

SYNTHESIS AND STUDY OF BIOLOGICAL ACTIVITIES OF BIMETALLIC COMPLEX

ABSTRACT

The reagent (N,N-bis (o-Vanillinidene) ethylenediamine) is synthesized and it is characterized by FT-IR, NMR. This ligand used to coupled with Ni(II) to get Monometallic complex. Another monometallic complex have been prepared by using 1-Nitroso-2-naphthol as a reagent with Fe (III). The combination of these two will give Hetero-bimetallic complex. The prepared complex is characterized by using FT-IR,UV-Visible Spectroscopy. The said complex shows promising Antimicrobial Activity against S.aureus , B.subtilus ,S.typhi and E.coil.

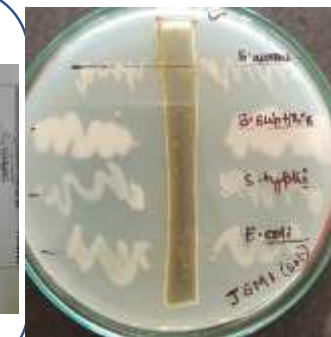
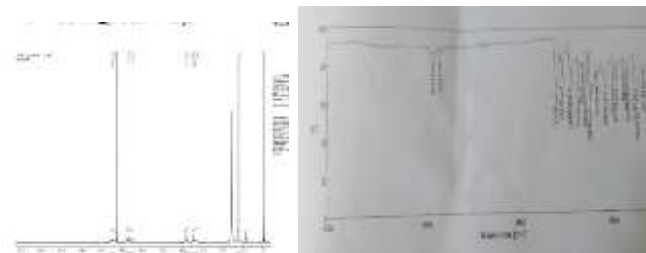
INTRODUCTION

The recent trend is use of bimetallic complexes as a bioactive molecule .Two metals present in the complex may be same or different. As compared to monometallic complexes, bimetallic complexes provide faster reaction rate and greater selectivity. In short, the field of bimetallic complexes is faster growing field because of their promising bioactivities.

OBEJECTIVES

The bimetallic complexes may have higher bioactivity as well due to the double chelating effect of ligands in transition metal complexes.. This work is used to synthesis and study of biological activities of bimetallic complex.

CHARACTERISATION



Active against S.aureus, B.subtilus, S.typhi and E.coil.

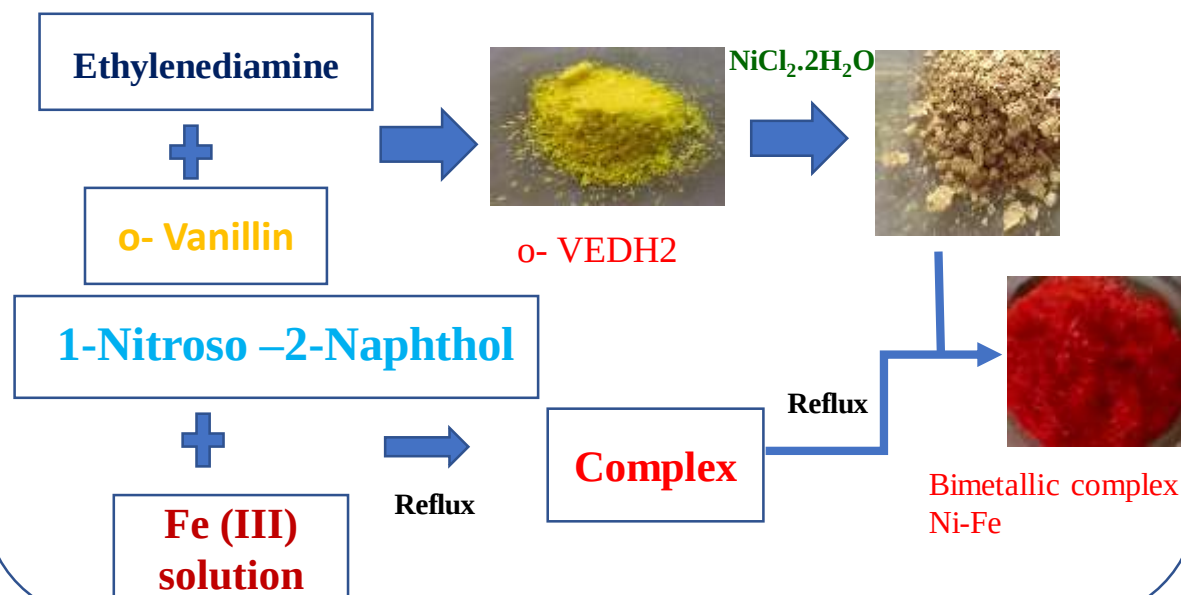
CONCLUSION

Reagent and bimetallic complex synthesized. This Synthesized reagent characterized through spectral study. Bimetallic complex gives promising result against S.aureus, B.subtilus ,S.typhi and E.coil.

REFERENCES

- 1) HK. Tanui, 'Bimetallic complexes; A mini review of their synthesis, and potential antitumor activities' April 2019.
- 2) BJ Pandya, PK Bhattacharya, 'Studies on some ternary complexes and heterobinuclear complexes of oxovanadium (IV)' Indian J. Chem. 1985;Vol 24A: 403-406.

MATERIALS AND METHODS



पालघर तालुक्यातील फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव

Category - 1

Slot No -

Level – U.G.

गोषवारा

‘भौगोलिक दृष्ट्या निकट असणाऱ्या समाजापैकी सामाजिक-सांस्कृतिकदृष्ट्या उच्च वर्गाचा प्रभाव निम्नस्तरातील समाज जीवनावर व संस्कृतीवर पडतो. ‘पालघर तालुक्यातील फुदगी समाजावर आदिवासी, आगरी, वाडवळ, मांगेला समाज संस्कृतीचा प्रभाव आहे.’ हे गृहीतक विचारात घेऊन फुदगी समाज संस्कृतीचा शोध घेण्यात आला आहे. हे संशोधन करताना पालघर तालुक्यातील केळवा, माहीम, खारेकुरण आणि शिरगाव या गावातील फुदगी पाडे संशोधनाच्या केंद्रस्थानी ठेवण्यात आले आहेत.

