GOVERNMENT ARTS & SCIENCE COLLEGE
KAMAREDDY (DIST)-503111

(NAAC Accredited with 'B' CGPA 2.77)

STUDENT STUDY PROJECT

ON

ESTIMATION OF QUANTITY OF CAFFEINE IN TEA SAMPLES

2019-2020

DEPARTMENT OF CHEMISTRY

GOVERNMENT ARTS & SCIENCE COLLEGE
KAMAREDDY – 503111
Accredited With B (CGPA 2.77) by NAAC
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CERTIFICATE

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ACKNOWLEDGMENTS

FirstofallI wouldliketothank myChemistry lecturer**A.Srilatha**Forprovidinga helping handin making myproject titled "**EstimationOf CaffeineInTeaSamples**".

CONTENTS

INTRODUCTION

Discovered in the early 1827, caffeine was originally called as 'theine'. It was then found that caffeine of coffee and 'theine' of tea were almost identical and later caffeine completely replaced the term theine. Technically, caffeine in tea and coffee are alike. Its primary discovery dates back to the time of reign of Emperor Shennong of China when he accidentally discovered a fragrant and reenergizing drink when certain leaves fell into boiling water. Another lead traces its discovery to Ethiopia where a goat herder observed goats that became restless at nights after consuming coffee plants and he consumed the same to result in the same effects within him. Caffeine in a natural constituent in coffee, tea, chocolate and some cola drinks. It is externally added to products like diet pills, analgesics and soft drinks. Most plants, including coffee, tea, cola and cacao produce caffeine from the purine xanthine. The United States Food and Drug administration has estimated that 80 % of the world's population consumes caffeine in any of the forms. Tea is the second highest consumed beverage in the world, only next to water according to the Tea association of USA. It is the world's most consumed psychoactive drug. Although most psychoactive drugs are illegal, caffeine is permitted in terms of usage all over the world. Tea contains notable amount of caffeine that has a number of health benefits. Caffeine has both positive and negative effects.

Teaisthemostcommonlyandwidelyused softbeverageinthehousehold.Itactsasa stimulantfor c e n t r a l nervous system and skeletalmuscles.Thatiswhy tearemoves fatigue, t i r e d n e s s a n d h e a d a c h e .It also increasesthe capacityofthinking.Itisalso usedfor loweringbody temperature.The principalconstituentoftea, whichis responsiblefor allthesepropert ies,isthe alkaloid-caffeine.The amountofcaffeinein tealeaversvariesfromsampletosample.

Originally itwasthought t h a t caffeineis responsibleforthetasteandflavoroftea. Butpurecaffeinehas beenfoundtobea tasteless whilesubstance. Therefore,the tasteandflavorofteaisduetosomeother substancepresent init. There isa littledoubtthatthe popularityofthe xanthenes beveragesdependson their stimulant action,althoughmostpeopleareunawareofanystimulation.Thedegreetowhichan individualisstimulatedbygivenamountof caffeine variesfromi n d i v i d u a l toindividual.

For example, some peopleboast their ability to drinkseveral cupsof coffeein eveningandyetsleeplikea long,onthe other hand therearepeople who areso sensitivetocaffeinethatevenasinglecup ofcoffeewillcauseareponseboardingon thetoxic.

Thexanthenesbeveragesalsocreate a medicalproblem.Theyare dietaryofa stimulantofthe CNS.Oftenthe physicians facethequestionwhetherodenycaffeine- containing beveragestopatients ornot.Infactchildrenare moresusceptiblethan adultstoexcitationbyxanthenes.

Forthisreason, teaandcoffeeshouldbe excludedtheirdiet.Evencocoaisofdoubtfulvalue.Ithasahightanninc ontentmaybeashighas 50mgpercup.

Afterallourmainstressisonthepresence ofcaffeineinxanthenesbeveragesandsoin thisprojectwewillstudyandobservethe quantityofcaffeinevarying indifferent samplesoftealeaves.

Physical and chemical properties of caffeine:-

Caffeine belongs to the family of heterocyclic compounds known as 'purines' and is generally odourless. It is a white and crystalline powder in its pure state and has a bitter taste. The synthetic name is 3,7- dihydro-1,3,7- trimethyl-1H-purine-2,6-dione. The chemical formula is C8H10N4O2. Caffeine has 49.98% carbon, 28.85% nitrogen, 16.48% oxygen and 5.19% hydrogen. Caffeine's molar mass is about 194.19 g/mol. It has a melting point of 235-
2380C and has a density of 1.23 g/cm3. With a pH of 6.9, it is slightly basic. Caffeine is highly soluble in water athigh temperature, moderately soluble in water and ethanol. It is also soluble in pyridine, hot water, alcohol, acetone,ether, chloroform, benzene.

Psychological effects of caffeine:-

Caffeine has the ability to stimulate the Central Nervous System (CNS) of the human body which helps one feel more alert and increases the heart rate accompanied by change in blood pressure. It gives them increased energy and is an excellent agent in promoting kidney diuresis. It acts as a respiratory and cardiac stimulant. While some people
experience excitement, it has reverse effects on others. Caffeine affects people quite differently from person to person. Some possible symptoms are restlessness, nervousness, insomnia, flushed face, tachycardia and gastrointestinal disturbance. All the above symptoms vary from person to person and also on the amount of caffeine consumed. Tea also contains a small amount of a more potent stimulant, theophylline. The ability to postpone exhaustion is what makes people consume it in large quantities in the form of tea or coffee. The reason why people become alert when they consume caffeine is that the molecule fits into the binding sites meant for adenosine, a neurotransmitter that creates a calming effect in the body. Our body has much greater affinity to caffeine than to adenosine and the close structural resemblance of caffeine with adenosine makes it easy for caffeine to fit into the binding sites of brain cells. As a result of this, adenosine meant to produce a feeling of tiredness has no way to showcase themselves in the host individual. Some of the brain's own natural stimulants work effectively when adenosine receptors are blocked and all excess adenosine floating around in brain causes the adrenal glands to secret adrenaline which is another stimulant. Caffeine improves thought-processing and focus. It increases memory
according to a research in John Hopkins University. Caffeine mixed with carbohydrates replenishes muscle glycogen concentration quickly after exercise. It detoxes the liver and cleanses the colon when taken as caffeine enema. It is known for its stimulation of hair growth on balding men and women. Providing protection against Parkinson's disease and Alzheimer's disease is an important advantage of consuming caffeine containing
substances. It also provides protection against cataract and skin cancer
In people who take advantage of this process on a daily basis, the brain's chemistry and physical characteristics change over time as a result of over-consumption. Brain cells grow more adenosine receptors which is an attempt made by the brain to maintain equilibrium in the face of a constant onslaught of caffeine, with its adenosine receptors so regularly plugged. This shows why continuous coffee drinkers build up tolerance over time and get addicted to consuming caffeine containing substances. It takes more caffeine to block the increased

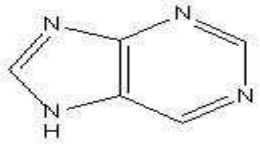
number of adenosine receptors and to produce the desired revitalizing effect. Sudden stop of

caffeine consumption can have adverse effects in regular consumers as the brain would have developed a sort of dependency over time. It causes lots of problems including headache. All this combined causes caffeine addiction. Caffeine is easily oxidized to uric acid, a very weak organic acid that is barely soluble in water. Our bodies don't have the necessary enzymes to digest uric acid and precipitation of uric acid results in kidney stones.

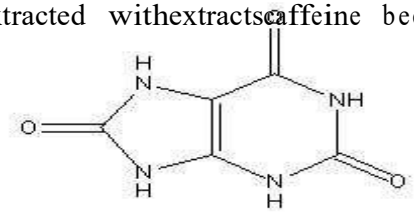
Theory

The most importantmethylatedalkaloidthatoccurs naturallyiscaffeine.Its molecular formulaisC8H10N4O2.ItsIUPAC nameis1, 3,7-trimethylxantheneand common name is1-methylated thiobromine.

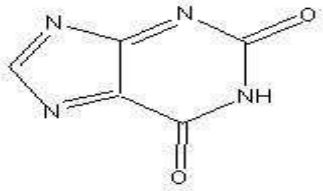
Purelyit iswhite,crystalline solidinthe formofneedles.Itsmeltingpointis123^{0}c.It isthemainactiveprinciplecomponentof tealeaves.Itispresentintealeavesupto3%andcanbeextractedbyfirstboilingthe tealeaveswithwaterwhichdissolvesmany glycoside compounds inaddition tocaffeine.The clearsolutionisthentreated withleadacetateto precipitate theglycosidecompoundsintheform oflead complex.The clearfiltrateisthenext extracted withextractscaffeine becauseitis moresoublein itthenwater.



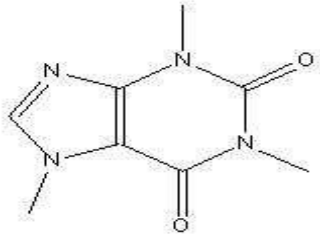
purine



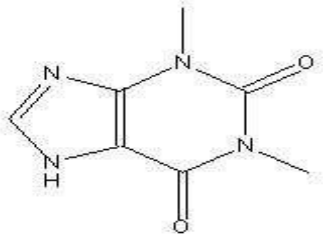
uric acid



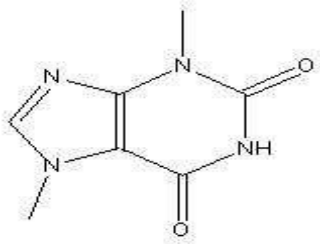
xanthine



caffeine



Theophylline



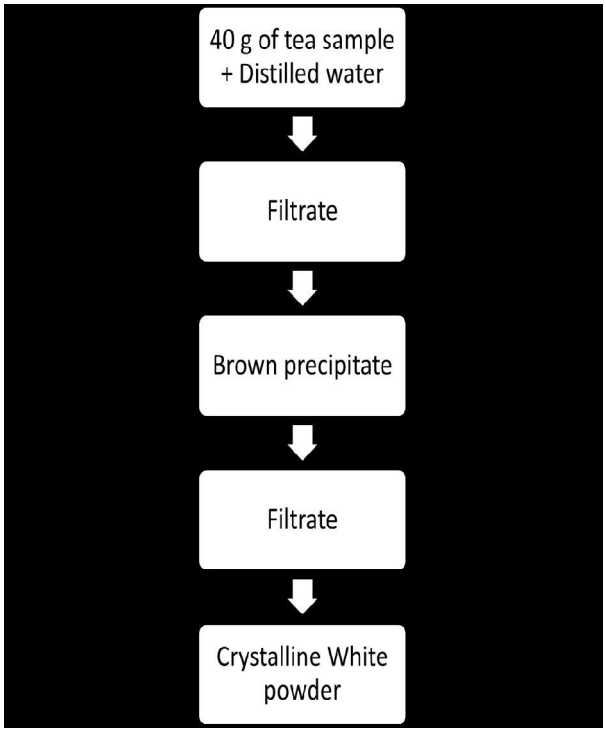
Theobromine

MATERIALS AND METHODS

Tea samples aretaken fromRed Label, Gemini, Green tea.

Procedure

First of all,50 grams of tea leaves were taken as sample and150 ml of water was added to it in a beaker. Then the beaker was heated up to extreme boiling. The solution was filtered and lead acetate was added to the filtrate,leadingto theformationof acurvybrowncoloredprecipitate.Wekeptonaddingleadacetatetillnomore precipitatehasbeenformed.Againsolutionwasfiltered.Nowthe filtrates obtainedwasheateduntilithadbecome50ml.Thenthesolutionleftwasallowedto cool.After that,20mlofchloroformwasaddedtoit.Soonafter,twolayersappearedinthe separatingfunnel.Weseparatedthelower layer.The solution thenexposed to atmosphereinorder to allowchloroformtogetevaporated.The residueleftbehindwascaffeine.Thenweweighedit andrecordedthe observationssimilarprocedurewas performedwith different samplesoftealeaves andquantity ofcaffeinewasobserved in them.



OBSERVATION

1.RedLabelTea(BrookeBond).

Weight of China dish	46.60gms
Weightofchinadish withprecipitate	47.20gms.
Amount ofcaffeine	0.60gms

2.Gemini Tea(Lipton)

Weightofchinadish	46.60gms
Weightofchinadish withprecipitate	47.15gms.
Amount ofcaffeine	0.55gms

3.GreenLabelTea(Lipton):

Weightofchinadish	46.60gms.
Weightofchinadish withprecipitate	47.05gms.
Amount ofcaffeine	0.45gms.

Uses of Caffeine:

1. In medicine, it is used to stimulate, central nervous system and to increase flow of urine.

2. Because of its stimulating effects, caffeine has been used to relieve fatigue. But itis dangerous and one may collapse if not consumes it under certain limit.

3. Caffeine is also used in analgesictablets, as it is believed to be a pain reliever. It is also beneficial in migraines. Analgesic

Effects of Caffeine

1. It is psycho-stimulant.

2. It improves physical and mental ability.

3.Its effect in learning is doubtful but intellectual performance may Improvewhere it has been used to reduce fatigue or boredom.

4. When administered internally, it stimulates heart and nervous system and also acts as diuretic. On the contrary their excessive useis harmful to digestion and their long use leads to mental retardation. Diuretic

RESULT:

1. QuantityofcaffeineinRedlabeltea is 60mg/sampleof50gm.

2. QuantityofcaffeineinG e m i n i tea is 55mg/sampleof50gm.

3. QuantityofcaffeineinG r e e n t e a is 45mg/sampleof50gm.

Graphically plotting various tea samples in accordance with the amount of caffeine present in them we present a stunning find.

The order of quantities of caffeine in different samples of tea leaves.

Red label > Gemini tea > Green tea

REFERENCES

[1] Caffeine, Retrieved December 2, 2016 from https://pubchem.ncbi.nlm.nih.gov/compound/caffeine#section=Top

[2] Tea Growing Regions, Retrieved December 5, 2016 from http://www.indiatea.org/tea_growing_regions.php

[3] Stephen Cherniske (1998)., Caffeine Blues : Wake up to the hidden drugs of America's #1 drug, pp 280 – 284

[4] Gene A. Spiller (1997)., Caffeine, pp 105 - 109

[5] Goodman and Gillman., The Pharmacological basis of Therapeutics., 1990, 8th edition, Vol 1,pp 618-621

[6] Encylcopedia of Chem Technol., Vol 3, pp 910 – 913

[7] MC Wardle, MT. Treadway and H.de Wit., Pharmacol.Biochem.Behav (2012), pp 523 – 527

[8] Bennett AW, Bonnie KB (2001)., The world of caffeine : The science and culture of the world's most popular drug, pp 227 – 228

[9] Dhaka NP, Kumar K., To isolate caffeine from the given tealeaves laboratory skills- Chemistry, Pradeep publications 1st edition 2006

[10] Kirmer DA., Caffeine use and abuse in psychiatric clients, 1988

A COMPARATIVE STUDY ON HOME LOAN PROCEDURE IN SBI &HDFC BANKS IN KAMAREDDY

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A PROJECT REPORT ON AWARENESS OF DIGITAL PAYMENT SYSTEM IN KAMAREDDY &NIZAMABAD DIST

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2019-2020

Introduction

- A fish culturist needs different types of ponds for rearing various stages of fish. It decides the layout of fish farm.
- Designing of fish farms and size of the ponds depends on the species of the fish to be cultured.
- Soil, water and drainage, which makes major role in maintaining of the pond.

Construction of the Fish Pond

- ***Location of fish pond***
  - Soil types
  - Water supply
  - Topography
- ***Layout of fish pond***
  - Hatching pit
  - Nursery ponds
  - Rearing ponds
  - Stocking ponds
  - Marketing ponds
  - Brood stock pond

Layout of fish ponds

- Nursery pond: The smallest pond measures about 0.02-0.05 ha, water is about 1 ml deep
- Rearing ponds : Larger than Nursery ponds measures about 0.08-0.02 ha,water is a

I. SITE SELECTION OF FISH POND

- The success of fish farming and economy will be achieved by Finding the perfect site .

Site character

- Space of 200 Meters square to construct a pond.
- Better to select flat land with slight gradient .
- Sites with slight gradient (0.5-3.0).
- Avoid areas with large undulations , rocks and with large trees.

SOIL QUALITY

Physical quality of the soil

- ✓ Pond soil should have enough clay to hold water .
- ✓ 100% clay may crack pond dike for exposing sunlight .

Chemical quality of the soil

- ❖ Pond soil should not be acidic .
- ❖ Acidic soils make the pond water acidic.
- ❖ Acidic water retards growth of fish .
- ❖ Acidic water causes stress situation and diseases.

Maintenance of the Fish Pond

- Many factors will effect your water features immediately when you construct a pond.
- If we cannot maintain the fish pond, it becomes unhealthy and an ugly structure and not suitable for the aquatic life.

Steps for maintaining Fish Ponds.

1. **Cleaning the pond regularly .**

- Ponds accumulated dirt, debris and leaves etc..
- Leaves can release toxic gases, when decaying simultaneously it may destroy ecological balance .
- Cleaning of pond can control of algae.

- **Suggestion :**

- It is better to use skimmer net to collect and remove leaves debris.
- Using of pond vaccum cleaner powerful enough to remove decaying organic matter.
- This cleaning of pond may be suitable in early spring season because when the aquatics are less active.

2 .Growing of Water Plants.

- In early summer, it is best to introduce new plants because water is warm and capable of supporting rapid plant growth.
- For every 5 weeks, boost the growth of plants with suitable fertilizers.

Suggestion: Immediately removal of dead plants may prevent disruption of water chemistry (or) formation of toxins.

- Manage of near by plants, it may effect negatively by falling leaves.
- Precaution: Do not use toxic (or) inorganic pesticides because sum aquatic animals may intake plants.
- Keep thinning or culling the plants and ensure their leaves do not cover the whole surface of water

Plants: Lilies , Oxygenators, Marginals , Floaters and marshes.

3 .Control of Ice in Winter

- In the season of winter, ice freezing is the problem at depth. It should be less ice because very low temperature put your aquatics in danger.

Prevention of freeze

- Installing heater
- Floating a ball or de-icer on surface
- Floating wood on surface
- Use PVC material or lumber to construct the cover

Precautions：Do not break ice on surface of pond. It may harm aquatic life.

4. Control algae growth

- Algae is beneficial to aquatic animals , but if it grows excessively it leads to danger of micro plants.
- By using Natural and Artificial methods control algae in ponds.

5. Removal of algae

- ✓ Rake is physically remove non – flowering plants.
- ✓ Algaecides [or] dye .
- ✓ Ultraviolet water purifier (or) sterilizer to control Micro plants.
- ✓ API pond algae fix - keep clean and clear.

6 . Maintain the Right water level

❖ In Hot summer water drains faster .It remains lack of oxygen top up the clean water.

Precaution : Avoid tap water because solutes , encourage growth of the algae.

Suggestion : By installing water supplying system consisting to fill the value and filter to the Three quarter of structures full through out the year.

7 . Maintain Temperature

- To bring Optimized temperature in Hot summer with hot temperature use sprinkle (or) spray cold water.
- To bring optimum temperature in cold winter use heating system.

Advantages of Fish Pond

A large part of the world's fish culture production relies on the use of freshwater ponds which **hold and exchange water**, receive fertilizer or feed, and allow for holding, rearing and harvesting of fish.

