the grating
iii) Easy demonstration of the diffraction
iv) The effect of variation number of lines per unit length can be demonstrated easily.

Project Code: PHY-03 (Team) (Jr) Online ID:170

Title: DEVELOPING A MANUALLY OPERATED MOBILE CHARGER
Subject Category: Physics
Name: NARASIMHA & SHASHANK Std: 7th
Guide: POORNIMA V.P
School: THE YENEPOYA SCHOOL

ABSTRACT:

Mobiles are one of the basic necessity of modern life. Nowadays we recieve the mobile signals in remote villages also. But charging the mobile in areas where electricity is not available is big task. To do charging in easy way we are trying to develop a charger using a small dynamo.

Our purpose is to develop a charger using dynamo. We collected a cycle dynamo.the dynamo used to generate power to travel in night. The shaft of the dynamo is rotated manually. Waste gear wheels are used to increase the rpm so as to get required power from the dynamo. The power generated from dynamo is modified suiting the mobile.

Project Code: PHY-04 (Jr) Online ID:200

Title: Car Parking Through Rotatory Indexing
Subject Category: Physics
Name: Madhura K Std: 8
Guide: Purandaranarayana Bhat K
School: Jnana Ganga Central School,Bellare

ABSTRACT:

In urban area car parking management is a big headache.Here is an innovative approach.In cities parking car and then reversing the car for front end of the car at front in a small space is not an easy task.It needs more space and a long practice.It also consumes much energy and more time.Taking car reverse from shed to road is risky may lead to accident too.My new innovative model deals with a board attached with ball bearings beneath it.We can rotate the board using muscular energy or mechanically.So as to make front end of the car towards front within a minute.This technique will save energy,time,space and reduce the risk of reverse driving.Using this innovative rotatory indexing table we can park as we like or as vastu sashtra.The underground land is used as water tank or rain harvest pit.

Advantages of the model:

1)easy to operate
2)zero maintenance
3)pollution free
4)construction is simple
5)durable

This model is to give the way for providing bigger parking board.The model is a gift for mankind.The device can be used anywhere,anytime.