प्रास्ताविक

फुदगी समाज-संस्कृती संशोधनासाठी निवडण्यामागची भूमिका: ब्रिटिश काळात भारतात गुलाम म्हणून आणलेली ही एक विशिष्ट जमात आहे . अतिमागास आणि अल्पसंख्यांक समाज आहे .अलीकडच्या काही वर्षात इतर मागासवर्गीय जमातीत (ओ.बी.सी.) समावेश करण्यात आला असला तरी जातीचे प्रमाणपत्र सर्वांना उपलब्ध झालेले नाही. शिक्षणाचे प्रमाण अत्यल्प आहे. गुन्हेगार म्हणून पूर्वी हा समाज ओळखला जाई. पालघर आणि वसई या दोन तालुक्यातील ठराविक गावांपुरताच हा समाजसिमीत आहे. चेहरापट्टी व स्वनउच्चारणाची विशिष्ट पद्धत यामुळे सहज वेगळी दिसणारी ही जमात. स्वतःची अशी विशिष्ट संस्कृती नाही. वाडवळ, आदिवासी, मांगेला, आगरी समाज संस्कृतीच्या प्रभावातून तयार झालेली संमिश्र संस्कृती आहे.

उद्दिष्ट/ हेतू:

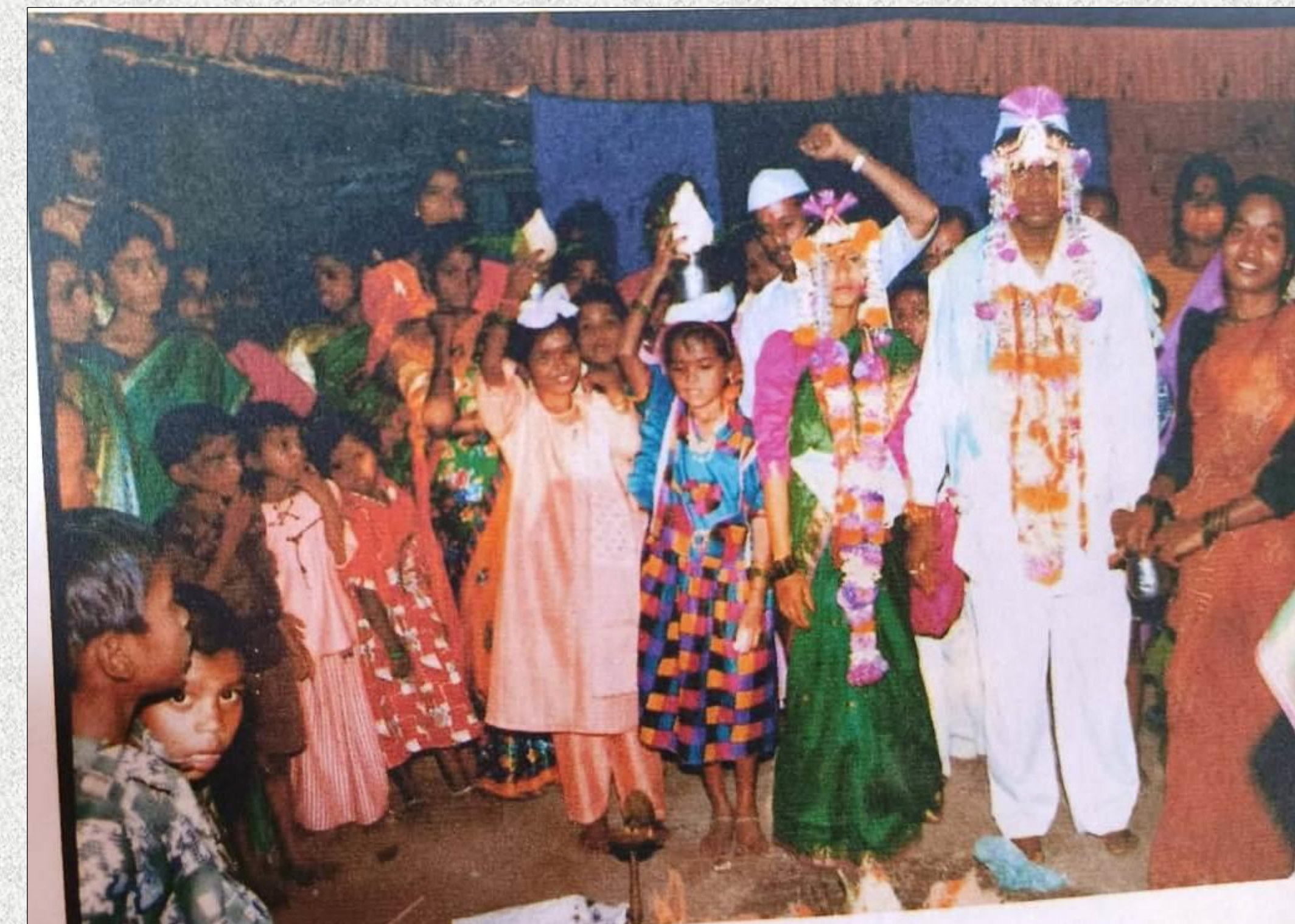
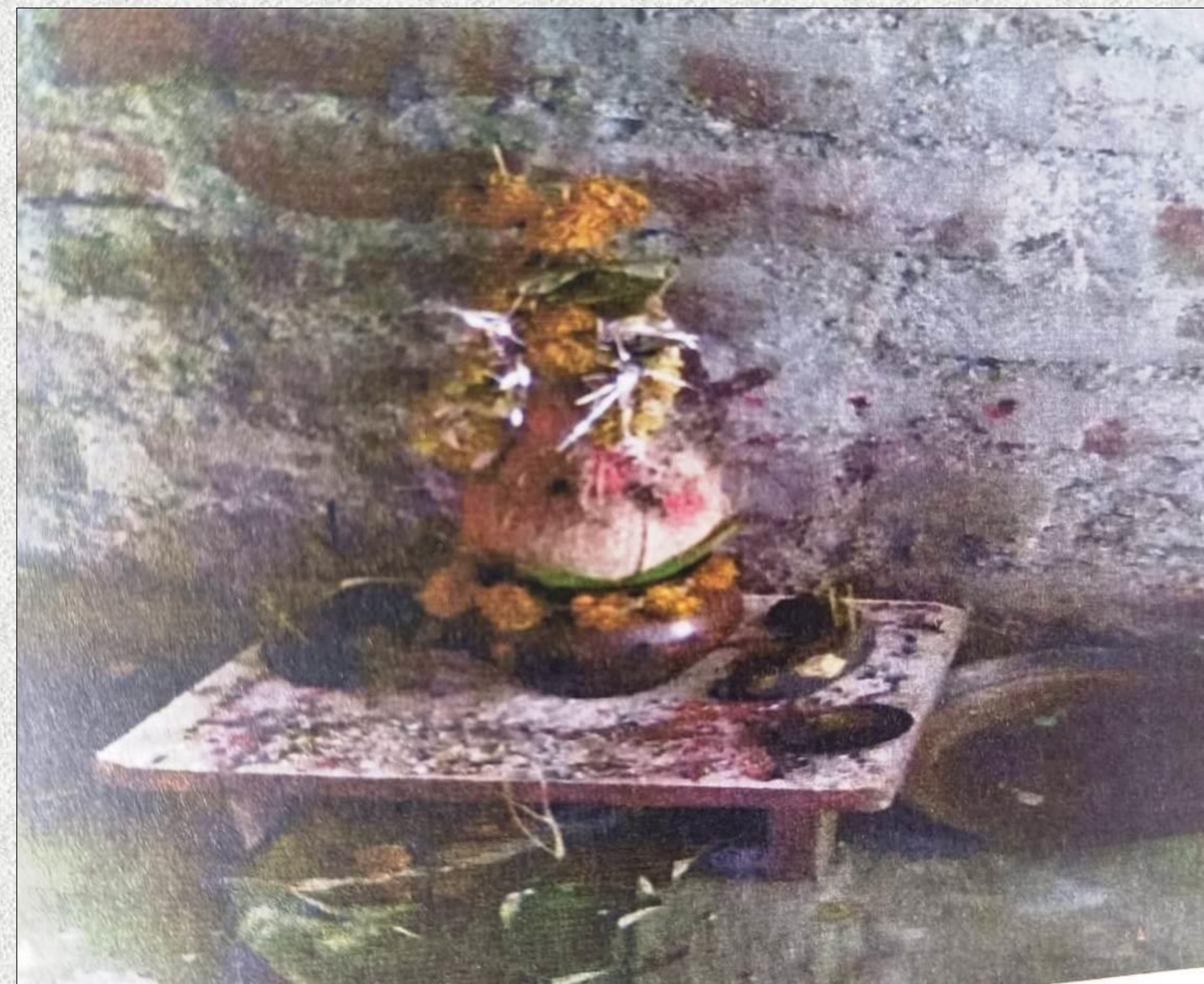
- १) दुर्लक्षित व अतिमागास फुदगी समाजाचे अस्तित्व अधोरेखित करणे.
- २) फुदगी समाजावर अन्य समाज संस्कृतीचा असलेला प्रभाव शोधणे.