Replenishment. Fish farming allows us to replenish the food fish supply at a faster rate than the oceans can produce it, allowing suppliers to keep up with demand.
Pro: Employment. ...
Pro: Nutritional Provisions

Disadvantages of Fish pond

Fish can take in harmful chemicals from the water and the food they eat. Chemicals like mercury and PCBs can build up in their bodies over time. High levels of mercury and PCBs can harm the brain and nervous system.

Many dreams and ambitions go to the grave, sadly because they were not funded. I wouldn't blame the government for this, because we are the government ourselves. I think the people in power should take a greater percentage of the blames because they do not make provisions to help us achieve these dreams.

2018-2019

GOVERNEMENT ARTS & SCIENCE COLLEGE KAMAREDDY.

GOVERNMENT ARTS & SCIENCE COLLEGE KAMAREDDY.

AWARENESS ON ORGANIC FARMING

CERTIFICATE

Certified that student study project entitled “Awareness on Organic Farming”
Bonafied work of following students under the supervision of Sri.K.Ashok

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AWARENESS ON ORGANIC FARMING

- CONTENTS:

ABSTRACT :-

- This project was developed by B.Sc (ZFC) IInd year students of Government Arts and Science college, Kamareddy. Under the guidance of Sri.K.Ashok, lecturer in Zoology on the topic of Awareness on Organic Farming.

  We recently visited a Organic Farmer near Bibipet village and we spend some time with him talked about how he was maintaining healthy crop without using synthetic pesticides.

  He replied that, he treat earth as goddess and he inspired by the speeches of 'Palekar's zero budget' agriculture methods and he continuing the same process till now.

- We started asking about how he preparing these organic material to his crop regularly and how much cost he will spend to produce Organic meterial.

  He replied that “I will not spend much cost to this. I will collect all things from my home and surrounding environment”.

  Today he was earning 80k per acre without harming environment and not spending much expenditure.

  So as a responsible Science students to Save Environment, We decided to bring awareness on organic farming.

Introduction:-

- The idea of organic agriculture has been introduced by Sir Albert Howard, **Father of organic farming** about 80 years ago.

Organic farming is a production system which avoids or largely excludes that use of synthetically compound fertilizers, pesticides growth regulators, genitically modified organisms.

Organic farming which is a holistic management system that promotes and enhances agro-ecosystem health includes Bio-diversity, biological cycles and biological methods.

- Organic material can increase farm productivity, repair decades of environmental damage and turning small farm families into more sustainable netwok if they organize themselves in production, certification and marketing.
- Organic agriculture takes an important role in treating soil erosion and encourage in production of Bacterial and Fungal Bio-fertilizers.

- Organic Farming is the only way to make our future generations into Healthy manner.

Objectives :-

- The cheif objective is not to use synthetic fertilizers which will damage the Environment and People's health.
- To control soil, water and environmental pollution.
- To reduce farming expenditure on agricultural lands.
- To produce superior quality of manure from organic wastage.
- To get more profit with less expenditure.

Methodology

- We collected more information of organic farmer during our feild work.
- Preparation of organic manure like neem oil, vermi compost, Bacterial biofertilizers.

1.NEEM OIL :-

- Preparation :-

  1. Collect Neem leaves and fruits and after washing dry it with a soft cloth.

  2. The tree seeds should be crushed and add some water as a solvent.

- 3.Neem oil does not readily mix with water, you'll need to use an emulsifier like a mild liquid soap.
- 4.To make one litre of general pupose neem oil spray, mix 5ml neem oil, 2ml of liquid soap in 1 litre of water.

- Application and its uses :

  Neem oil is often applied as a spary.

  Neem oil has a dual purpose in agricltural feilds as both as pesticide and fungicide. It works on arthopod pests that often eat vegetables, Fruits and grains on feilds. Neem oil also controls commom Fungi that grow on vegetable plants. It dont effects the pets and earth worms.

2)Preperation of Vermi-compost :

- Collect the biomass and place it in a tank or vermi compost bed.
- prepare cow dung slurry and sprinkle it on the heap for quick decomposed.
- This Biomasss consists of partially decomposed cow dung, dried leaves and other biodegradable wastes.
- Continue adding the both chopped bio mass and partially decomposed cow dung layer into the tank up to depth of 0.5-1.0.
- Release the earthworm species like Red wigglers and white worms over the mixture and cover the compost mixture dry straw or gunny bags.
- Cover the tank with thatch roof to prevent ants, snakes, mouses...etc.check temperature regurrly to avoid the compost from over heating.

- Result:

- After the 24th day, around 4000 to 5000 new earthworms are intoduced and the entire raw materials is turned into the vermi compost.

3) Rhizobium Bacteria :

-Rhizobium bacteria plays a key role in maintaining Nitrogen suffeciently in plants and soil.

-Leguminous plants includes Peas, Beans and specially in Telangana we use Dhaincha {Jilugu} to improve nitrogen content in soil.

-By crop rotation, It helps to develop the quantity of nitrogen in agricultural lands.

- Panchagavya :

Panchagavya is used as a fertilizer and pesticide in agricultural operations.

- It plays a major role in growth of plants and also incresing immunity in plants.
- It is prepared from cow dung, cow urine and cow milk, curd and ghee.
- It is prepared by these five ingredients so it is called as Panchagavya.
- These five ingideints are mixed well and kept a side in a container for a week days.
- Then it is applied after transplantaion on plants by spray, will improve the growth in plants and protects the plants from harmful pests.

PREPARATION OF AGRICUTURAL LAND BEFORE FARMING :-

- Partly decomposed Cow dung should be added to agricultural lands and it should be mixed with the soil by using Cultivator.

- Legume seeds sowed on lands a light irrigation should be applied they start growing. When they will come to certain age using rotovator they are crushed and decomposed into soil. They act as green manure and helps in increasing nitrogen content.

- Vermi compost is applied in feilds before sowing the seeds.These compost enriches the nutrients in the soil and It also helps the soil to retain the moisture.

- The seed treatment is done by using Neem extract which helps to kill harmful pests and Fungi above seeds.

After plantation :-

- Weed management :
- From ancient days people are using hands for removing weeds but now a days they are using synthetic fertilizers which are harmful for enviroment it is better to remove it by hands and also cow dung reduces the growth of grass.

- Pest management:
- The main strategy to combat harmful pest is to bulit up a population of benficial insects,whose larva feed off the eggs of pest.
- The key to buliding a population of beneficial insects is to established borders around fields with blends of flowering plants.
- Panchagavya improves
- Spraying Neem oil on plants will helps to protect from harmful pests and Insects.

- Diseases management :
- Plant diseases are the major constraints for reductions in crop yield and quality in organic and high input production system.
- Proper fertility management to crops throught balanced supply of macro and micro nutrients and adoption of crop rotation have show to improve the resistance of crop to certain diseases.
- The beneficial organisms like microbes, fungi and bacteria keep the harmful bacteria and fungi that causes diseases in check.
- Harvesting :
- After completion of harvesting the crop the remaining plants shouldn't be burned they should get directly decomposed into soil.

- Advanteges of organic farming :
- It helps to maintain enviroment health by reduseing the level of pollution.
- It reduces human and animal health hazards by redusing the usage of synthatic fertilizers.
- It reduces the cost of agricultural production and improves the soil health.
- It ensures optimum utilisation of natural resources for long- term benifit and helps in conserving them for future generation.
- It improves soil physical and chemical properties and help in preventing soil erosion.
- Farmer will get more profit and takes less time to sell his crop.

- Disadvantages of using chemical fertilizers :
- Chemical fertilizers are more expensive than natural fertilizers .
- They may contain ingredients that may be toxic to the skin or repiratory system.
- Chemical fertilizers can cause long-term imbalances in soil pH and fertility.

- Chemical fertilizers will give a bad impact on benificial insects and worms.

- Conclusion :-

- The organic farming is the best for farmers due to less expenditure and high income.

  The Farmer will get good name and fame in the society by not using harmful pesticides.

- By organic farming, we are able to protect the environment and also able to bring the fertile lands.

- “FOLLOW THE ORGANIC FARMING AND SAVE SOIL HEALTH FOR FUTURE GENERATIONS.”

- THANKING NOTES

Thank you to the all members, Lecturers, Organic Farmers of Nizamabad and Kamareddy.

Special thanks to Sri.Chandrakanth sir, Principal of Governement Arts and Science College and Sri.K.Ashok sir, Lecturer in zoology , Kurla Seetharamulu, Organic farmer, Bibipet.

Submitted by:- 2017-2018

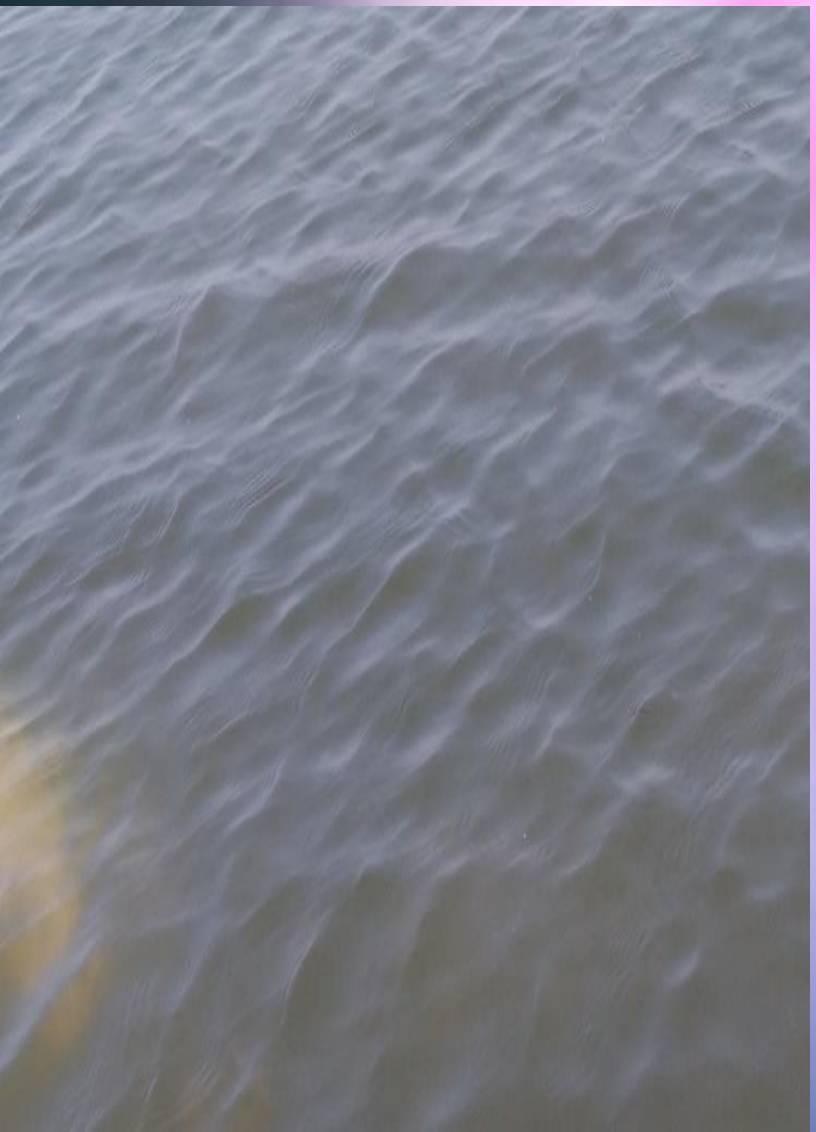
S.NO.	Examine Lakes	Student Names	Group	H.T No.	Testing Place
1	SARAMPALLY LAKE (SAMPLE-I)	A.DAHSARATH	BSC ZFC	17055009461001	SIDDIPET
		A.VAISHNAVI	BSC ZFC	17055009461002	SIDDIPET
		A.ENOSH	BSC ZFC	17055009461003	SIDDIPET
		B.RAMYA	BSC ZFC	17055009461007	SIDDIPET
		B.RAMESH	BSC ZFC	17055009461005	SIDDIPET
		B.JHANSI	BSC ZFC	17055009461008	SIDDIPET
		B.PRAVEEN	BSC ZFC	17055009461009	SIDDIPET
		D.KALYAN	BSC ZFC	17055009461015	SIDDIPET
		M.SAGAR	BSC ZFC	17055009461025	SIDDIPET
		R.BHARGAVI	BSC ZFC	17055009461032	SIDDIPET
2	TEKRIYAL LAKE (SAMPLE-II)	N.SAIKUMAR	BSC ZFC	17055009461029	NIZAMABAD
		N.SHAILAJA	BSC ZFC	17055009461030	NIZAMABAD
		Md.NAYAB	BSC ZFC	17055009461027	NIZAMABAD
		T.ROHIT	BSC ZFC	17055009461037	NIZAMABAD
		T.NAVEENA	BSC ZFC	17055009461038	NIZAMABAD
		T.ANJANEYULU	BSC ZFC	17055009461036	NIZAMABAD
		S.MAMATHA	BSC ZFC	17055009461034	NIZAMABAD
		G.SOUJANYA	BSC ZFC	17055009461019	NIZAMABAD
		CH.JAYASRI	BSC ZFC	17055009461014	NIZAMABAD
		M.RAMYA	BSC ZFC	17055009461026	NIZAMABAD

Water quality test in various lakes in kamareddy

- SARAMPALLY LAKE
- TAKREEL LAKE

Introduction of the topic

Importance of the water

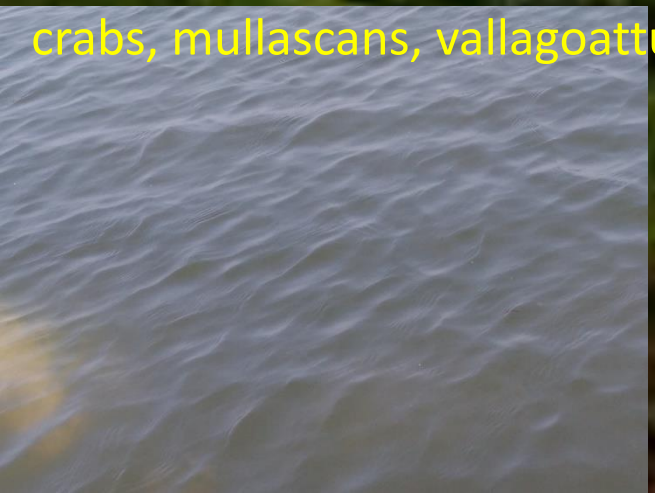


- World conservation strategies stress the importance
maintaining healthy ecosystems and genetic diversity.
Aquatic ecosystems play an important role in maintainin
water quality and area valuable indicator of water quali
and the suitability of the water for other uses.

- Water quality describes the condition of the water, in
chemical, physical , biological and characteristics , the v
Basically occupied on land 96% because the water bas
main essential factor.
- Water testing result can provide in in the movements
And aid in determining the best course of action for a s
water body, whether a treatment is needed or an aera
System should be installed the amount of dissolved oxy
helps to determine what species of fish, if any can surv
the water do is influenced by water temperature as we
the amount of organic matter present a lake of do is th
Leading cause of fish skills ,especially in summer month

SARAMPALLY LAKE

(Capacity – 522 acres
Water Capacity – 1 TMC
Boundaries – KAMAREDDY, SARAMPALLY, LINGAPUR, DEVANPALLY, WARRAERU
Source – Rain Water, Flow from SANTHAYIPET Canal, TADWAI hills and Bore wells.
Fishermen Co-opeIt located in the old city of Kamareddy. it used as drinking water in the
and know it use for fields)
Land rative Society KAMAREDDY. Reg No- TJ -406,3/12/1963,Enrolled
Fishermen- 305 and Women 100
Dependents – more than 700
Main Uses- Irrigation purpose, house hold uses, Fish culture
Species - catla-catla , labeorohita , sirunus ,mrigela , tilapia, combu fish , flat fish ,plain fi
chennapuncteta , chenna straita, clerious, malugu(snake fish), murrel fish , tortoise , pra
,
crabs, mullascans, vallagoattu



TEKRIAL LAKE

(It located in the old city of Kamareddy. it used as drinking water in the past and know it use for fields)

Land Capacity – 210 Acres

Water Capacity – ½ TMC

Boundaries – KAMAREDDY, DEVANPALLY, KUPRIYAL, TEKRIYAL, NH 44 Road

Main Uses- Irrigation purpose, house hold uses, Fish culture

Species- catla-catla , labeorohita , sirunus ,mrigela , tilapia, combu fish , flat fish ,plain fish , chennapuncteta , chenna straita, clerious, malugu(snake fish), murrel fish , tortoise , prawns , crabs, mullascans, vallagoattu, etc.

Above lakes water now generally use for the fields, drinking water for animals, washing cloths and swimming.

The students are testing the water quality of lakes, how much it is useful

Review on Topic

The lakes water using for the fields, drinking water for animals, washing cloths and swimmin
So students are testing the water quality of lakes for how much it is useful and they analysis water quality by various methods such as Electrometric method, Titrometric method, UV Spectro photo metric methods.

Solvents(CaCo3,Cl- , Carbonates, Bicarbonates, Sulphates, Fluorides, Nitrates, Iron)can irritate ar damage the skin, eyes and respiratory tract, cause a narcotic effect on the nervous system and damage internal organs such as the liver and kidneys. These kinds of damage can be acute(from single heavy exposures) or chronic (from repeated low dose exposures over months or years). In addition, some solvents are especially hazardous specific organs or can cause specific diseases such as cancer.

Testing Methods

Fluoride effect on Damage skeleton system and teethes.
Nitrates effect on Hemoglobin and cause to blue baby(methohemo globia) in children's

S.NO.	Characteristics	Testing Method
1	pH	ELECTROMETRIC

OBJECTIVES

1. To check the water quality is in compliance with the standards and lenses. Suitable or not for the designated use.
2. To monitor the efficiency of a system working for water quality maintenance.
3. To check the whether up gradation change of existing of an a existing systems is required and to decide what changes should take place
4. To monitor whether water quality is in compliance with rules and regulations.
5. Water quality analysis of extremely necessary in the sectors of

A. Public health
B. Irrigation.
C. For aquaculture.
D. Specially for drinking water.

METHODOLOGY

2	TDS mg/lit	
3	Alkalinity(CaCo3) mg/lit	TITROMETRIC
4	Total Hardness mg/lit	
5	Chlorides mg/lit	
6	Fluoride ppm	UV SPECTROPHOTO METRIC
7	Nitrites mg/lit	
8	Iron mg/lit	
9	Sulphate mg/lit	

ELECTROMETRIC AND UV SPECTROPHOTO METRIC METHODS

EXAMINE LAB

Students examine the lakes water quality in DEPT. of RURAL WATER SUPPLY & SANITATION ENGINEERING LAB, KAMAREDDY DISTRICT, TS. Dyp. Executive Engineer

WATER QUALITY TEST IN VARIOUS LAKES IN KAMAREDDY

permission for examine by the accepting our application through principal GDC, KAMAREDDY.

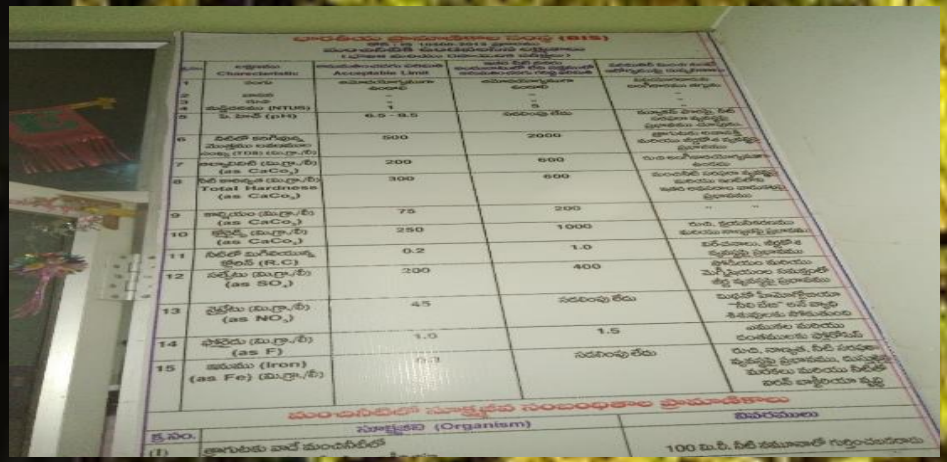
RBONATES & BICARBONATES SAMPLE COLLECTION WITH TESTING

OUT STUDENTS

tal ZFC I YEAR Students are form as a group for examine water

WATER QUALITY NORAMAL RANGES

Normal ranges based on BIS (BUREAU OF INDIAN STANDARDS)



S.NO.		Normal Ranges	
		FROM	TO
1	pH	6.5	8.5
2	TDS mg/lit	500	2000
3	Alkalinity (CaCo3) mg/lit	200	600
4	Total Hardness mg/lit	300	600
5	Chlorides mg/lit	250	1000
6	Fluoride ppm	1.0	1.5
7	Nitrates mg/lit	45	-
8	Characteristics	0.3	-
9	Sulphate mg/lit	200	400

WATER QUALITY TEST PRODUCE

(Chemicals, Apparatus, Results)

9 test are using for estimate water quality in various lakes. They are

1.Estimate pH

Apparatus: pH meter, beaker

Chemical: Sample-I, Sample-II

Procedure: At room temperature (27Degree C) take 100ml each sample into each beaker and use pH meter for readings

Results:

1.SARAMPALLY LAKE (SAMPLE-I): pH reading =7.4

2.TEKRIYAL LAKE (SAMPLE-II): pH reading =7.06

2.Estimate TDS (Total Dissolve Solvent)

Apparatus: Electron Conductivity meter (EC), Beaker

Chemical : Sample-I, Sample-II

Procedure: take 100ml each sample into each beaker and dip EC meter electrode for reading (formula: EC reading x 0.65=TDS mg/lit (EC =micro mass/cm)).

Results:

1. SARAMPALLY LAKE (SAMPLE-I) reading = 417 x 0.65 =271 mg/lit

2. TEKRIAL LAKE (SAMPLE-II) reading = 1302 x 0.65 = 846 mg/lit

3. Estimate Alkalinity

paratus: Conical Flask, Burette, Burette Stand, Measuring Jar

emical: Methyl Orange Indicator,0.02N H_2SO_4 and Sample-I, Sample-II

cedure: take 100ml each sample into each Conical Flask add two drops of methyl orange indicator.

nple gain Yellow color.

ke0.02N H_2SO_4 into Burette for titrate with yellow color sample and turns until orange color appear

te Burette readings

rmula: V x 1000/Volume of sample(V =0.02N H_2SO_4).

ults:

ARAMPALLY LAKE (SAMPLE-I) reading = 4.3 x 1000/25=127 mg/lit

EKRIAL LAKE (SAMPLE-II) reading = 10.5 x 1000/25 = 420mg/lit

4. Total Hardness

Apparatus: Conical Flask, Burette , Burette Stand, Measuring Jar , Pipette

Chemical : Ammonia Buffer, EDTA (0.02N) Eryochrome black –T indicator and Sample-I, Sample-II

Procedure: take25ml each sample into each Conical Flask add 1ml of Ammonia Buffer and add 1 pinch Eryochrome black-T. Sample-I gain purple color. Take0.02N EDTA into Burette for titrate with purple color sample and turns until blue color appears. Note Burette readings

(Formula: V x 1000/Volume of sample(V =0.02N EDTA).

Results:

1. SARAMPALLY LAKE (SAMPLE-I) reading = 3.3 x 1000/25=<u>132 mg/lit</u>

2. TEKRIAL LAKE (SAMPLE-II) reading = 9.1 x 1000/25 = <u>364mg/lit</u>

Apparatus: Conical Flask, Burette , Burette Stand, Measuring Jar, Pipette
Chemical : Potassium Chromate silver nitrate and Sample-I, Sample-II
Procedure: take 25ml each sample into each Conical Flask add 1ml of possium chromate. Sample gain Yellow color.
Take0.02N silver nitrate into Burette for titrate with yellow color sample and turns until brick red color appears. Note Burette readings
(Formula: V x 1000/Volume of sample(V =0.02N silver nitrate reading).
Results:
1. SARAMPALLY LAKE (SAMPLE-I) reading = 2.2x 1000/25=88 mg/lit
2. TEKRIAL LAKE (SAMPLE-II) reading = 8.8 x 1000/25 = 350mg/lit

6. Estimate Fluoride

Apparatus: Test tube, spectrophotometer, fluoride bar code
Chemical : Fluoride –I reagent, Fluoride-II reagent and Sample-I, Sample-II
Procedure: take 5ml each sample into each test tube and add two ml of Fluoride-I reagent one spoon fluoride-II reagent.
After 5minutes test in spectrophotometer using with fluoride barcode meter. Note Burette readings

1. SARAMPALLY LAKE (SAMPLE-I) reading = 0.27 mg/lit
2. TEKRIAL LAKE (Results:
SAMPLE-II) reading = 0.27 mg/lit

7. Estimate Nitrate

Apparatus: Test tube, spectrophotometer, nitrate bar code
Chemical : Nitrate –I reagent, Nitrate-II reagent and Sample-I, Sample-II
Procedure: take 5ml Nitrate-Iin each sample into each test tube and add 0.
5ml each sample into each test tube and add 0.5ml of Nitrate-II reagent. After 5minutes test in spectrophotometer using with nitrate barcode meter. Note Burette readings
Results:
1. SARAMPALLY LAKE (SAMPLE-I) reading = 5.7 mg/lit
2. TEKRIAL LAKE (SAMPLE-II) reading = 13.8mg/lit

2. TEKRIAL LAKE (SAMPLE-II) reading = <u>27.21 mg/lit</u>

8. Estimate Iron

Apparatus: Test tube, spectrophotometer, Iron bar code
Chemical: Iron –I reagent, and Sample-I, Sample-II
Procedure: take 5ml each sample into each test tube and add 3 drops of Iron –I reagent.
After 5minutes test in spectrophotometer using with Iron barcode meter. Note Burette readings
Results:
1. SARAMPALLY LAKE (SAMPLE-I) reading = <u>0.27 mg/lit</u>
2. TEKRIAL LAKE (SAMPLE-II) reading = <u>0.32 mg/lit</u>

9 .Estimate Sulphates

Apparatus: Test tube, spectrophotometer, Sulphate bar code
Chemical: Sulphate –I reagent and Sample-I, Sample-II
Procedure: take 10ml each sample into each test tube and add 1 pouch of Sulphate-1 reagent.
After 5minutes test in spectrophotometer using with Iron barcode meter. Note Burette readings
Results:

1. SARAMPALLY LAKE (SAMPLE-I) reading = 25.18 mg/lit

FINAL PROJECT RESULTS TABLE

S.NO.	Characteristics	Normal Ranges		SARAMPALLY LAKE	TEKRIYAL LAKE
		FROM	TO		
1	pH	6.5	8.5	7.4	7.06
2	TDS mg/lit	500	2000	271 mg/lit	846 mg/lit
3	Alkalinity (CaCo3) Mg/lit	200	600	172 mg/lit	420 mg/lit
4	Total Hardness mg/lit	300	600	132 mg/lit	364 mg/lit

6	Fluoride ppm	1.0	1.5	0.27 mg/lit	0.27 mg/lit
7	Nitrates mg/lit	45	-	5.7 mg/lit	13.8 mg/lit
8	Irion mg/lit	0.3	-	0.27 mg/lit	0.32 mg/lit
9	Sulphate mg/lit	200	400	25.18 mg/lit	27.21 mg/lit

RESULT ANALYSIS

From the above results SARAMPALLY LAKE, TEKRIYAL LAKE LAKES shows slightly difference in their results.

Each parameter results compare between 3 samples as below

S.NO.	Characteristics	Normal Ranges		SARAMPALLY LAKE	TEKRIYAL LAKE	ANALYSIS
		FROM	TO			
1	pH	6.5	8.5	7.4	7.06	In 2 lakes pH is normal
2	TDS mg/lit	500	2000	271 mg/lit	846 mg/lit	In 2 Lakes TDS is high in Tekriyal lake. But below normal range.
3	Alkalinity (CaCo3) Mg/lit	200	600	172 mg/lit	420 mg/lit	In 2 Lakes CaCo3 is high in Tekriyal lake. But below normal range.
4	Total Hardness mg/lit	300	600	132 mg/lit	364 mg/lit	In 2 Lakes Total Hardness is high in Tekriyal lake. But below normal range.
5	Chlorides mg/lit	250	1000	88 mg/lit	350 mg/lit	In 2 Lakes Cl- is high in Tekriyal lake. But below normal range.

6	Fluoride ppm	1.0	1.5	0.27 mg/lit	0.27 mg/lit	In 2 lakes F is normal
7	Nitrates mg/lit	45	-	5.7 mg/lit	13.8 mg/lit	In 2 lakes Nitrites are normal
8	Irion mg/lit	0.3	-	0.27 mg/lit	0.32 mg/lit	In 2 Lakes Fe is high in Tekriyal lake. But below normal range.
9	Sulphate mg/lit	200	400	25.18 mg/lit	27.21 mg/lit	In 2 lakes S is normal

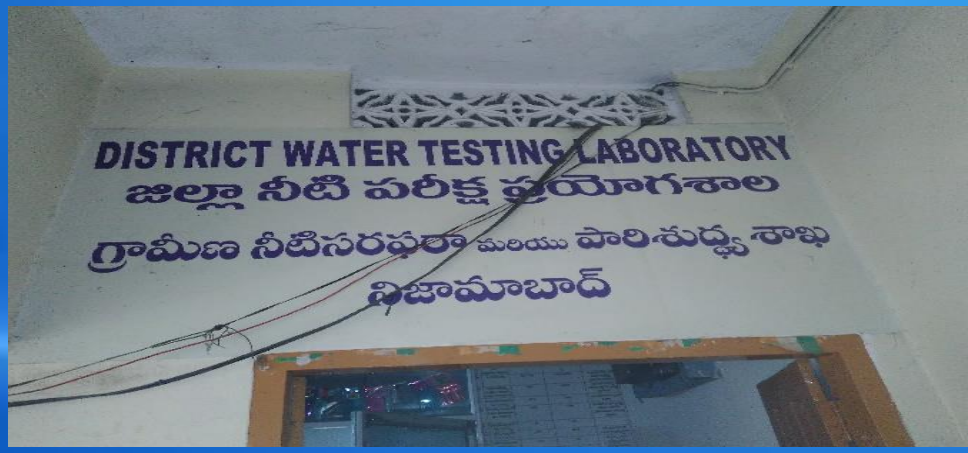
From analysis TEKRIYAL LAKE contains TDS, Alkalinity, Total Hardness, Chlorides, Irion are show slightly high results but they are below normal ranges.

Abnormal Ranges Effects

S.NO.	Characteristics	Normal Ranges		EFFECTS
		FROM	TO	
1	pH	6.5	8.5	Above can cause skin, eye and mucous membrane irritation. pH values below 4 also cause irritation due to the corrosive effects
2	TDS mg/lit	500	2000	Irritate and damage the skin, eyes, and respiratory tract, cause a narcotic effect on the nervous system and damage internal organs such as the liver and kidneys. These kinds of damage can be acute (from single heavy exposures) or chronic (from repeated low dose exposures over months or years). In addition, some solvents are especially hazardous to specific organs or can cause specific diseases such as cancer
3	Alkalinity (CaCo3) Mg/lit	200	600	
4	Total Hardness mg/lit	300	600	
5	Chlorides mg/lit	250	1000	
6	Fluoride ppm	1.0	1.5	
7	Nitrates mg/lit	45	-	

8	Irion mg/lit	0.3	-	
9	Sulphate mg/lit	200	400	

Independently Fluorine effect on damage skeleton system and teethes and Nitrates effect on hemoglobin and cause to Blue Baby (methohemoglobia) in children's.



Conclusion

From the above results SARAMPALLY LAKE, TEKRIYAL LAKES water not contaminated by the pollutants.

This lakes water useful for the animals, clothing, swimming and fields.

On the day of testing this lakes water contain maximum normal ranges.


Thank You

2017-2018

JIGNASA - Student Study Project

Title of the Project: "AASARA Pensions: A Study of Kamareddy District in Telangana State".

As per the Commissionerate of Collegiate Education (CCE) instructions, the Department of Economics undertook the student study Project on "Aasara Pensions: A Study of Kamareddy District in Telangana State" by the students namely 1. T. Sanjeevulu B.A(RI) 5009-15-354-060.
2. D. Divya Vani B.A(CA) 5009-15-352-005.
3. S.K. Salma B.A(CA) 5009-15-352-020.
4. D. Srikanth B.A(HEP) 5009-15-129-550.
5. L. Bhargavi B.A(CA) 1705009112005.

under the supervision of Dr. N. Shraddanandam, Faculty in Economics and this Student Study Project selected in JIGNASA competitions State Level - 2nd Prize (2017-18) and won Rs. 18,000/- cash Prize for the students and Rs. 3,000/- for the Lecturer mentoring the students.

AASARA PENSIONS

A STUDY OF KAMAREDDY DISTRICT IN TELANGANA STATE

EDITOR
DR. M. SRADDANANDAM

STUDENTS PARTICIPANTS (BA): IN JIGNASA' STUDENT STUDY PROJECT' COMPETITIONS IN STATE LEVEL-HYDERABAD.

T. Sanjeevulu(RI) 5009-15-354-060 | D. Divya Vani(CA) 5009-15-352-005 | S. K. Salma(CA) 5009-15-352-020 | D. Srikanth BA (HEP) 5009-15-129-550 | L. Bhargavi (ML) 17055-09-352-005

Certificate Receiving [illegible] after Presentation of the Project Report-wi[illegible] 23rd, January, 2018

Telangana Economic Association (TEA) Appreciated in 2nd Annual Conference-Khammam, 10th -11th February-2018.

2019-2020

JIGNASA - Student Study Project

Title of the Project: "Farmer Welfare Schemes in Telangana: A Case study on 'Rythu Bandhu' and 'Rythu Beema' in Kamareddy District".

As per the Commissionerate of Collegiate Education (CCE) instructions, the Department of Economics undertook the Student Study Project on "Farmer Welfare Schemes in Telangana: A Case study on 'Rythu Bandhu' and 'Rythu Beema' in Kamareddy District" by the students namely

1. M. Saikusnari B.A(RI) II yr 180550093540 34
2. Mariam Uzma B.A(RI) II yr 180550093540 24
3. Afsheen Jehan B.A(CA) III yr 170550093520 01
4. B. Jayanth B.A(HEP) II yr 180550091290 08.
5. K. Niharika Rathod B.A(HEP) II yr 190550091290 25.

under the supervision of Dr. P. Rajagambhir Rao, Faculty in Economics and this student study Project selected in JIGNASA competitions State Level - Commendable Prize (2019-2020).

JIGNASA-STUDENT STUDY PROJECT

FARMER WELFARE SCHEMES IN TELANGANA

A CASE STUDY ON RYTHU BANDHU AND RYTHU BIMA IN KAMAREDDY DISTRICT

DEPARTMENT OF ECONOMICS & RI

GOVT. DEGREE COLLEGE, KAMAREDDY

CERTIFICATE

This is to certify that the student study project entitled FARMER WELFARE SCHEMES IN TELANGANA , A CASE STUDY ON RYTHU BANDHU AND RYTHU BIMA IN KAMAREDDY DISTRICT is a bonafide work of the following students under the supervision of Department of Economics & RI , Govt. Degree College, Kamareddy.

1.	18055009354034	M. SAI KUMARI	BA(RI) - II
2.	19055009129025	K. NIHARIKA RATHOD	BA(HEP) - I
3.	17055009352001	AFSEEN JAHAN	BA(CA) – III
4.	18055009354024	MARIYAM UZMA	BA(RI) – II
5.	18055009129008	B. JAYANTH	BA(HEP) – II

SUPERVISOR : Dr. P. RAJA GAMBHIR RAO

JIGNASA - 2019

STUDENT STUDY PROJECT

SOIL MOISTURE ALARM

by:

R. Balaji (17055009468019)
A. Upendra (18055009468007)
M.S Alekya (18055009441017)
G. Akila (18055009468026)
G. Mahendar (18055009441012)

***Guided by*:**
Balaji Srinivas Goud
Lecturer in Physics
&
G.Bhoomanna
Lecturer in Physics

Government Degree College
Kamareddy -503111
Dist. Kamareddy

JIGNASA - 2018

STUDENT STUDY PROJECT

CUTTING OF GLASS SLABS WITH ELECTRICITY

by:

K. Vittal (16055009468011)
N. Janapath Rao (16055009468020)
B. Vaibhav (16055009441508)
A.Upendra (18055009468007)
G. Mahendar (18055009441012)

***Guided by*:**
Dr.P. Rama Krishna
Asst. Prof. of Physics

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Dist.- Kamareddy

GOVT. ARTS & SCIENCE COLLEGE

KAMAREDDY-503 111

Accredited with B (CGPA 2.77) by NAAC

Principal: C.Prabhakar, M.com, M.phil

CERTFICATE

Certified that the student study project entitled ***"AUTOMATIC STREET LIGHT"*** is the Bonafide work of following students under the supervision of ***R.Balaji srinivas goud*** *Lecturer, Department of Physics, Government Degree College, Kamareddy.*

S.No.	***Roll.No.***	***Class/Year***	***Name***
1.	*500915460020*	*B.Sc(MPE) III*	*J.Prabhanjan*
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4.	*500915468023*	*B.Sc(MPCS) III*	*T.Pradeep*
5.	*500914468045*	*B.Sc(MPCS) III*	*G.Swarnalatha*
6.	*500915468004*	*B.Sc(MPCS) III*	*G.Ashok*

Signature of the Supervisor

Head of the Department

PRINCIPAL

PRINCIPAL
Govt. Arts & Science College
KAMAREDDY-503111

GOVERNMENT DEGREE COLLEGE : KAMAREDDY
DEPARTMENT OF ZOOLOGY / FISHERIES

STUDY PROJECT ON VERMI COMPOST

2017 - 18

B.S.c - BZc & ZFc Student along with lectures Conducted the Project of "Vermicompost" of Vermiculture. at Govt. Art & Science College Kamareddy