संशोधन पद्धत :

प्रस्तुत विषयावरील संशोधन करीत असताना क्षेत्रीय अभ्यासपद्धत व मुलाखत तंत्राचा वापर केला आहे.

निष्कर्ष :

- माहीम- टेंभी येथील फुदगी वस्ती मांगेला समाजाच्या वस्ती नजिक असल्याने मांगेला समाज संस्कृतीचा प्रभाव दिसतो. (मांगेला समाजातील होळी गीतांचा प्रभाव, मांगेला समाजातील पुरुषांप्रमाणे पेहराव)
- पालीपाडा आणि रांजणपाडा हे फुदगी पाडे आदिवासी पाड्याजवळ आहेत त्यामुळे आदिवासी संस्कृतीचे अनुकरण झालेले दिसते. (मृत्यूनंतर बात लावली जाते, लग्नात भगत बोलावला जातो, भगताला बोलवून जागरण घातले जाते)
- वाडवळ समाजाच्या शेतीवाडीत काम करणाऱ्या फुदगी समाजावर वाडवळी लग्नगीतांचा प्रभाव दिसतो.
- पालघर तालुक्यातील काही फुदगी लोकं मांगेला समाजासोबत मासेमारी करताना दिसतात. काही वाडवळ समाजाप्रमाणे शेतीवाडी करताना दिसतात. काही फुदगी आगरी समाजाच्या मिठागरांमध्ये काम करतात तर बहुतांश फुदगी आदिवासींप्रमाणे शेतमजुरी करतात.
- मांगेला, वाडवळ, आदिवासी, आगरी समाजातील आडनावे स्वीकारलेली आहेत. (शिनवारी, पटकर, मलकर, राउत, पाटील, नाईक)
- फुदगी समाजावर मांगेला, वाडवळ, आदिवासी, आगरी समाज संस्कृतीचा प्रभाव आहे.



महाविद्यालयीन विद्यार्थ्यांचा बोलीविषयक दृष्टिकोन आणि तो संवर्धित करण्याच्या उपाययोजना

Category - 1

Slot No:

Level – P.G.