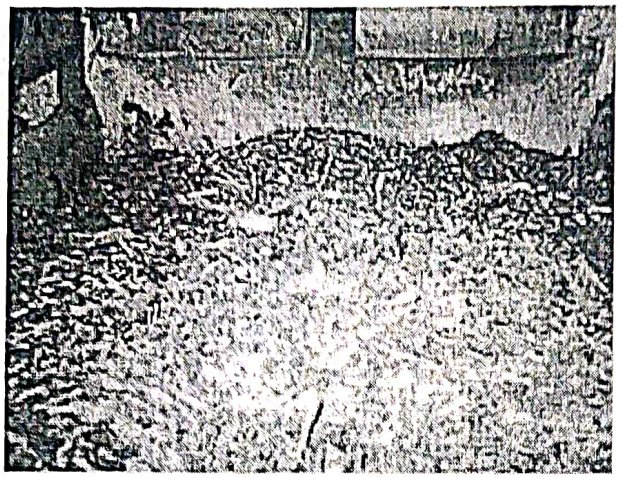
The lectures explained the method of building and Process of maintaing it

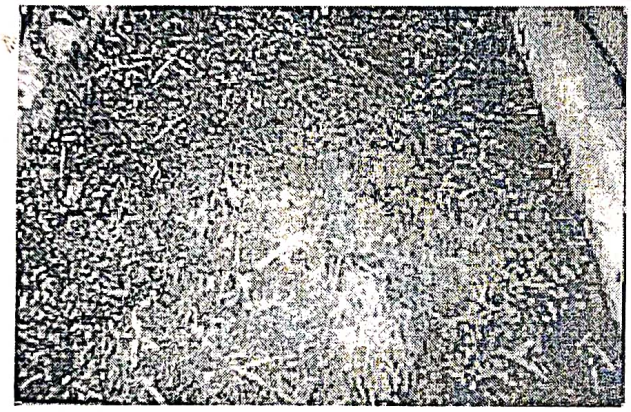
They also explained the thing and materials, that to be used in the Vermiculture

S.No.	Applicationid	Name
1	180550094610 14	Dineshkumar
2	180550094610 56	Maneesha
3	180550094610 57	Anilkumar
4	180550094610 36	Geethanjali
5	180550094610 30	Kalyan
6.	180550094610 08	Aishwarya
7	180550094610 41	Pavan
8	180550094610 02	Roja
9	180550094610 51	Dilipkumar
10	180550094610 33	Jeevana
11	180550094610 35	Harisha
12	180550094610	Raghy Naik
13	180550094610 37	Umesh
14	180550094610 03	Srikanth
15	180550094610 05	Prabhakar
16	180550094610 22	Supriya
17	180550094610 16	Saketh
18	180550094610	Ganesh
19	180550094610 44	Rishithreddy
20	180550094610 39	Pathya

Vermicompost and Vermiculture:

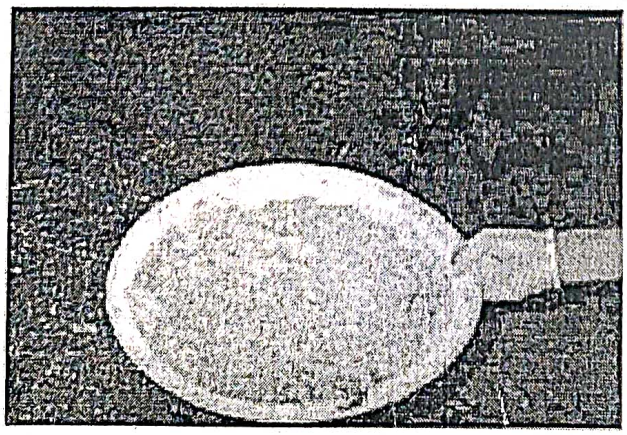
Adding WORM CULTURE



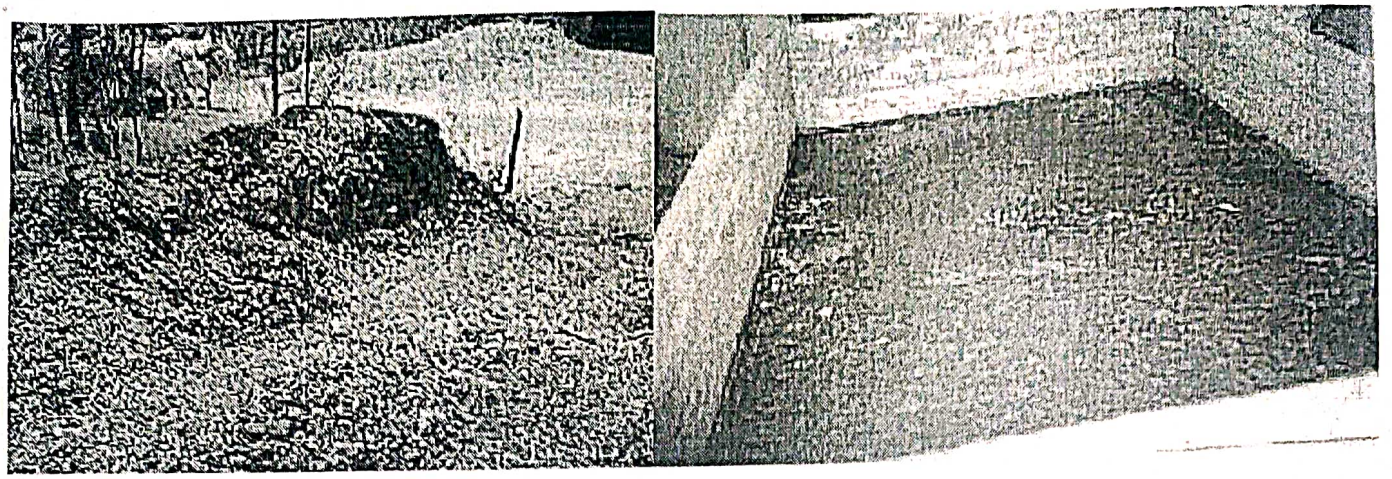


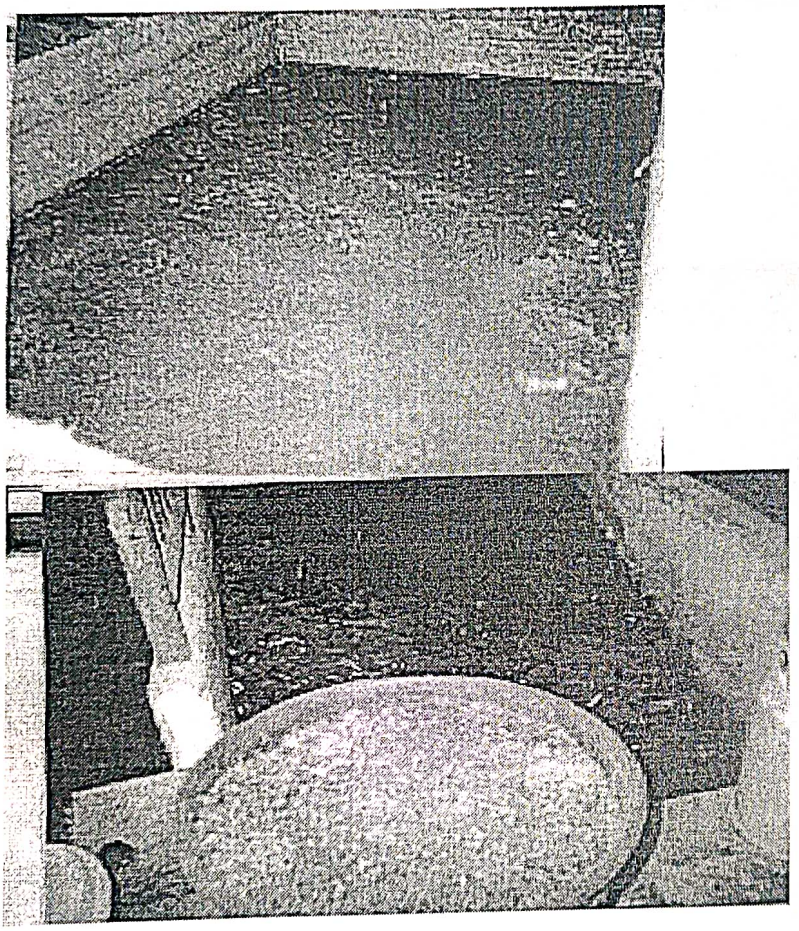
"Culturing of earthworms and their application for a variety of purposes is what is meant by Vermi composting by vermi culture".

a) Selection of species:
The epigeic species have been fouynd to be useful for compost making and the most commonly used species are 'Eisenia foetida' Perionyx excavatus' and "Eudrillius eugiene'.These sprcies are fast breeders and feed actively on organic matter high in nitrogen!



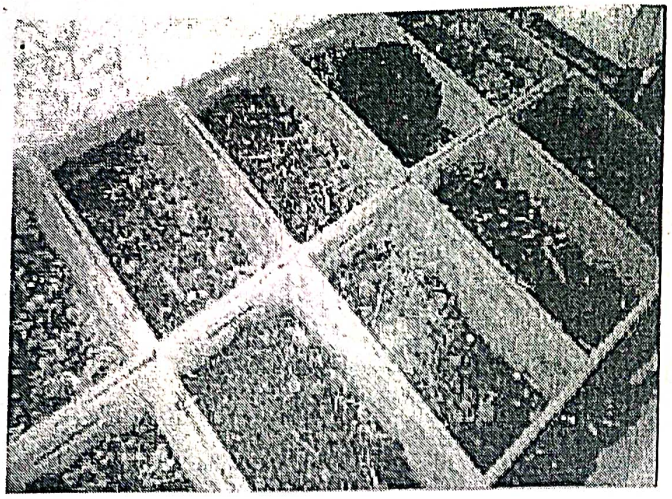
b) Base materials required:





Crop residues ,tree leaves and animal dung are the the basic materials required.Agricultural wastes like sugarcane trash,weeds hedge cuttings ,saw dust, coir waste,paddy husk, cattle dung, effluent slurry, from bio-gas plant, excreta of sheep, horse , pig, poultry droppings (in small quantity) and vegetable wastes are ideal food for earth worms. City garbage or even biodegradable organic sludge, a waste product from ETP of any industry can also be used for feeding worms.

c) Containers for culturing:



Earth worm culturing should be done under shelter to avoid direct sunlight and heavy downpour . Either brick lined pits , plastic tubs, wooden boxes ,earthen pots or even on surface of soil by making heap of organic matter ,culturing can be done.Size of container should be 1 m x 1 m x 0.3 m .In case of pit or heap method dimensions may be changed to convenience , however ,depth of pit or height of heap should not be more than 45 cms.

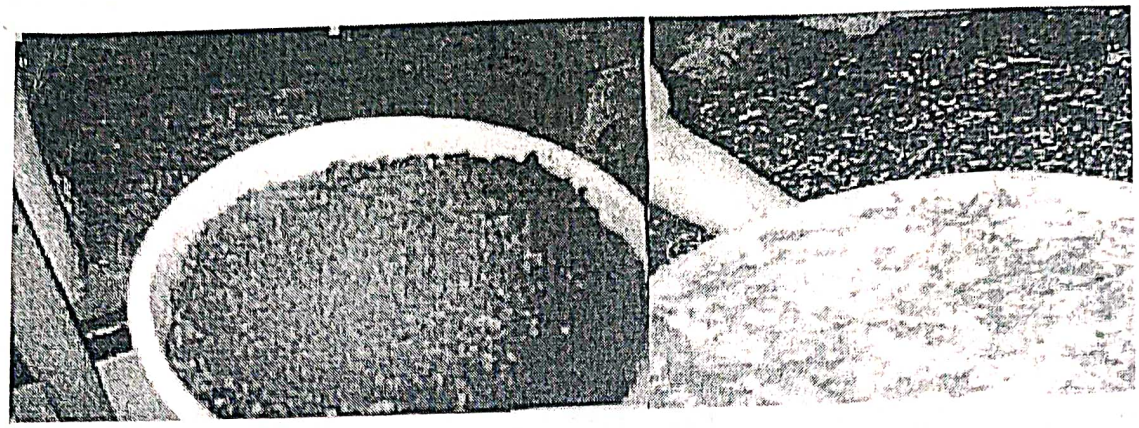
d) Preparation of bed :

Step by step method of preparation of wormiculture bed has to be followed for good results.

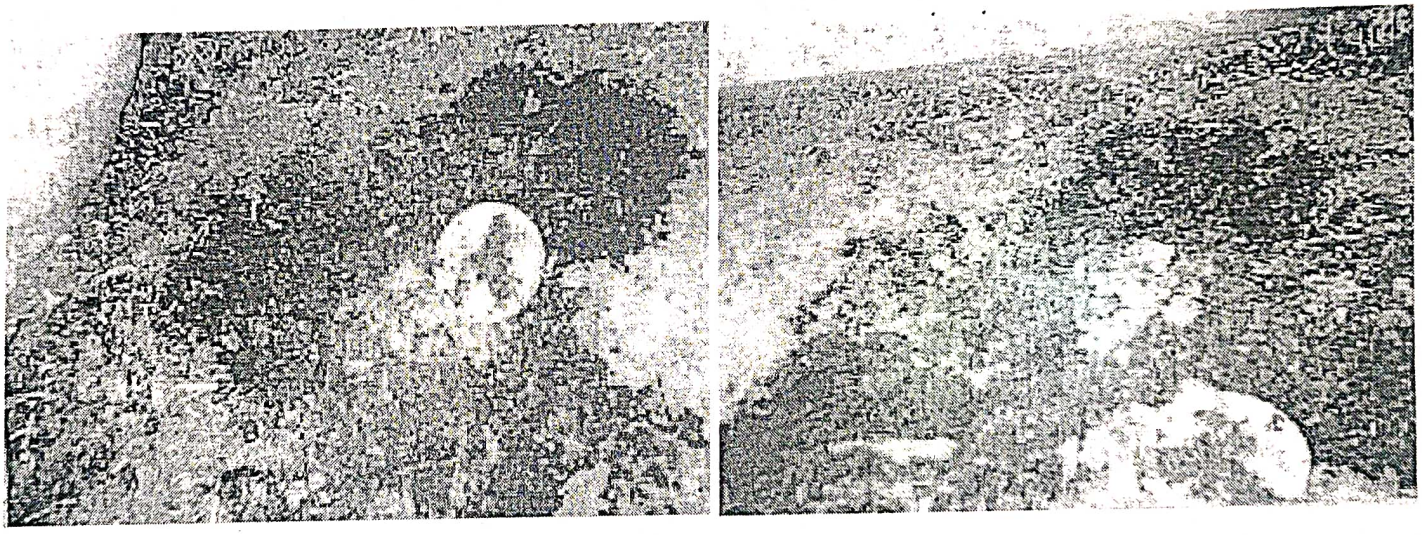
First step: Select a container or dig a pit of appropriate dimensions as mentioned above wherever compost is to be prepared.

Second step: Make a bed of 10 cm height using any of the base materials (coir waste, paddy husk, sugar cane trash etc>)collected. Give a layer of soil on it. Sprinkle water on it to get a moisture level of 40-45%.The bed should appear wet.

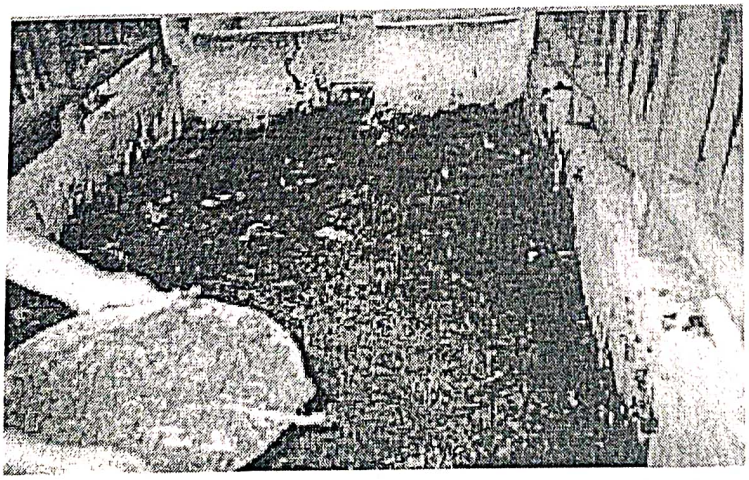
Third step: Mix the organic waste with cattle dung in equal quantity and pour appropriate quantity of water over it so as to make a homogenous mixture. Effluent slurry from bio-gas plant is best used for this .Keep this mixture for two weeks. During this period heating of substrate will take place. Give turning to the material 2-3 times at 4-5 days interval and transfer it on the layer of bedding prepared earlier.



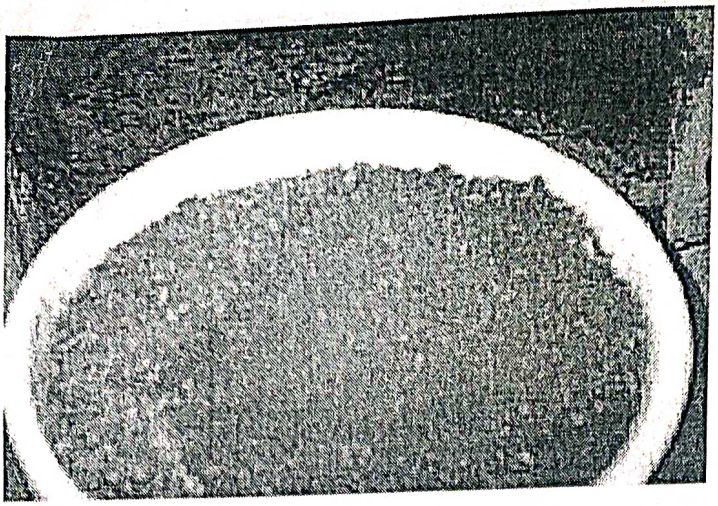
'**Eisenia foetida**' species of vermi culture added to the bed prepared.



Adding the Worm culture



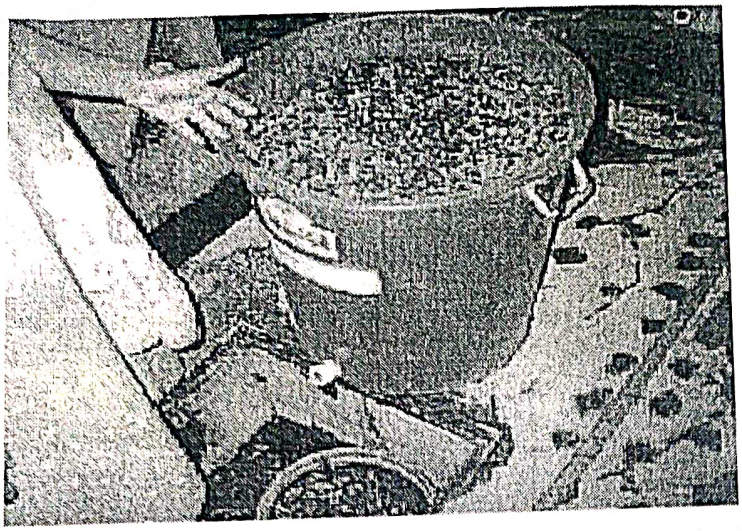
Vermicompost and Vermiculture



Fourth step: Introduce cocoons or worms (if culturing is done for the first time , it is advisable to introduce worms) in the bed at the rate of 2000 worms for 400 kgs of feed mix. as prepared in third step. Then the feed mix is to be spread uniformly on the culture bed .Add 5-10 % neem cake in the feed mix. Neem cake in small quantities has beneficial effect on the growth of worms.

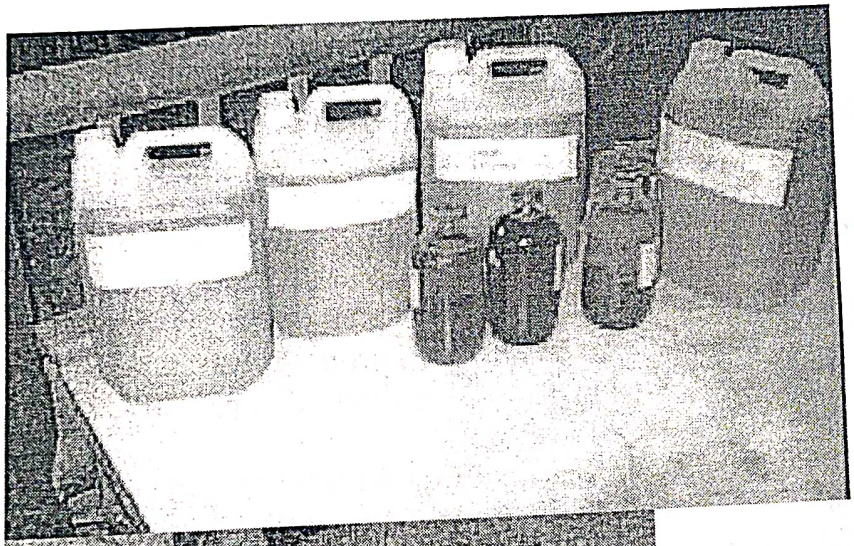
Fifth step: Cover the bed with Gunny cloth .Sprinkle water over the cloth periodically to keep gunny cloth wet. The worms feed actively on organic matter and assimilate only 5-10 % and rest isexcreated as loose granular mounds of vermicastings on the surface away from the feed source ,Thus the worms will convert the feed mix into vermicastings in 60 days . The vermin compost once formed completely will give the smell of moist soil.

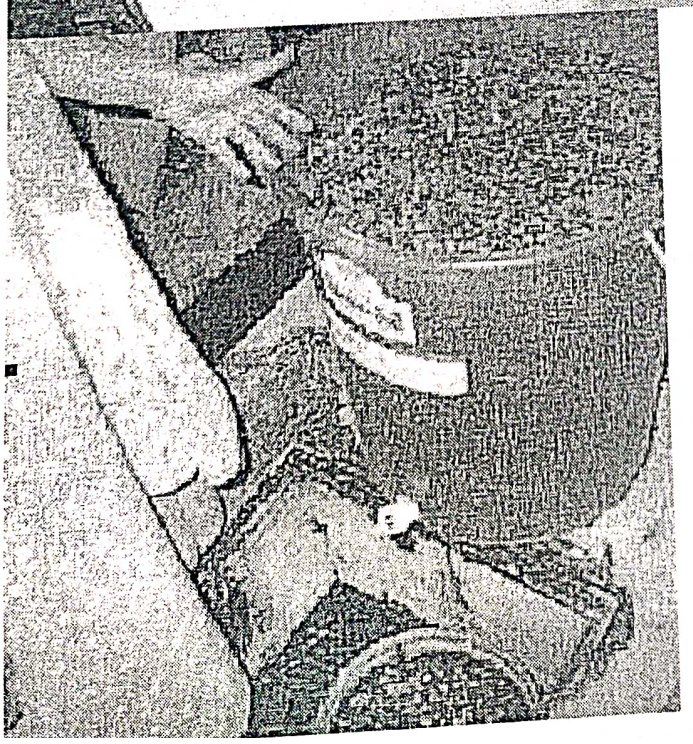
Sixth step: Take out the vermi compost and make a heap in sunlight on a plastic sheet . Keep for 1-2 hours .The worms will gather at the bottom of heap. Remove vermin compost on top and the worms settled down at the bottom can be carefully collected for use in the next batch of vermi composting.

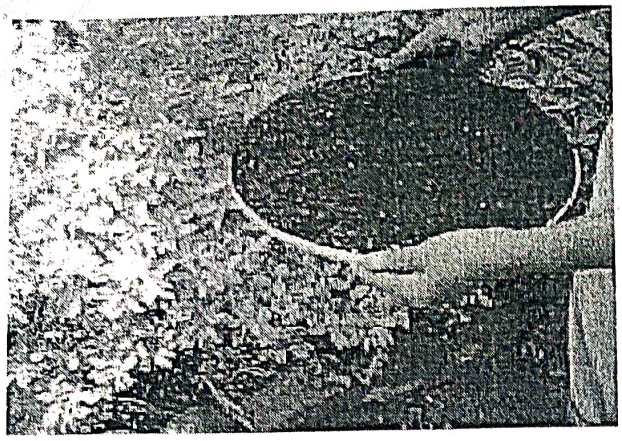


Sieve the vermicast (fine granular materials)

Vermi wash from the compost







1. Moisture level in the bed should not exceed 40-50%.Water logging in the bed leads to anaerobic condition and change in pH of medium.This hampers normal activities of worms leading to weight loss and decline in worm biomass and population .

2. Temperature of bed should be within the range of 20-30 degree centigrade.

3. Worms should not be injured during handling .

4. Bed should be protected from predators like red ants, white ants, centipedes and others like toads,rats, cats , poultry birds and even dogs.

5. Frequent observation of culture bed is essential as acumaulationd of casts retards growth of worms.

6. Space is the criterion for grow th and estblishment of culture .Minimum space required is 2 square meter per 2000 worms with 30-45 cm thick bed.

7. Earth worms find it difficult to adopt themselves in new environments hence addition of inoculam as a bait from earlier habitat helps in early adaptation to new site of rearing.

Best composting tips:

1.Mixture 0f cattle ,sheep, and horse dung with vegetable wastes forms ideal feed for worms.

2.Addition of neem cake in small quantity enhances growth of worms.

3. Biogas slurry aged aerobically for 15 days enhances vermi composting process.

VERMICULTURE

DESCRIPTION

Vermiculture can be a lucrative economic activity for rural women. Earthworms can be bred in their farm or courtyard to produce organic manure. Earthworms multiplied by this technology can be sold directly as animal feed specially for poultry, fishery and dairy farms. Pharmaceutical companies buy them for drug extracts.

WORKING

Select a place away from direct heat, strong sunlight and incessant rains. Dig a pit measuring 2 feet x 2 feet x 2 feet. Line the pit with polythene (PVC) sheet to arrest escape of earthworm through crevices. (Earthen pot, Brick, Cement tank or Wooden boxes can also be used to house earthworms).

The pit is systematically filled with four layers of waste. First layer -- (Bottom of the pit) is filled upto 2 inches with coconut fibre, rice husk and sugar cane bagasse. Second layer is 2 inches thick, consisting of saw dust, chopped rice/wheat straw. Dampen the bed by sprinkling water. Third layer is the earthworm food, this includes an admixture of cow-dung, green foliage, vegetable remnants, discarded parts of fruits, droppings of horses, asses, pigs, sheep or biogas slurry, human excreta, paper or scrap of cardboards etc. This feed should be spread till a height of 6 to 8 inches.

EARTHWORM

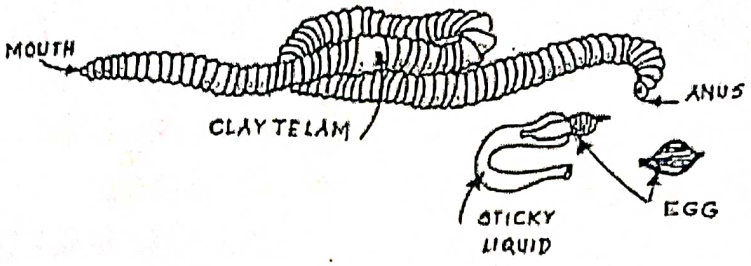


FIG-1

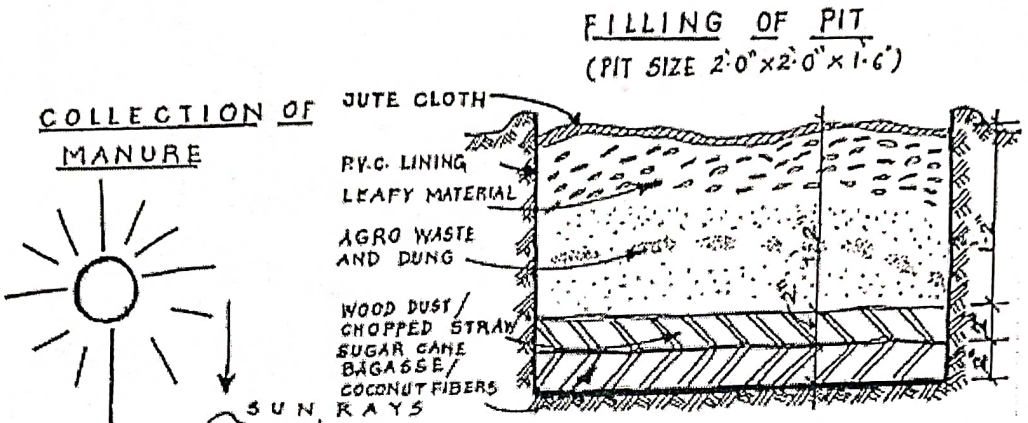


FIG-2

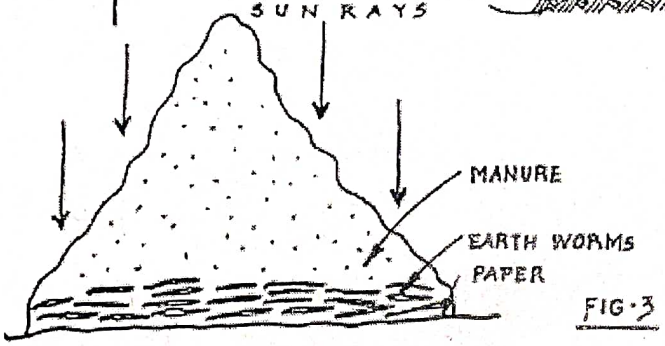


FIG-3

Release about 100 earthworms on the top without hurting them. These earthworms will start penetrating to the bottom. Once all these earthworms disappear, cover the surface with jute bags and keep them wet by sprinkling water in a judicious way.

The jute bags may be turned upside down thrice in the first week, twice in the second week and only once in the third and following weeks, without causing any disruption to the top.

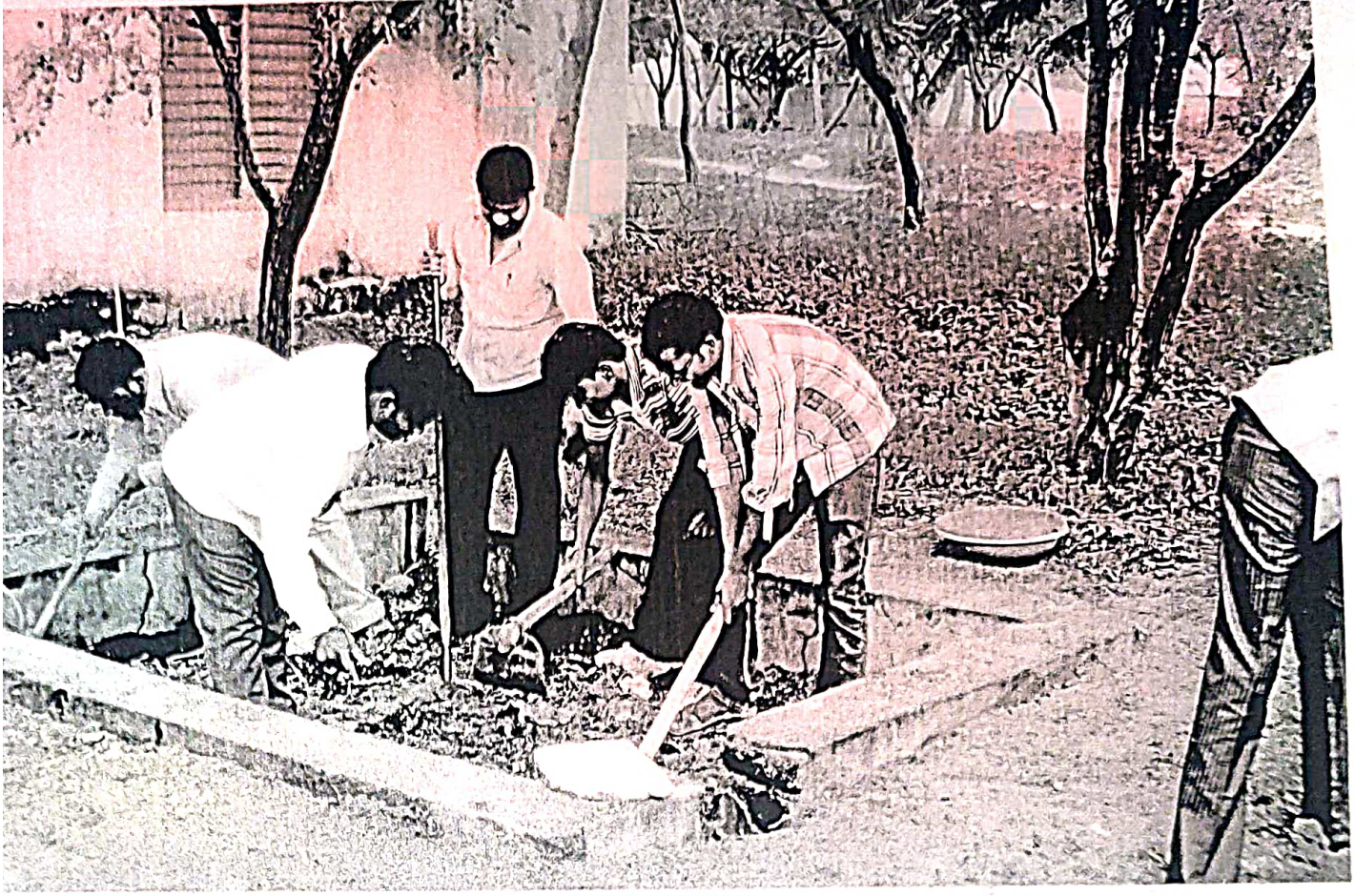
Water and heat inside the tank assist the organic matter to decay 6i proliferates the number of earthworms - both these take place simultaneously. By 4 to 5 weeks, production of heat inside the pit will cease and will come down to 60^0‡ to 65^0 Fahrenheit. In case no warmth is felt by hands, understand that the manure is almost ready for use. From one tank, 50 kg. of manure is produced.

Spread a paper on the ground and empty the contents of the tank slowly in sunlight making a pyramid like heap. Let this heap remain in daylight for about half to one hour. This will induce the earthworms to penetrate deep and reach the bottom. Now the upper layers of organic manure can be lifted slowly. Later the earthworms at the bottom may be separated from one another and deposited in the refilled tank.

PRECAUTIONS

Rubber, metal, brass pieces and plastics are disliked by earthworms.

Salt, chilly, vinegar, soap or soap water as well as~ insecticides 80 to destroy the

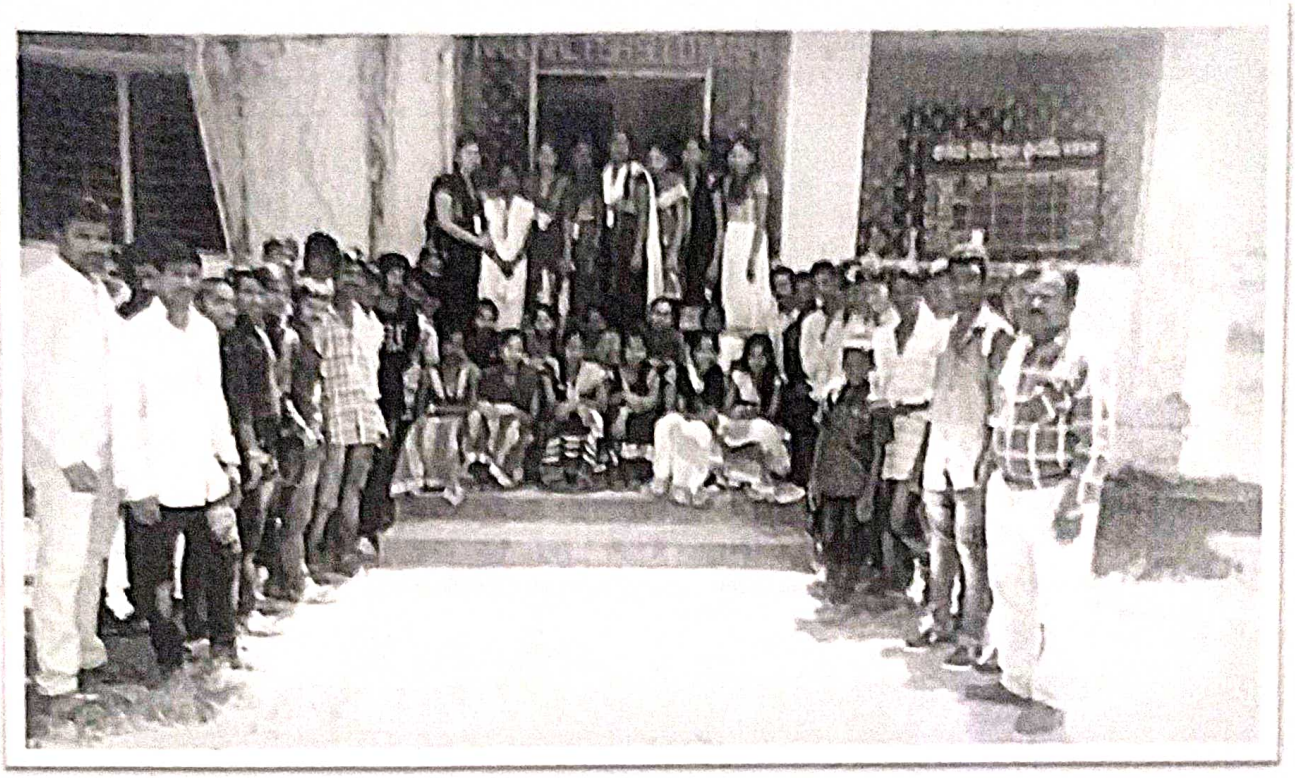


GOVERNMENT DEGREE COLLEGE : KAMAREDDY

Department of Zoology/Fisheries

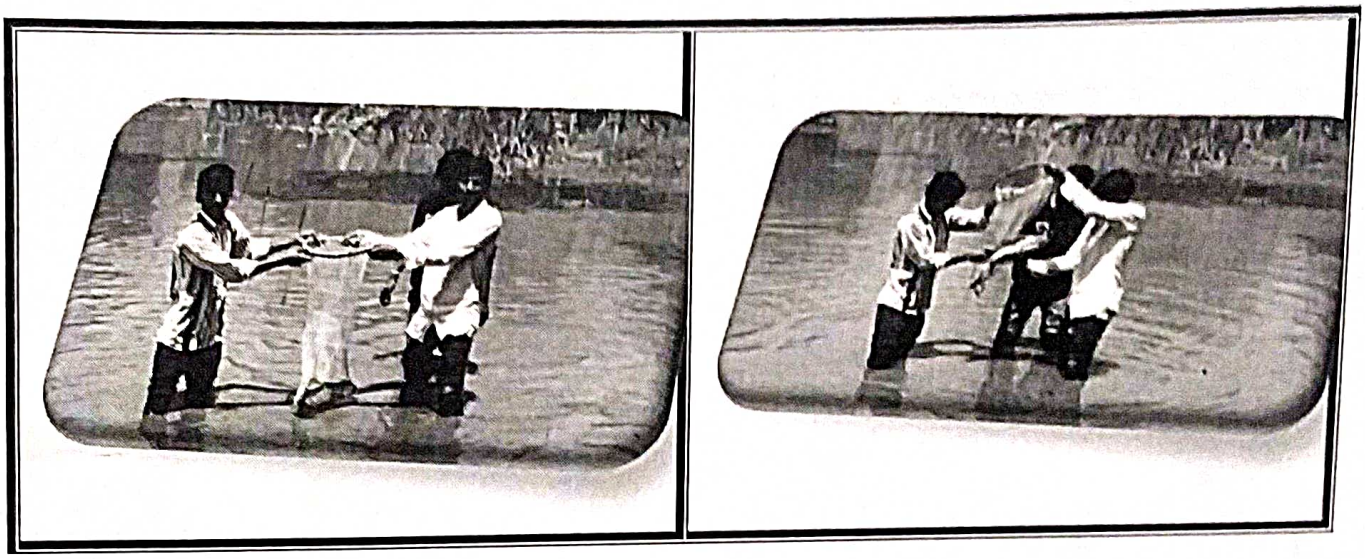
FIELD TRIP (2016)

FISH SEED PRODUCTIOIN CENTER : POCHAMPAD PROJECT



FIELD TRIP

The Department of Zoology has arranged a Field Trip to the Fish Seed Production Centre, Pochampad Project. On 8-9-2016. Fifty three students accompanied by three lecturers visited the seed production centre Pochampad Project.The main objective of the trip is the live demonstration of induced breeding in Indian Major Carps like Labeo rohita and Catla catla, and to visit the different kinds of ponds like Nursery Ponds, Rearing Ponds, Growing Ponds and Stocking Ponds. The students also visited Different kinds of fishing nets, breeding Hapas, used in Fishery industry. Live demonstration has been given on seed packing methods by using polyethylene bags and Oxygen. Details of the tour given below with photographs.