गोषवारा

मानवाचा शैक्षणिक विकास हा त्यांच्या बोली भाषांना मारक ठरतो. बोली या गावठी असतात, त्यातून अभिव्यक्त होणे हे अप्रतिष्ठेचे मानले जाते. असा समज प्रचलित आहे. महाविद्यालयीन शिक्षण घेत असताना विद्यार्थ्यांना आपल्या बोली वारश्याची जाणीव आहे का ? हे तपासणे गरजेचे आहे. कारण हाच समूह बोलीभाषा विसरतो आहे आणि हाच समूह बोली जिवंत ठेवू शकतो. या संशोधन प्रकल्पात ‘महाविद्यालयीन विद्यार्थी बोली आणि बोली संवर्धना बाबतीत अनभिज्ञ आहेत’. हे अभ्युपगम आहे. संशोधनातून याची सत्यता पटली. विविध तज्ञांच्या बोली संदर्भातील विचारांचा आधार घेत उपाययोजना सुचविल्या आहेत.

प्रास्ताविक

कोणतीही बोली आपले सांस्कृतिक संचित आहे. बोली हा सामाजिक सांस्कृतिक वारसा देखील आहे. आजच्या काळात बोली झपाट्याने नष्ट होताना दिसत आहे. डॉ. गणेश देवी याभाषातज्ञांनी ‘बोलीसंहार’ ही संकल्पना मांडली आहे. जगातल्या अनेक बोली नामशेष झाल्या आहेत. बोलीचे जतन करणे आणि महाविद्यालयीन विद्यार्थ्यांमध्ये बोली संवर्धनाविषयी प्रबोधन करणे. हा या संशोधनाचा हेतू आहे.

उद्दिष्ट/ हेतू:

- १) महाविद्यालयीन विद्यार्थ्यांचा बोलीविषयक दृष्टिकोन तपासणे.
- २) बोली संवर्धनाच्या उपाययोजना सूचविणे.

संशोधन पद्धत :

- १) क्षेत्रीय संशोधन पद्धती
- २) सर्वेक्षण
- ३) मुलाखती

प्रत्यक्ष संशोधन

सदर संशोधनासाठी २२ प्रश्नांची प्रश्नावली तयार करण्यात आली. यात वस्तुनिष्ठ स्वरूपातले तर काही प्रश्न वर्णनात्मक स्वरूपाचे आहेत. विद्यार्थ्यांना विस्तृत लिहिण्याची संधी देण्यात आली. हा अभ्यास विशेषतः किनारपट्टीवरील महाविद्यालयात केला. सोनोपंत दांडेकर महाविद्यालय पालघर, अण्णासाहेब वर्तक महाविद्यालय वसई महाविद्यालयातून सर्वेक्षण अर्ज भरून घेण्यात आले. यास संमिश्र प्रतिसाद मिळाला.

निष्कर्ष

- महाविद्यालयीन विद्यार्थ्यांमध्ये बोलीविषयी जागरूकता दिसत नाही.
- त्यांच्या बोलीला ‘गावठी’ असे म्हणतात.
- त्यांना बोली भाषा आणि प्रमाण भाषा यातील फरक समजत नाही.
- आपल्या बोलीमध्ये कोणते शब्द आता वापरले जातात हे देखील विद्यार्थ्यांना सांगता येत नाही.
- काही अपवाद सोडल्यास सर्व विद्यार्थ्यांना आपली बोलीभाषा ही प्रतिष्ठेची वाटते.
- पालघर जिल्ह्यातील बोली अजूनही कोणत्याही मालिकांमध्ये वापरलेली नाही.
- पालघर जिल्ह्यातील आदिवासी बोली ही सोशल मिडीयात वापरली जाते.
- विद्यार्थ्यांना आपली बोली भाषा नष्ट होत आहे याची जाणीव देखील दिसत नाही.
- त्यांना बोली विषयक जाणीव कोणीही करून दिलेली नाही.

उपाययोजना

- महाविद्यालयीन विद्यार्थ्यांचे बोली संदर्भात प्रबोधन करणे.
- बोलीचे महत्व पटवून देणे.
- बोली भाषेमध्ये विविध स्पर्धा आयोजित करणे.
- कोणतीही बोली ही ‘गावठी’ नसते हे विद्यार्थ्यांना पटवून देणे.
- विद्यापीठीय अभ्यासक्रमामध्ये बोलीभाषाचा अंतर्भाव करणे.
- बोलीचे नमुने ध्वनिमुद्रित करण्यास प्रोत्साहन देणे.
- अभ्यासक्रमात बोलीभाषांना प्राधान्य देणे.
- बोलीभाषेत साहित्यनिर्मिती करण्याकरिता विद्यार्थ्यांना चालना देणे.

तू पाहनी जाधेल काय?(वारली)

यी कायचेकाय सांगतयं (आगरी)

मी कोकणातला असय(मालवणी)

आज माना शालत जाया निही वाटं(मल्हार कोळी)

University Aviskar Research Convention 2022-23

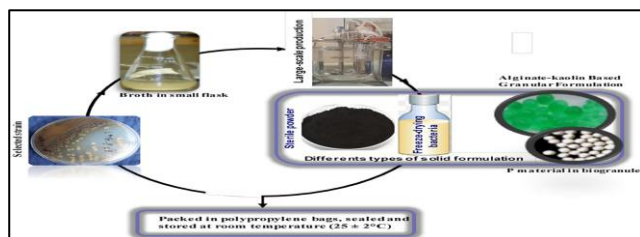
Biofertilizer To Enhance Chlorophyll Contents