Showing breeder fishes caught from the Stocking pond

Healthy Male and female mature breeders are selected from the cultured in fish farms. Selected breeders are separated sexually and maintained in stocking ponds by providing ground nut cake and rice husk in 1:1 ratio.

In induced breeding females are given two doses while males are given one dose only.Six hours gap is maintained between the two doses in females.Generally 0.5 to 2.0 ml of extract is needed for a fish weighing 1 to 10 kg.

Breeders caught with the help of hand net and kept on sponge base. Specified dose is injected with hypodermic syringe into the muscle near the pectoral fins, axis of the pelvic fins then the injected area is slowly massaged to disperse the extract uniformly.

FDO of the centre injecting Pitutary hormone into the female breeder fish.

tuitary glands are collected from mature fishes and preserved in 100% ethyl alcohol or in etone.

ormone extraction:Collected glands are dried by pressing in filter paper and they are ansferred to porcelain bowl. They are ground well after adding distilled water or 0.3% salt olution.This mixture is diluted to1-4mg gland/0.1ml and centrifuged for 5 mnts at 1000 pm.The clear supernatant is used for injection.

Nursery Ponds: These ponds used to culture the fish fry obtained from hapas for a period of 30-40 days.They can be constructed **with** cement and physico chemical and biological factors required for fry can be artificially manipulated.

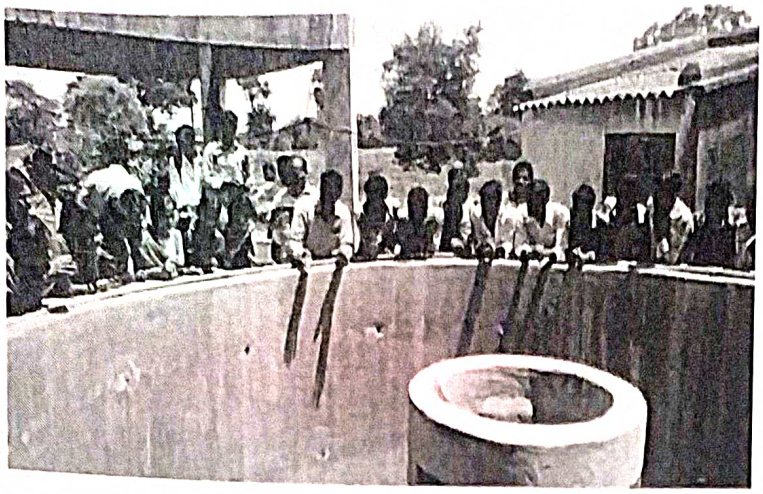
Students watching the fish fry collecting from the nursery ponds

Explaining Hyphophysation method

Hypophysation: matured fishes are induced to breed by injecting specific gonadotropic homones.This technique helps the farmer to procure pure seed of the choice at culture center. In this method entry of the spawn of predator and weed fishes can be totally prevented.

Packing Method: Seed transported in sealed polythene bags filled with water and oxygen.Polythene bags are now replaced by alcathene bags which would not torn in transport.

Explaining seed packing techniques



chinese hatchery: Chinese hatcheries are used to produce large quantities of fish seed.Breeding fishes are put in the spawning tank. Hatching tank is located in the center.

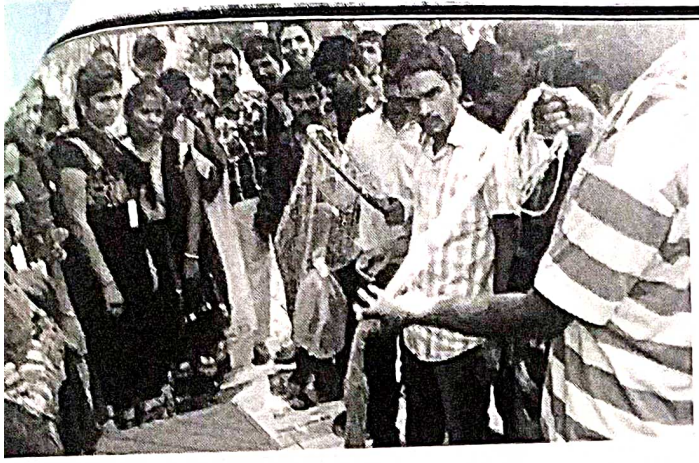
Explaining working procedure of Chinese hatchery

⇦ Jar Hatchery: These are used to produce small quantities of seed. The tanks used are made from transparent acrylic plastic or glass.Water enter into this tank through inlet at its base.Excess water goes to next jar and finally to the lower tank.30000 eggs are introduced into the jar and the fry tages comes out.

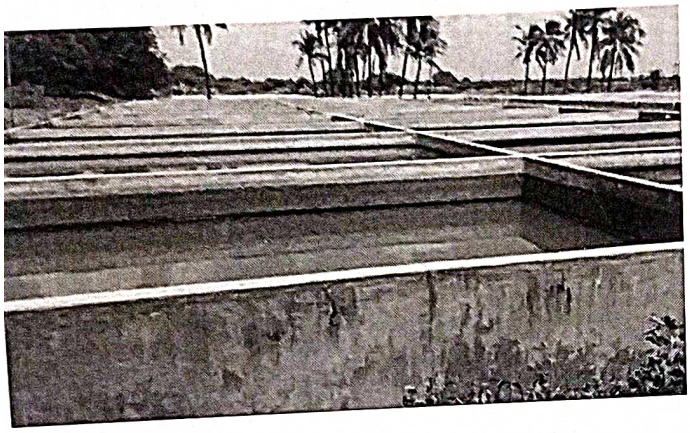
Catching fish seed by using drag net from the rearing pond

Showing oxygen cylinder and its control knobs to fill the oxygen into polythene bags for seed transportation.

students observing breeders happa. The breeding hapa is a box-like enclosure (2 m x 1.5 m x 1.0 m) stitched out of square-meshed mosquito netting cloth and tied on to bamboo poles fixed in ponds or tanks so that about 0.3 m is above the water level while its bottom is 0.3 m above the pond bottom.

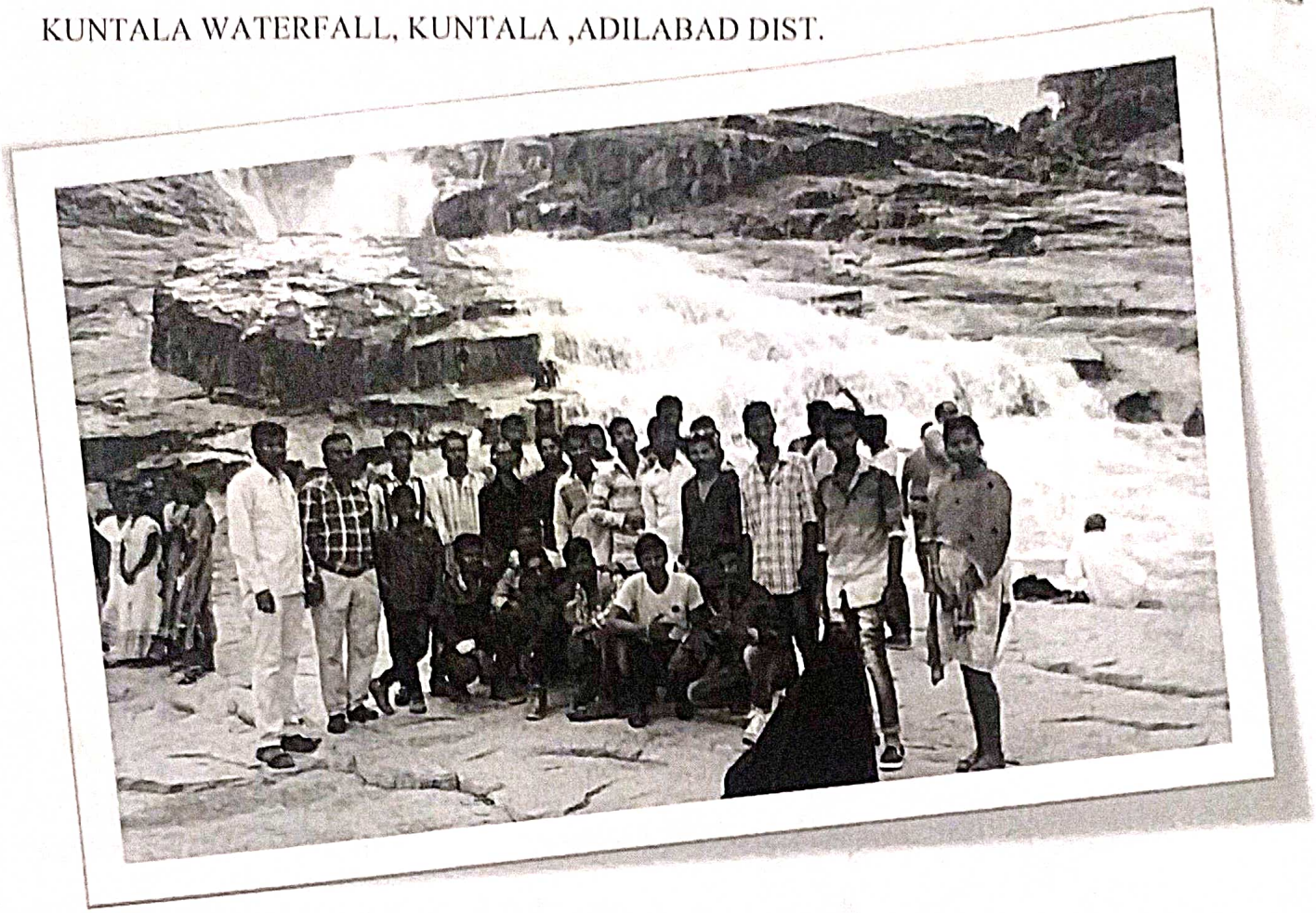


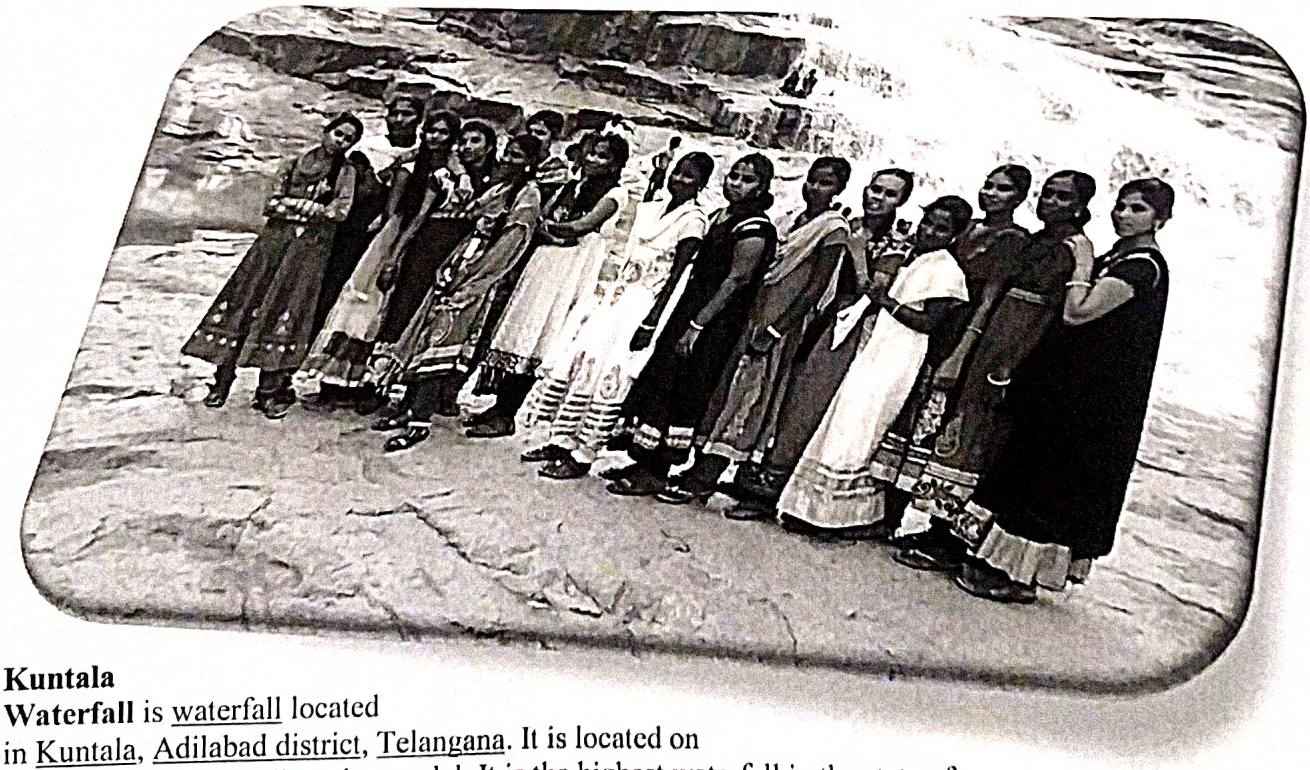
Throw or cast nets are also exclusively artisanal gear. Usually circular in design, they are thrown, with considerable skill, over a fish school in very shallow water. The fish are trapped on the bottom and can be retained in the net as it is taken from the water by the fisherman.



Different kinds of ponds at fish seed farm,Pochampad

KUNTALA WATERFALL, KUNTALA ,ADILABAD DIST.





Kuntala
Waterfall is waterfall located in Kuntala, Adilabad district, Telangana. It is located on Kadem river in Neredigonda mandal. It is the highest waterfall in the state of Telangana with a height of 147 feet (45 meters).

According to the popular and prevalent local belief, Kuntala Waterfall got its name after Shakuntala, the beloved wife of King Dushyanth the pair fell in love with each other and were mesmerised by the scenic beauty of the surroundings. The locals also believe that Shakuntala used to bathe by the waterfall.

GOVERNMENT DEGREE COLLEGE : KAMAREDDY

DEPARTMENT OF ZOOLOGY

FIELD VISIT

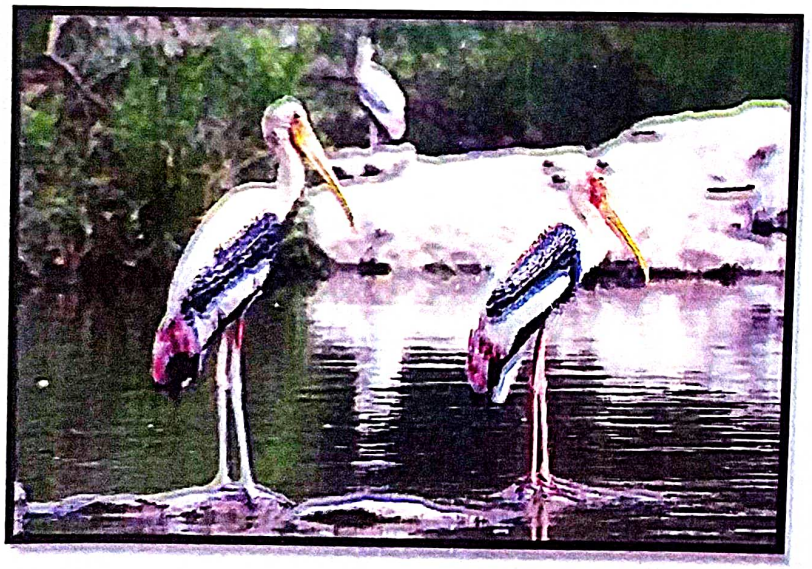
(on 3rd September 2015)

(POCHARAM WILD LIFE SANCTUARY AND DEER REPRODUCTION CENTRE)

The main objective of this tour is to create awareness among the students about the wild life conservation. To know the students what are wild life sanctuaries and what are the main objectives of wild life onservation Objectives of wild life conservation are

1. Protection of natural habitats of organisms or animals.
2. Maintenance of rare species in protected areas such as national parks, santuries etc.
3. Establishment of specific biosphere reserves for endangered plants and animals.
4. Protection of wild life through legislation such as banning hunting etc.,
5. Imposing specific restrictions on export of endangered plants and animals or their products.
6. Educating the public about the need to protect and preserve the environment as a long range goal for the welfare of future generations.

Pocharam Forest & Wildlife Sanctuary is situated at a distance of 15 km from Medak and around 50 km from Kamareddy. Pocharam Forest was reported to be a favourite hunting ground for the Hyderabad Nizam who had declared it as a wild life sanctuary as early as the beginning of 20th century. The sanctuary gets its name from the Pocharam Lake formed after the construction of Pocharam dam on Allair river between 1916 – 1922. The sanctuary is spread over 130 square kilometers in Medak and Nizamabad Districts.Surrounded by lush green forest, the place has rich flora and fauna attracting winged visitors such as Brahminy Bucks, Bar-Headed Goose, and Open Billed Stork. The place is an ideal eco spot where students can see spotting five species of Antelopes and Deer. The sanctuary is home to animals like Wild Dog, Leopard, Wolf, Jackal, Forest Cat, Sloth Bear, Sambar, Nilgai, Chinkara, Chital, and four horned Antelope.