ABSTRACT

In the present investigation, comparative studies have been done, to find the effect of air pollutants generated from the exhaust of industries and automobiles on the chlorophyll content of leaves. And finding out nitrogen fixation bacteria, phosphate solubilizing bacteria, and formulation of biofertilizer to overcome the effects of air pollution on plants. The leaves samples of spinach (spinacia oleracea), Fenugreek were collected from areas with potentially higher and lower levels of air pollution. Photosynthetic pigments chlorophyll- a, chlorophyll-b and total chlorophyll were quantified. A reduction in the photosynthetic pigments of plant leaves growing in higher polluted sites as compared to non or less polluted ones. Nitrogen is one of the important elements used during chlorophyll synthesis. The reduction in chlorophyll content is due to degradation of chlorophyll into pheophytin by the loss of magnesium ions. Chlorophyll content may differ in different periods of time under different conditions of pollution stress and different meteorological conditions. The utilization of plant growth promoting rhizobacteria (PGPR) in agriculture is continuously increasing as it offers an effective tool to replace the use of chemical fertilizers, pesticides and other harmful supplements (Ansari et al., 2017, Ansari and Mahmood, 2019a). Growth promoting substances are produced in huge quantities by the action of these rhizosphere microorganisms that directly or indirectly influence the overall morphology and physiology of the crops. Recent advances in the field of sustainable development relies on the use and diversity of PGPR, their colonizing capability and the mechanism of action that may be used to facilitate their application as a dependable element in the management of sustainable agricultural system (Bhattacharyya and Jha, 2012, Di Benedetto et al., 2017, Ansari and Mahmood, 2019a, Ansari and Mahmood, 2019b).

MATERIAL AND METHOD

1. The chlorophyll and carotenoids contents from the heavily air polluted area were quantitatively estimated by Arnon's (1849) method. The results thus obtained were compared with the control.
2. Formulation of biofertilizer by using nitrogen fixing bacteria and phosphate solubilizing bacteria (PSB).
3. Plants grown under formulated biofertilizer and further chlorophyll content were estimated and studied.

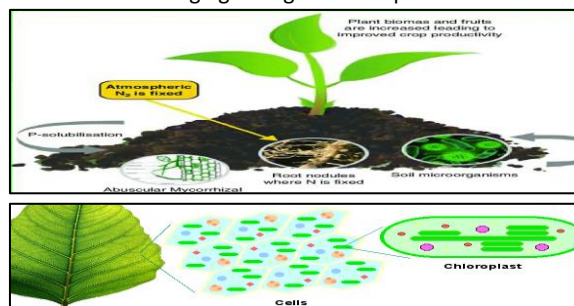


CONCLUSION

The total chlorophyll content, chlorophyll-a, chlorophyll-b, estimated by using Arnon's method. Total chlorophyll were found to be less for samples collected from industrial area comparing to samples from non-polluted site. Biofertilizers increase the availability of plant nutrients and can help in maintenance of the soil fertility over a long period. As discussed earlier, some microorganisms have the beneficial role of biological nitrogen fixation to supply nitrogen to crops, solubilizing insoluble phosphates to plant-available (soluble) forms and synthesizing biomass for manuring of crops. Biofertilizers are, therefore, economical, renewable and eco-friendly, but they cannot totally replace chemical fertilizers. Biofertilizer use is an important component of Integrated Nutrient Management and organic farming. These technologies are becoming vital in modern-day agricultural practices. The changing scenario of agricultural practices and environmental hazards associated with chemical fertilizers demand a more significant role of biofertilizers in coming year

OBJECTIVE

1. N2 Fixation
2. Phosphate solubilization
3. Enhancement of chlorophyll content
4. Reduce aging of vegetable crops



REFERENCES

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- E. Manolopoulou1, Th. Varzakas2 and A. Petsalaki2, *Chlorophyll Determination in Green Pepper using two different extraction methods* 1Dept. of Crop Production Technological Educational Institute of Peloponnese, School of Agricultural Technology, Food Technology and Nutrition2Department of Food Technology, Antikalamos 24100 Kalamata, Greece. Becky Nancy Aloo 1,* , Ernest Rashid Mbega 2

RESULTS

S1(*spinacia oleracea*):-
Family: Amaranthaceae
Method used: **Arnon's method**
Total chlorophyll= 20.938 ug/ml
Chlorophyll-a = 8.120 ug/ml
Chlorophyll-b = 12.822 ug/ml



S2 (*spinacia oleracea*):-
Family: Amaranthaceae
Method used: **Arnon's method**
Total chlorophyll= 22.187 ug/ml
Chlorophyll-a = 8.156 ug/ml
Chlorophyll-b = 14.424 ug/ml



S3(*Trigonella foenum-graecum*)
Fenugreek:
Family: Fabaceae
Method used: **Arnon's method**
Total chlorophyll= 23.279 ug/ml
Chlorophyll-a = 8.313 ug/ml
Chlorophyll-b = 14.974 ug/ml



S4(*Trigonella foenum-graecum*)
Fenugreek:
Family: Fabaceae
Method used: **Arnon's method**
chlorophyll= 20.86 ug/ml
Chlorophyll-a = 8.023 ug/ml
Chlorophyll-b = 12.854 ug/ml



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Category : Humanities, Languages & Fine Arts