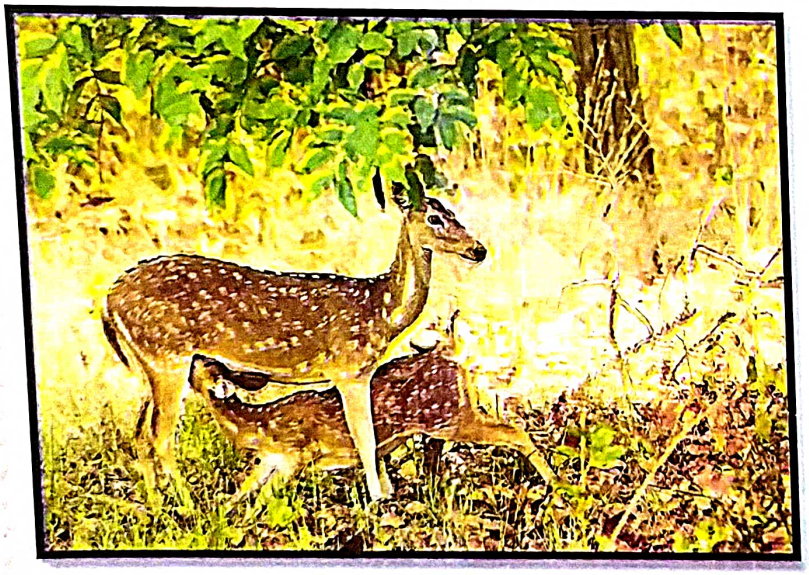


Open billed Stork: The Open billed /painted stork, also known as the janghil or dokh, is very good at adapting to its natural environment. Painted storks search for fish in shallow waters. With their bills half open and shaking their heads back and forth, they will occasionally use a wing to direct the fish toward their open bill. Male storks gather most of the sticks for nest building.

AXIS DEER. The axis deer, or chital is native to the Indian subcontinent. It is considered to be the most beautiful of deer, with a bright reddish coat marked with rows of white spots that persist throughout life. Antlers of males are large but simple, usually with only three points. Essential habitat components include water, woody vegetation for cover, and open areas for feeding. This deer is primarily a grazer, but its food habits are very general, and it can exist quite easily on forbs and woody browse. In contrast to the white-tailed deer, which typically eats only a few foods, the axis deer eats small quantities of

MALE DEER WITH ANTLERS

The reproductive activity of the axis occurs year-round, but most breeding occurs in June and July. Single fawns are born the following spring after a 7½-month gestation period. During the breeding period males bellow loudly and wander in search of receptive females. Females mature sexually and first breed at fourteen to seventeen months of age. Males are probably capable of breeding as yearlings but must achieve adult size to compete for females.



Deers nurse newborn fawns about 4 to 6 times each day, although some may nurse more frequently. Young fawns may only consume 3 or 4 ounces of milk at each nursing bout, but older fawns may take 6 to 8 ounces. Deer milk is more concentrated and has a higher fat content than cow's milk.

While nursing, the fawn appears visibly excited. Often the fawn bumps the udder with its head to stimulate milk flow. While nursing, the tail is elevated and wagging, and the fawn may emit a subtle nursing whine. While the fawn is nursing, the mother vigorously grooms the fawn, particularly around the anal and genital areas to stimulate urination and defecation at the nursing site. At about 2 weeks of age fawns begin experimenting with tender vegetation.

GOVERNMENT DEGREE COLLEGE : KAMAREDDY

Department of Zoology/Fisheries

FIELD TRIP

FISH SEED PRODUCTIOIN CENTER : MEDAK

(3-9-2015)

FIELD TRIP

The Department of Zoology has arranged a Field Trip to the Fish Seed Production Centre, Medak On 3-9-2015. Fifty three students accompanied by four lecturers visited the seed production centre Medak.The main objective of the trip is the live demonstration of induced breeding in Indian Major Carps like Labeo rohita and Catla catla, and to visit the different kinds of ponds like Nursery Ponds, Rearing Ponds, Growing Ponds and Stocking Ponds. The students also visited Different kinds of fishing nets, breeding Hapas, used in Fishery industry. Live demonstration has been given on seed packing methods by using polyethylene bags and Oxygen. Details of the tour given below with photographs.

Showing a female breeder fish caught from the Stocking pond

Healthy Male and female mature breeders are selected from the cultured in fish farms. Selected breeders are separated sexually and maintained in stocking ponds by providing ground nut cake and rice husk in 1:1 ratio.

In induced breeding females are given two doses while males are given one dose only.Six hours gap is maintained between the two doses in females.Generally 0.5 to 2.0 ml of extract is needed for a fish weighing 1 to 10 kg.

Breeders caught with the help of hand net and kept on sponge base. Specified doşe is injected with hypodermic syringe into the muscle near the pectoral fins, axis of the pelvic fins then the injected area is slowly massaged to disperse the extract uniformly.

⇦ FDO of the centre injecting Pitutary hormone into the female breeder fish.

Pituitary glands are collected from mature fishes and preserved in 100% ethyl alcohol or in acetone.

Hormone extraction:Collected glands are dried by pressing in filter paper and they are transferred to porcelain bowl. They are ground well after adding distilled water or 0.3% salt solution.This mixture is diluted to1-4mg gland/0.1ml and centrifuged for 5 mnts at 1000 rpm.The clear supernatant is used for injection.

Nursery Ponds: These ponds used to culture the fish fry obtained from hapas for a period of 30-40 days.They can be constructed **with** cement and physico chemical and biological factors required for fry can be artificially manipulated.

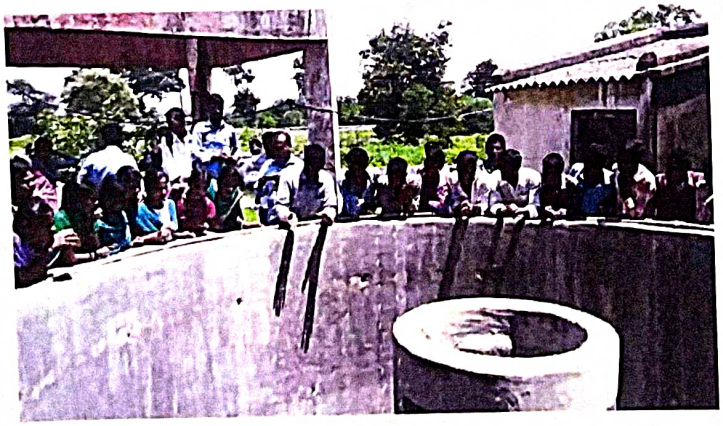
Students watching the fish fry collecting from the nursery ponds

Hypophysation: matured fishes are induced to breed by injecting specific gonadotropic homones.This technique helps the farmer to procure pure seed of the choice at culture center. In this method entry of the spawn of predator and weed fishes can be totally prevented.

FDO explaining induced breeding in fishes

Packing Method: Seed transported in sealed polythene bags filled with water and oxygen.Polythene bags are now replaced by alcathene bags which would not torn in transport.

Explaining seed packing techniques



chinese hatchery: Chinese hatcheries are used to produce large quantities of fish seed.Breeding fishes are put in the spawning tank. Hatching tank is located in the center.

Explaining working procedure of Chinese hatchery

⇦ Jar Hatchery: These are used to produce small quantities of seed. The tanks used are made from transparent acrylic plastic or glass.Water enter into this tank through inlet at its base.Excess water goes to next jar and finally to the lower tank.30000 eggs are introduced into the jar and the fry stages comes out.

2015-16

STUDY PROJECT-6

STUDY PROJECT
ON
SURFACE AREAS

Submitted

By

1.	B. Greeshma	B.Sc (MPC) III^rd year	B. Greeshma
2.	P. Soundarya	BSc (MPC) III^rd year.	P. Soundarya
3.	B. Mamatha	B.Sc (MPC) III year	B. Mamatha
4.	V. Mamatha	B.Sc (MPC) - 3rd year	V. Mamatha
5.	Y. Rajitha	B.Sc (MPC) - III^rd years	Y. Rajitha
6.	R. Samuel Nayak	BSc MPC III^rd year	
7.	G. Naveen	B.Sc MPCS III^rd Year	
8.	—		
9.	—		

GUIDED BY

CH. V[illegible] BABU
ASSISTANT PROFESSOR
Department of Mathematics
Govt. Degree College
Kamareddy-503111

SIGN OF THE HOD
INCHARGE
Department of Mathematics
Govt. Degree College
Kamareddy-503111

PRINCIPAL
Govt. Degree College
KAMAREDDY-503111

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1. surface area of the portion of plane $3x + 4y + 2z = 24$ cutoff by *cordinateplanes*..
2. surface area of the plane $x + 2y + 2z = 12$ cutoff by $x = 0, y = 0, x = 1, y = 1.$
3. surface area of the portion of the cylinder $x^2 + z^2 = 25$ Above the first octant and bounded by the planes $x = 0, y = 0, x = 3, y = 6.$
4. Find the surface area of the paraboloid $x^2 + y^2 = az$ lying between the planes $z = 0, z = a.$
5. surface area of the portion of the sphere $x^2 + y^2 + z^2 = a^2$ lying inside the cylinder $x^2 + y^2 = ax$

2016-17

12th STUDY PROJECT - 08

As per the proceedings of the CCE, Telangana following 6 students were selected for state level presentation of their study project. Presentations were held at Sankalika vidya Bhavan, Masabtank from 07/02/17 and 08/02/17. This study project was guided by ch. Narasimharaju Assistant Prof. Department of Mathematics.

2016-17

13

GOVERNMENT DEGREE COLLEGE, KAMAREDDY

DEPARTMENT OF MATHEMATICS

STUDY PROJECT

ON

"INTERPOLATION"

"The art of reading between the lines of a table"-T.N.Thiele

Submitted by

1.	*E.Srikanth*	*MSCSIII*	*500914467010*
2.	*A.Achyuth kumar*	*MSCSIII*	*500914467001*
3.	*Y.Chandrashekar*	*MPCSIII*	*500914468055*
4.	*M.Yogesh*	*MPCSIII*	*500914468050*
5.	*K.Kiran kumar*	*MPCSIII*	*500914468014*
6.	*A.Ramesh*	*MPEIII*	*500914460004*

Guided by

Ch.Narasimharaju

Assistant professor of mathematics

INCHARGE

INCHARGE
Department of Mathematics
Govt. Degree College
Kamareddy-503111

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Govt. Degree College
KAMAREDDY-503111

2016-17

14 JJ

Proceedings of the Commissioner of Collegiate Education, Telangana
Present: Smt A. Vani Prasad, I.A.S.

Rc.No.08/AC/ Jignasa- Student Study projects/2016 Dated 31.01.2017

Sub: **Collegiate Education - Jignasa - Student Study Projects - State Level Presentations and Selections - Reg.**

Ref:- 1. Cir.No.01/ Acad.Cell/ Jignasa-Student Study Projects/2016, Dated: 24. 11.2016.
2. Cir.No.02/ Acad.Cell/ Jignasa-Student Study Projects/2016, Dated: 08.12.2016.
3. Cir.No.03/ Acad.Cell/ Jignasa-Student Study Projects/2016, Dated: 13.12.2016.

With reference to the subject cited it is informed that the Government of Telangana is giving utmost importance for enhancing quality in Higher Education Institutions (HEI's) and taking several initiatives like encouraging students to work on Study Projects which eventually inculcates the habit of research and identify the problems and solutions for the same.

In this connection, Commissionerate of Collegiate Education has instructed all the Principals to take special interest to involve students to work on at least one Study Project. The total number of projects received is 128 in 5 categories such as **Life Sciences, Physical Sciences, Social Sciences, Languages and Commerce** after scrutiny at district level.

I. To assess these projects the Principals are informed that all the students who submitted their projects along with their Lecturer/ Guide/ Supervisor shall present the project for evaluation before the state level committee, as per the schedule mentioned below.

S.No.	Name of the Category	Total No. of Projects	Date & Time (10am to 5pm)	Venue
1	**Life Sciences** (Botany and Zoology)	26	06.02.2017	* Godavari Auditorium, Sarva Shiksha Abhiyan, Hyderabad
2	**Physical Sciences** (Physics, Chemistry, Mathematics and Computer Science)	26	07.02.2017	
3	**Commerce**	24	08.02.2017	

*Avenue: Sanketika vidya Bhavan, Maasab Tank Hyderabad.

Phone No: 08468-220865

GOVT. DEGREE COLLEGE
KAMAREDDY - 503 111

Accredited with B Grade (CGPA 2.77) by NAAC

Principal: Sri. C. Prabhakar, M.Com .M.Phil.

Date: 3.02. 2017

To

The Incharge,

Dept. of Maths,

GDC, Kamareddy.

Sir,

I am happy to let you know that the Student Study Projects supervised by you and prepared by the following students has been selected for evaluation before the State Level Committee on 07-02-2017 at Godavari Auditorium, Sarvashiksha Abhiyan, Hyderabad.

1. E.Srikanth
2. A.Achuth Kumar
3. Y.Chandra Shekar
4. M.Yogesh
5. K.Kiran Kumar
6. A.Ramesh

In view of this, I inform you to prepare the students for effective presentation of their study project. College will take care of their transportation, food and accommodation facilities in Hyderabad during their stay.

Your Sincerely,

2017-2018

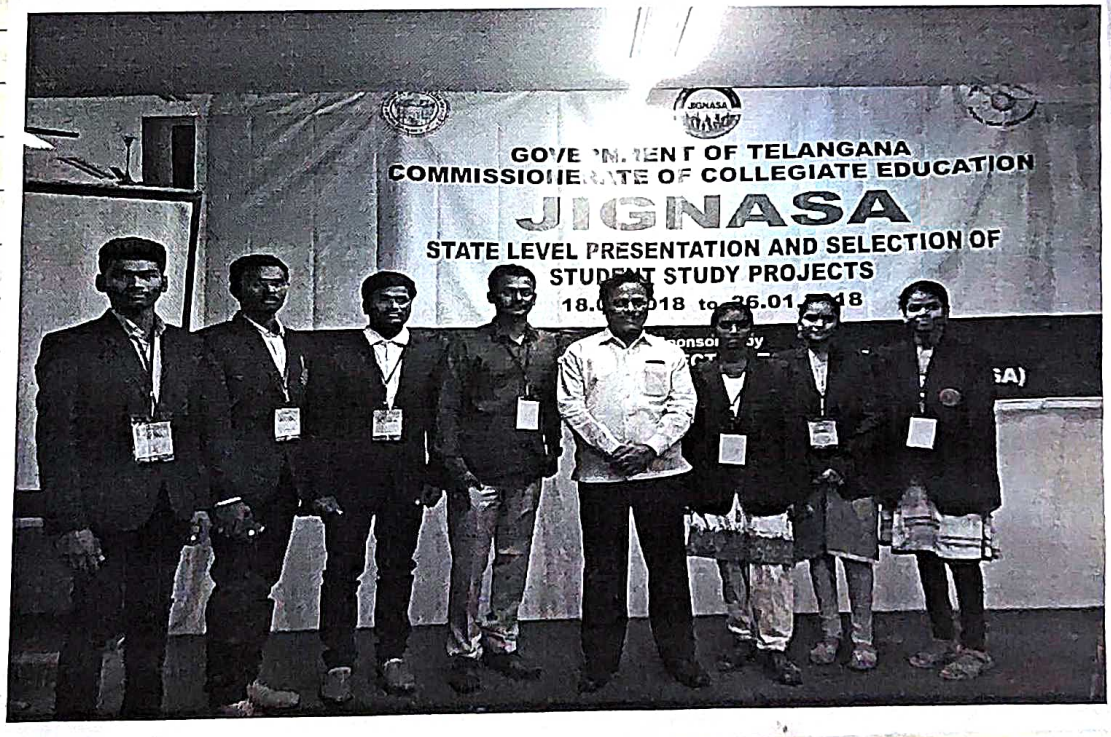
16 JIGNASA - PROJECTS

The following 6 students were selected for State level presentation of their study project.

1.	500915468003	B.Sc(MPCs)III.	K.Anil
2.	500915468014	"	K.Nagesh
3.	500915468018	"	K.laxman
4	500915468034	"	K.Samyuktha
5	500915468038	"	M.Shanthi
6	500915468053	"	S.Mounika.

These presentations were held at Sanketika vidya Bhavan, Marabtank from 20/01/18 to 21/01/18.
This project was guided by Assistant professor and I/c Department of Mathematics. The title of this project was "Length of the curve." An attempt to verify the formula.


GOVERNMENT OF TELANGANA
COMMISSIONERATE OF COLLEGIATE EDUCATION
JIGNASA
STATE LEVEL PRESENTATION AND SELECTION OF


GOVERNMENT OF TELANGANA
COMMISSIONERATE OF COLLEGIATE EDUCATION
JIGNASA
STATE LEVEL PRESENTATION AND SELECTION OF
STUDENT STUDY PROJECTS

GOVT. ARTS & SCIENCE COLLEGE

KAMAREDDY-503 111

Accredited with B (CGPA 2.77) by NAAC

Principal: C.Prabhakar, M.com, M.phil

CERTFICATE

Certified that the student study project entitled ***"Length of the Curve"-An attempt to verify the formula*** is the Bonafide work of following students under the supervision of ***CH.Narasimha Raju,*** *Assistant Professor, Department of Mathematics, Government Degree College, Kamareddy.*

S.No.	***Roll.No.***	***Class/Year***	***Name***
1.	*500915468003*	*B.Sc(MPCS) III*	*Kammari Anil*
2.	*500915468014*	*B.Sc(MPCS) III*	*Korbha Nagesh*
3.	*500915468018*	*B.Sc(MPCS) III*	*Kurma Laxman*
4.	*500915468034*	*B.Sc(MPCS) III*	*Kota Samyukta*
5.	*500914468038*	*B.Sc(MPCS) III*	*Mahankali Shanthi*
6.	*500915468053*	*B.Sc(MPCS) III*	*Sarugu Mounika*

Signature of the Supervisor

CH. NARASIMHA RAJU
ASSISTANT PROFESSOR
Department of Mathematics
Govt. Degree College
Kamareddy-503111

Head of the Department

INCHARGE
Department of Mathematics
Govt. Degree College
Kamareddy-503111

PRINCIPAL
Govt. Degree College
KAMAREDDY-503111

STUDY PROJECT

ON

APPLICATIONS OF DIFFERENTIAL EQUATIONS

Submitted

By

1. K. Anil — MPCS I year
2. J. Prabhanjan — MPE 1 year
3. N. Ramesh — MPE 1 years
4. Cy. Naveenkumar — MPCS I^st year
5. S. Sahaja — MPCS I^st year
6. S. Mounika — IBSc(MPCS)
7. Samuktha — IBSc(MPCS)

SIGN OF THE HOD

PRINCIPAL
Govt. Degree College,
KAMAREDDY

PRINCIPAL

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2019-20

21

GOVT. ARTS & SCIENCE COLLEGE
KAMAREDDY

(NAAC Accredited with 'B' CGPA 2.77)

Dept. of Mathematics

Study Project

Topic : Algorithms on Iteration methods in Numerical Analysis

Prepared By:

1.A.RAMYA (MPE III YEAR)
2.A.ANITHA (MPCs III YEAR)
3.M.SWATHI (MPC III YEAR)
4. GOUTHAMI (MPC III YEAR)
5. VITTAL (MPCs III YEAR)

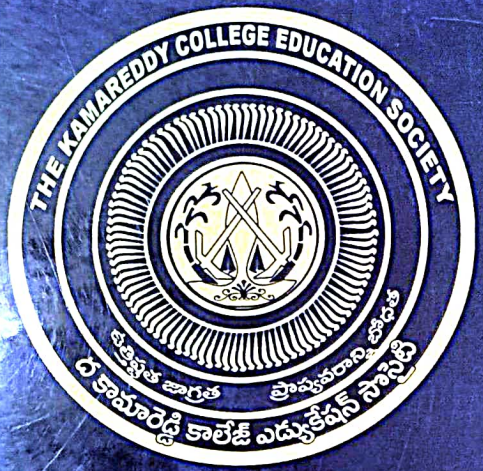
Principal
Govt. Arts & Science College
KAMAREDDY

SIGN. OF THE DEPT. INCHARGE

INDEX

GOVERNMENT ARTS & SCIENCE COLLEGE

KAMAREDDY



DEPARTMENT OF BOTANY FORESTRY

PROJECT ON

"AFFORESTRATION"

Submitted By :

N. Abhinay
M. Santhosh Kumar
K. Sravan Goud
A. Abhinay
N. Raja Rajeshwari

Guided By :

Dr. S. Anuradha
Asst. Professor in Botany

Sucharan Moshedayan
Lecturer in Forestry

GOVT.ARTS & SCIENCE COLLEGE

KAMAREDDY – 503111

Accredited With B (CGPA 2.77) by NAAC

Principal: C.Prabhakar, M.com, M.phil

CERTIFICATE

Certified that student study project entitled "Afforestation" is the bonafied work of following students under the supervision of Dr. S. Anuradha, Assist Professor And Sucharan Moshedayan, Lecturer, Depatment of Botany & Forestry, Government Degree College, Kamareddy.