Level : UG

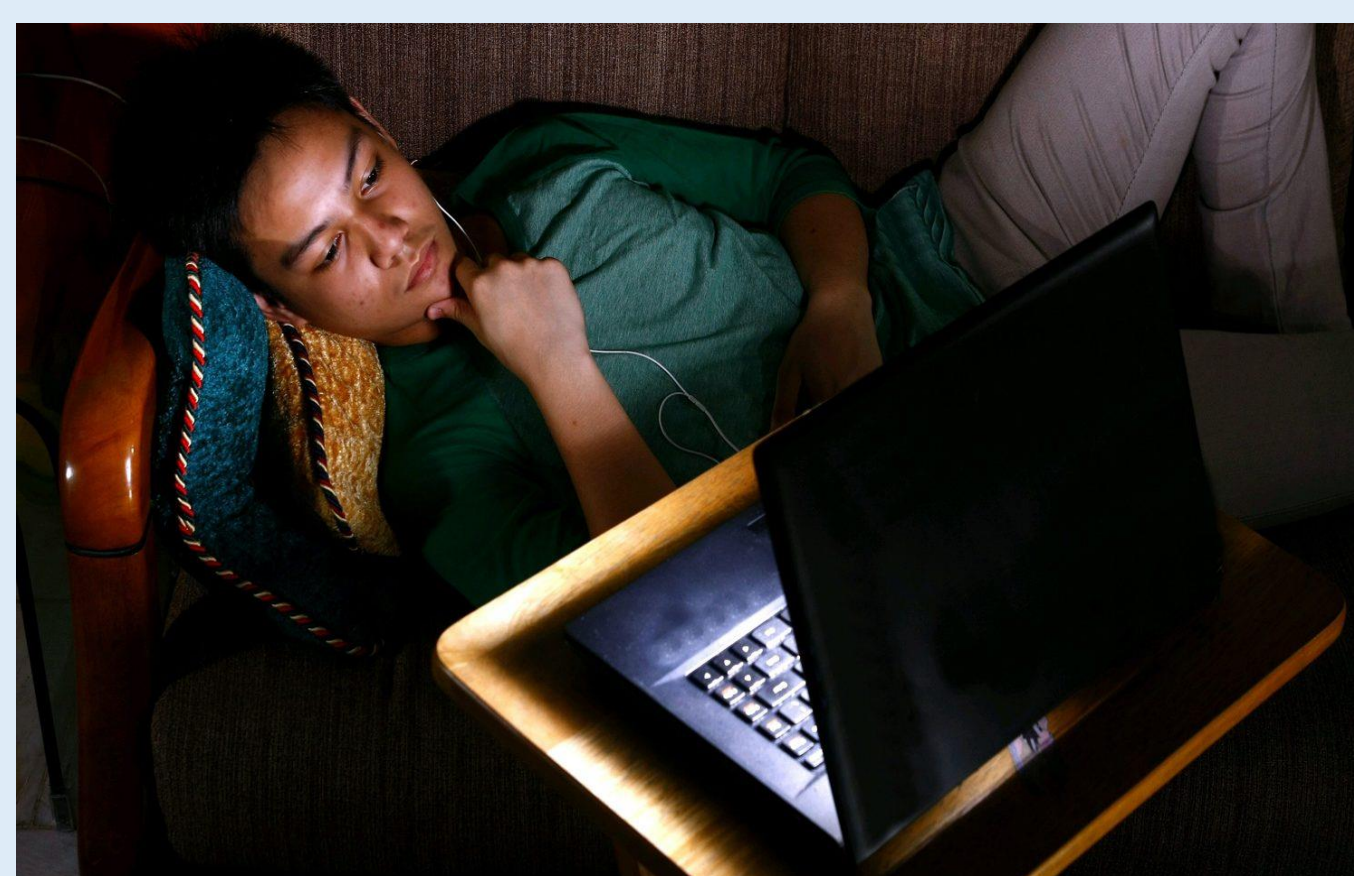
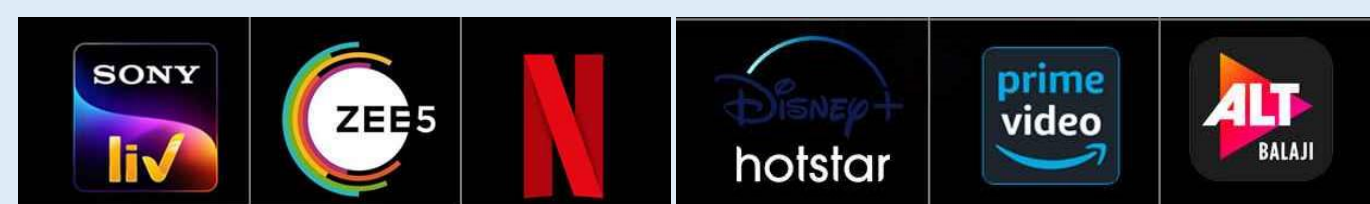
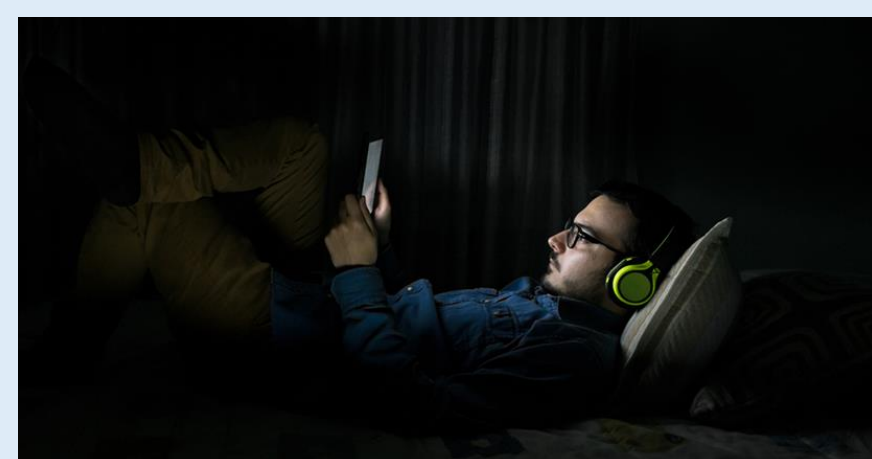
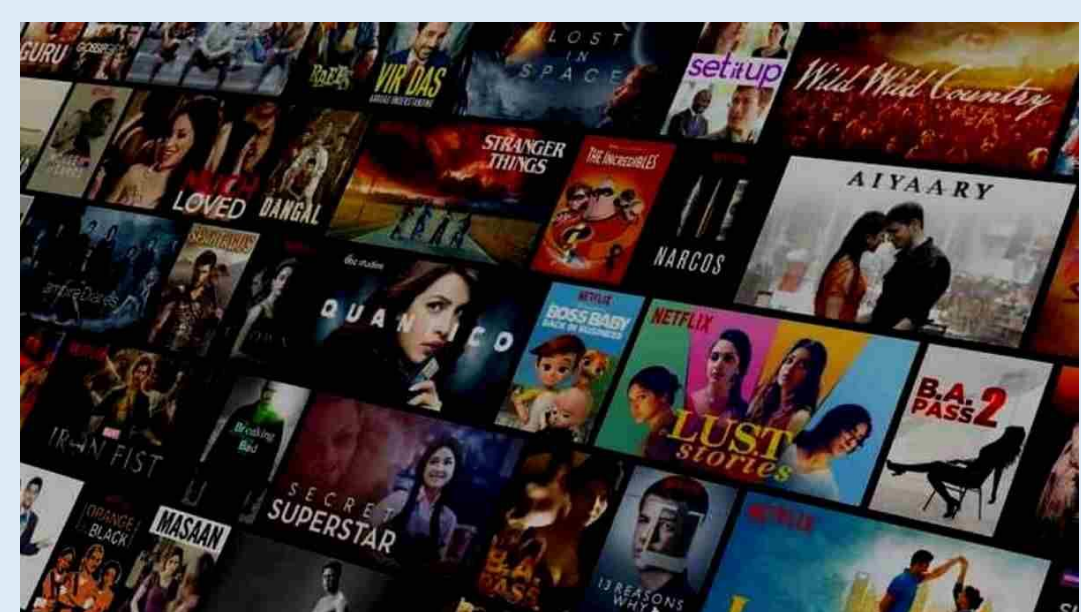
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BINGE (WEB SERIES) WATCHING IN NEW ERA

ABSTRACT

Web series and online streaming material are increasingly popular today across all age groups. With the rise of internet streaming and the production of web series material in India and other nations, web series are rapidly replacing television. Different OTT platforms, including YouTube, Amazon Prime, Netflix, Hotstar, and other platforms, have made significant investments in local content recently. Because they take us places that television won't, web series have become more and more popular in India in recent years. The public can view programmes whenever it's convenient for them thanks to web series and internet streaming.

The psychosocial effects of web series and other online streaming content on people of all ages are the main subject of this study. The researcher also looked into how people perceived online streaming and web shows. Information was gathered from the respondents through direct communication and a questionnaire. The respondents ranged in age from 14 to over 40 and came from a variety of institutions, including schools, colleges, universities, and working professionals. As a result, this study encompasses all facets of web series bingeing in the new era that have an impact on an individual's overall performance.



WEB SERIES



LITERATURE REVIEW

❑ **Dhiman, B., & Malik, P. S. (2021)**

“Psychosocial Impact of Web Series and Streaming Content: A Study on Indian Youth”

❑ **Pramit Gupta February 26, 2021**

“The Factors Effecting Shift of Indian Customers from T.V Series to Web Series- the Future of OTT Services in India”

❑ **Unnimaya P Devan, Mekha Babu Febi Jstin , Sandy Viju 2021**

“Increasing Trend and Effects of Web Series Among Youth”

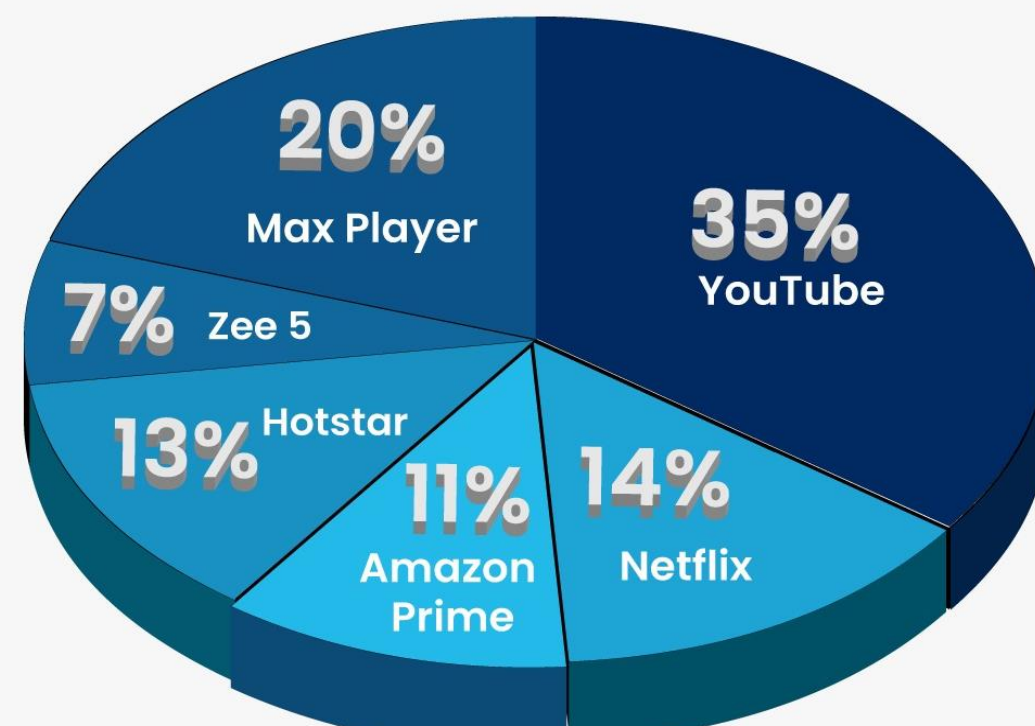
DATA ANALYSIS AND INTERPRETATION

How long do you usually spend viewing web series in a day?