S.No.	Roll.No	Class/year	Name
1.	16055009462048	B.Sc(BFC) II	N. ABHINAY
2.	16055009462040	B.Sc(BFC) II	M. SANTHOSH KUMAR
3.	16055009462024	B.Sc(BFC) II	K. SRAVAN GOUD
4.	16055009462050	B.Sc(BFC) II	N. RAJA RAJESHWARI
5.	16055009462007	B.Sc(BFC) II	A. ABHINAY

Signiture of Supervisor

Head of the Department

PRINCIPAL

AFFORESTATION

Definition :-

Afforestation refers to the establishment of forest by artificial means on an area from which forest vegetation has always (or) long been absent.

Introduction :-

In order to attain the 33% national forest cover, afforestation is inevitable one. Several countries are keeping effort to increase the forest cover of their country. Some of them are as follows

AFFORESTATION IN "INDIA"

In INDIA, 23% of overall land is under forest area which are grouped into five(5) major categories.They are

- *Sub-tropical Dry Deciduous forests (38.2%)*
- *Tropical Moist Deciduous forests (30.3%)*
- *Sub-Tropical Thorn forests (6.7%)*
- *Tropical Wet Evergreenforests (5.8%)*
- *Other Categories (Pine,Temperate,Alpine,Tropical Semi Ever green) (17.5%)*

The total forest area was 40.48 million ha in 1950 and then it was increased to 67.47 million ha forest area in 1980 and finally 69 million ha area was under forest had been reported in 2006.So massive 70.5% increase of area under cover forests had been seen between the periods of 1950 to 2006 due to afforestation.

The forest cover was 653898 square kilometer in 2001. There was an increase of 15019 square kilometer in forest cover as compared to 1995. In percentage terms, the growth was 2.35% during the period from 1995 to 2001. The percentage of forest cover to the total geographical area was 19.89% in 2001. It increased by 0.46 percentage point as compared to 1995. The forest cover was 690171 square kilometer in 2005. There was an increase of 36273 square kilometer in forest cover as compared to 2001.in percentage terms; the growth was 5.55% during the period from 2001 to 2005. The percentage of forest cover to the total geographical area was 21% in 2005. It increased by 1.11 percentage points as compared to 2001.

The forest cover was 692027 square kilometer in 2011. There was an increase of 1856 square kilometer in forest cover as compared to 2005. In percentage terms, the growth was 0.27% during the period from 2005 to 2011. The percentage of forest covers to the total geographical area

SYNOPSIS

DEFINATION: - Afforestation refers to the establishment of the forest by artificial means where the vegetation is absent for long being time.

AIM: - To increase the forest cover up to 33% by afforestating the waste land.

OBJECTIVES:-

- To reduce co2% in the atmosphere which has already reached 0.042% which is against normal of 0.03%
- To protect the catchment areas and conservation of soil
- To increase local precipitation (or) rainfall by about 5-10% to their orographic and micro climatic effect
- To reduce global warming which is responsible for the increase of earth temperature and melting of icecaps.
- To increase the commercial timber production.

METHODOLOGY:-

Information gathered from the forest department of kamareddy division is has for 2015 forest cover is 23% by planting the plants in the respective areas of kamareddy as for the FSI (Forest survey of India). The main reason for increase in forest cover is due to plantation activities carried out T.S forest department and Forest Development Corporation (TSFDC). The main reason for decrease in forest cover in Adilabad, Karimnagar district is due to rotational felling.

ANALISYS AND RESULT:-

As per that of 2013 the forest cover is 21.23% and in 2015 forest cover is 21.34% by these the forest cover has been increased by 0.11%.

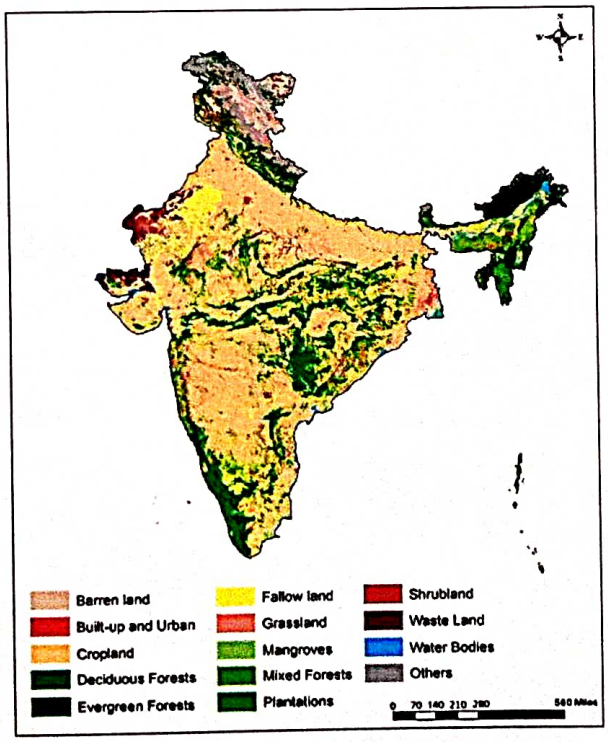
CONCLUSION:-

By planting the suitable spices in various difficult site like saline-alkaline, Ravine, Shallow black cotton and Dry and rocky areas so that we can overcome the forest problems.

was 21.05% in 2011. It increased by 0.05 percentage point as compared to 2005. The forest cover was 697898 square kilometer in 2013. There was an increase of 5871 square kilometer in forest cover as compared to 2011. In percentage terms, the growth was 0.85% during the period from 2011 to 2013. The percentage of forest cover to the total geographical area was 21.23% in 2013. It increased by 0.18 percentage point as compared to 2011.

The forest cover was 701673 square kilometer in 2015. There was an increase of 3775 square kilometer in forest cover as compared to 2013. In percentage terms, the growth was 0.54% during the period from 2013 to 2015. The percentage of forest cover to the total geographical area was 21.34% in 2015. It increased by 0.11 percentage points as compared to 2013.

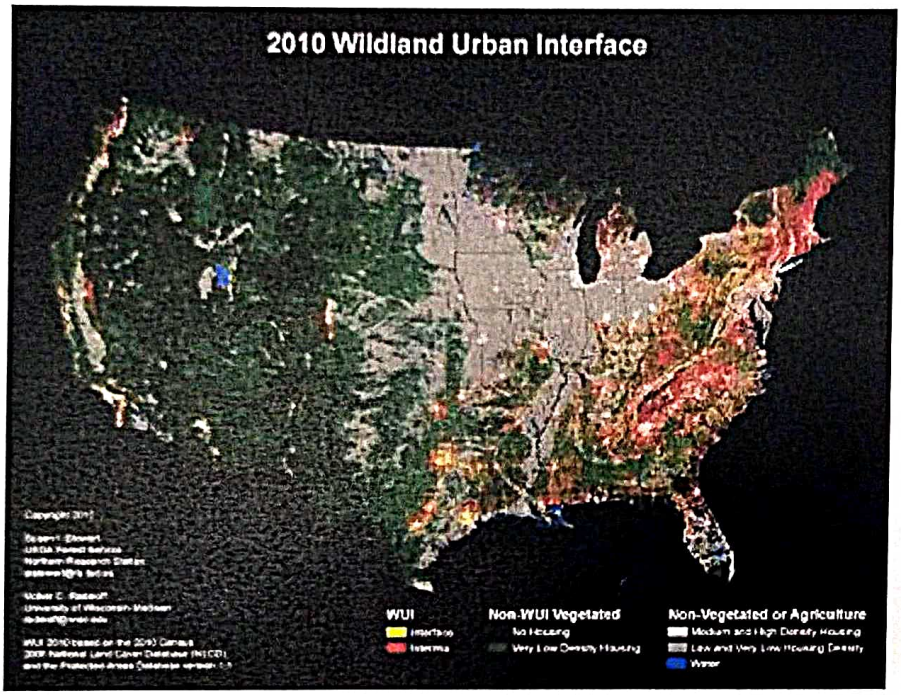
S.NO	YEAR	AREA IN (LAKHS Sq.KM)	FOREST COVER PERCENTAGE	PERCENTAGE OF INCREMENT	PERCENTAGE OF DECREMENT
1	1987	6.4	19.48	-	-
2	1991	6.3	19.45	-	0.23
3	1995	6.28	19.43	-	0.08
4	2001	6.5	19.89	2.35	-
5	2005	6.85	21	1.1	-
6	2011	6.9	21.05	0.5	-
7	2013	6.96	21.23	0.18	-
8	2015	7	21.34	0.11	-



AFFORESTATION IN OTHER COUNTRIES

U.S :-

Increasing the no. of land owners are converting crop land marginally into forest. This is being done to decrease the pressure on the use of existing hard work species of forest like black cherry, black walnut and northern red oak.



South Africa :-

In South Africa, about 0.5% of land is covered with indigenous forest, 1.1% forests formed by Total Commercial tree Afforestation (TCA). The advantage of planning a species like pine is it helps check infections the tree is prone to in its native country and climate, thus producing higher production. Pursuant to belt growth and higher yields due to afforesting of these alien species.

It can produce and export close to two million tons of wood and wood products.

OBJECTIVES OF "AFFORESTATION"

- *To increase the wood production.*
- *To increase fossil fuels for future.*
- *To reduce CO_2 percentage in the atmosphere has already reached 0.042% against the normal of 0.03%.*
- *To protect the agro-ecosystems.*
- *To protect the catchments areas and conservation of soils.*
- *To avoid desertification.*
- *To increase the aesthetic view of a landscape.*
- *To increase local precipitation or rainfall by about 5 to 10% due to their orographic and microclimatic effects.*
- *To reduce global warming which is responsible for increase of earth's temperature and melting of ice caps.*
- *To increase the forest cover from 24% to 33% this is standard forest cover to lead comfort.*
- *To reduce greenhousegasses. Like CO_2, methane etc……*
- *To increase living standard of people.*
- *To increase raw materials production for industries, medicine etc…*
- *To maintain the productivity of the soil by adding a large quantity of organic matters and recycling of nutrients.*
- *To earn good sum of revenue to the government which is used for various developmental works*
- *To increase production of valuable products like fibers, wood, flosses, tans, dyes, essential oils, gum resins, spices, lac, drugs etc….*
- *To increase production of edible products like fruits, flowers, seeds, tubers etc. to meet the needs of increasing population.*
- *To increase industrial wood plantation.*
- *It reduces Soil erosion.*

Methods of AFFORESTATION:- *For afforestation special care is needed in soil working, selection of species, method of plantation and maintenance.*

Soil working :- *Itshould aim at*

- *Proper conservation of soil and moistures.*
- *Drainage of excess moisture.*
- *Removing obstruction for root growth.*
- *Removing toxicity from the root zone.*

Species selection :-

- *It is adapted to the site.*
- *It shows high establishment rate.*
- *It has a good root system.*
- *It has faster rate of growth.*
- *Good recovery from damage.*

DRY AND ROCKY AREAS :-

Dry, Rocky and murrumy soils are problematic areas and such soils are generally called skeletal soils. The total area occupied by such soils is around 3.00 million hain the country.

Locality Factors :-

These soils are very shallow,coarse,poor,eroded and degraded.Due to shallow soils,the vegetation is xerophytic in nature.This soil occur both in low and high rainfall areas.The temperature ranges from 21-45^{0}C.

Soil working:-

Soil working in these areas should aim at conserving soil and moisture and increase in the soil depth.Contourtrenches or staggered trenches are made in order to conserve maximum amount of moisture.In some of the rocky areas,100cm deep pits have been dug to ensure the success of plantation.

Suitable species:-

The selection of species is carried out depending upon the rainfall and climatic factors of the area.The suitable species are Eucalyptus tereticornis,Dendrocalamus strictus,Malia azedarach, Albizia lebbek,Prosopis chilensis,Cassia siamea,Acacia spp...

DRYAND ROCKY AREAS IN BASWANNAPALLY, GUNDARAM

MINED AREAS:-

Distribution:-

Open cast mining for several minerals,e.g.:-coal,bauxite,lime stone,slate etc… Is quite common. In this process various heavy machines are used to excavate the earth.

Locality Factors :-

The site conditions are very difficult for the growth of plants. The topography is highly undulating, surface covered with boulders, lateritic heaps, etc. Organic matter is completely absent. Biotic interference is also high.

Soil Working :-

Before undertaking plantation, it is necessary to somewhat level the area with the help of dozers, for it is easy to make pits in leveled areas. Pits of the size 60 cm are usually dug at a spacing of 2m × 2m. The pits should be filled up with fertile soil of nearby forests. Farmyard manure at the rate of 0.5 kg/ pit has been found useful.

Suitable Species :-

Acacia auriculiformis, Dalbergia sissoo, Eucalyptus camaldulensis, Grevillea robusta, G. pteridifolin, Pinus caribean , Albizia lebbeck, Prosopis chilensis and Cassia siamea.

MINED AREAS IN ELICHPUR, KAMAREDDY

ROAD SIDE PLANTATION (Avenues) :-

Locality:-

Some of the states e.g. Punjab, Haryana, Gujarat, Uttar Pradesh and many other state have taken over the road side areas for social forestry plantation. Road side plantation have several problems of protection from local population and cattle. The soil conditions are varying depending upon the area through which roads pass.

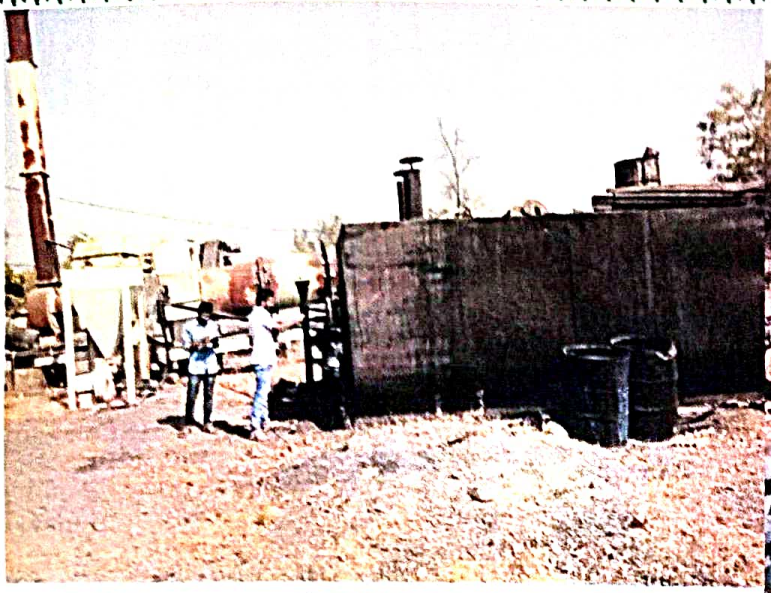
Soil Working :-

Soil working depends upon the soil type, rainfall, species to be planted and various other factors. Usually 0.3×0.3×0.3 m pits are dug in better areas. Deep soil working is done in poor soils. Large plants are generally used for road side plantations. Special effects such as irrigation and fencing of each plant are made for the success for these plantations. Cooperation from local population is the most important factor for the success of these plantations.

Selection Of Species :-

Mangierindicia, Tamarindusindicia, Dalbergia sissoo, Ficus glomerata, F.retusa, Azadirachta indicia Pongamia pinnata. Syzygium cumini, Madhuca indicia, Polyalthia longifolia, Vateria indica, Swietenia macrophylla, Acacia nilolica, Hardwickia binata, Populus nigra.

AVENUES IN SADASHIV NAGAR, KAMAREDDY



➢ FIELD WORK IN OUR COLLEGE:-

- **VILLAGE:- Devanpally**
- **SOIL:- Shallow black cotton**
- **SUITABLE SPECIES:- Acacia nilotica, A. catechu, Azadirachta indica, Acacia Leucophloea, Tamarindus indica, Prosopis chilensis, Eucalyptus tereticornis, Albizia lebbeck.**

Government of Telangana

Commissionerate of Collegiate Education

Certificate of Participation

Awarded to

Dr. S. Anuradha

LDC, Kamareddy.

for presenting study project on

AFFORESTRATION

at

IIGNASA

State Level Presentation Programme

held from

18th to 26th January, 2018.

Sponsored by

State Project Directorate

Rashtriya Uchchatar Shiksha Abhiyan

(RUSA)

Officer in charge

Commissioner

Government of Telangana

Commissionerate of Collegiate Education

Certificate of Participation

Awarded to

Sucharan Moshe Dayan.

Gdc, Kamareddy

for presenting study project on

Afforestation

at

IIGNASA

State Level Presentation Programme
held from
18th to 26th January, 2018.

Sponsored by

State Project Directorate
Rashtriya Uchchatar Shiksha Abhiyan
(RUSA)

Officer in charge

Commissioner

Government of Telangana

Commissionerate of Collegiate Education

Certificate of Participation

Awarded to

Mr. Sravan Goud, II yr. B.Sc (BFC), Roll No: 1605500946 2024

for Evaluating / Supervising / Presenting / Students Study Project on

"AFFORESTRATION"

at **JIGNASA-2017** District Level Presentation and Selection of Student Study Projects

held on 15th December 2017

Organised by : District Resource Centre (DRC), Govt. Arts & Science College, Kamareddy.

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Co-Odrinator

Prinicipal

Government of Telangana

Commissionerate of Collegiate Education

Certificate of Participation

Awarded to

Mr. N. Abhinay, B.Sc (B.F.C) II yr. Roll No: 160550094620048

for Evaluating / Supervising / Presenting / Students Study Project on

"AFFORESTRATION"

at **JIGNASA-2017** District Level Presentation and Selection of Student Study Projects

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Co-Odrinator

Prinicipal

Government of Telangana

Commissionerate of Collegiate Education

Certificate of Participation

Awarded to

Mr. M. Santhosh Kumar, II B.Sc (BFC), Roll No: 1605509462040

for Evaluating / Supervising / Presenting / Students Study Project on

"AFFORESTRATION"

at **JIGNASA-2017** District Level Presentation and Selection of Student Study Projects

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