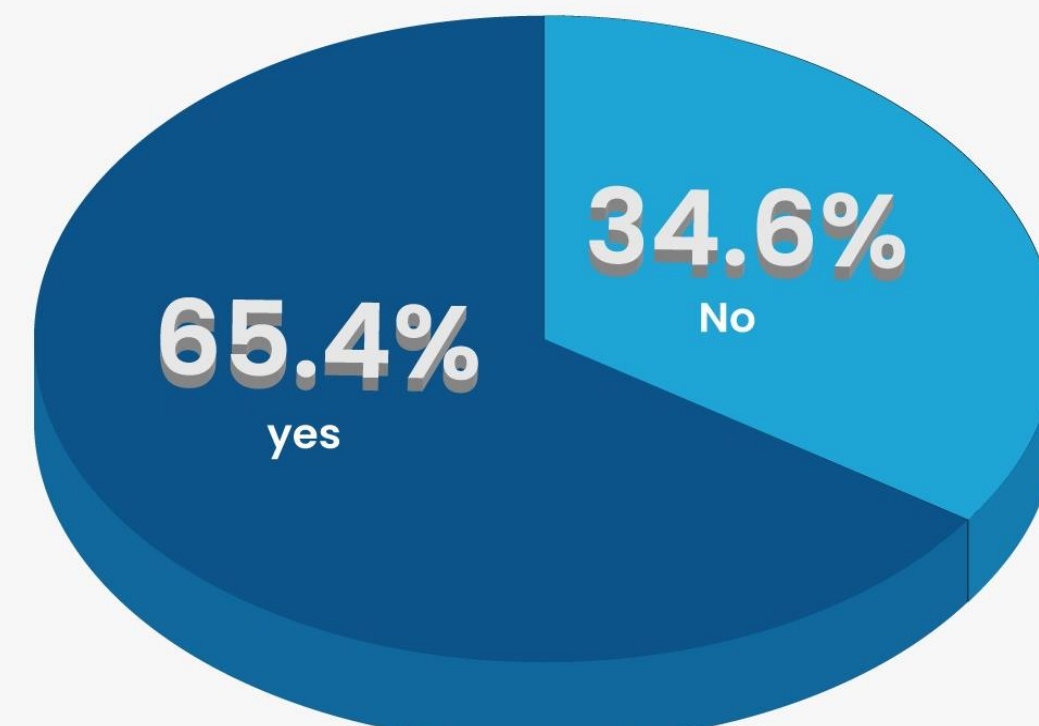
Around 38% Respondents are watching 0-1 hour daily. 48.80% people are watching around 2-3 hours and the age group of 18-25 watches more web series.

Which OTT platforms do you use to watch the web series?



35% respondents are using YouTube when we asked them, their answer was its free they don't have to pay. Others are paid and those are using paid their family members are using membership

Do you think web series are affecting you socially and psychologically ?



When asked to the respondents whether the web series and online content have psychological and socially effects on them, 65.40%, of respondents said yes, it has an impact on them. While, 34.60% said no, that it never had a psychological impact on them

RESEARCH METHODOLOGY

Data Collection

PRIMARY DATA:

- Age group of 14th to above 45 years
- Around 557 respondents for data analysis.
- Data from students Private tuitions, Junior college, Senior college, Post graduate and working professionals.
- Area from Palghar and Dahanu Taluka.
- Structured Questionnaire and Unstructured Questionnaire
- Formal and informal interactions with working professionals

SECONDARY DATA

- Websites on Google.
- International Journals.
- National journals.
- Articles and Newspapers.

OBJECTIVES OF THE STUDY

- To understand the psychological and societal effects of bingeing
- To study whether watching web series has impact on health.

HYPOTHESIS

- Bingeing positively affects on psychologically and socially
- There is relationship between age group and bingeing(web series)

RESULTS AND FINDINGS

- We took around 557 respondents from different age groups females watch more web series than males.
- Age group of 18-25 is more addicted to web series which consist of junior college, graduation and post graduation students.
- Majority respondents believe that they don't get impacted due to watching web series.
- Working professional point of view is they watch web series for knowledge purpose.
- Overall our research study says that Web series are trending more than T.V serials due to short episodes and repetitive family dramas. There positive and negative both effects but age group of 18-25 are more towards web series. There Personal, Academic life is also affecting them.

LIMITATIONS OF THE STUDY

- The study is conducted in the geographical Palghar and Dahanu taluka area only
- Study is taken only for specified age group
- Watching series is different based on their personal thoughts, therefore a definite conclusion cannot be drawn

CONCLUSION

The outcome made it quite evident that web series and internet streaming material had a big influence on individuals. The web series content that is displayed on online platforms attracts young people. Youth have been affected psychosocially by the violent, sexual, and abusive content that is available on OTT platforms. They both concur that they have experienced rage, aggression, anxiety, and depression symptoms. If it becomes unmanageable, it will cause significant psychosocial problems for young people.

17th Avishkar Research Convention 2022-23

Category : Humanities, Languages & Fine Arts

Level : UG

Slot No

LGBTQ: The Rise of Third Gender and Struggle for Societal Acceptance

ABSTRACT

A person's gender identity will be same as or different from their birth. Gender identity is each person's internal and individual choice of gender. The LGBTQ community people faces many problems like they are sexually assaulted, physically attacked and extreme violence when compared to heterosexual peers. Within the LGBTQ community our project exclusively focuses on the TRANSGENDER community. Recently in India Prachi Rathod transgender became a government doctor. Naaz Joshi is India's first transgender International Beauty Queen. The purpose is to find out where transgender community stands in the newly formed Palghar District in the state of Maharashtra.

Methodology

Secondary Data

1. We have gathered some information with the help of research papers available on Google websites.
2. We also referred to some articles regarding LGBTQ of well known newspapers like TOI.

Primary Data

1. We have completed 364 responses on this project survey.
2. Interaction with the Transgender community in Palghar area.

Objectives

- To create safe and inclusive educational/ work environment.
- Make efforts to ensure safe accommodation for LGBTQ community.
- To give them that respect, Dignity, and Equality which is given to heterosexual society.
- Differences adolescence girls and boys on attitude towards lesbian and gay people.

LIMITATIONS OF THE STUDY

- Study was limited to the Palghar Area.
- Study is taken only for specified age group such as 18-25, 25-30, 30-40 & 40 above.
- The main reason behind this is to get equal amount of Employment & Education rights for LGBTQ.
- To make youth understand to support the LGBTQ Organization with positive attitude.
- The reason behind why to made them feel unwelcome at a place of worship.

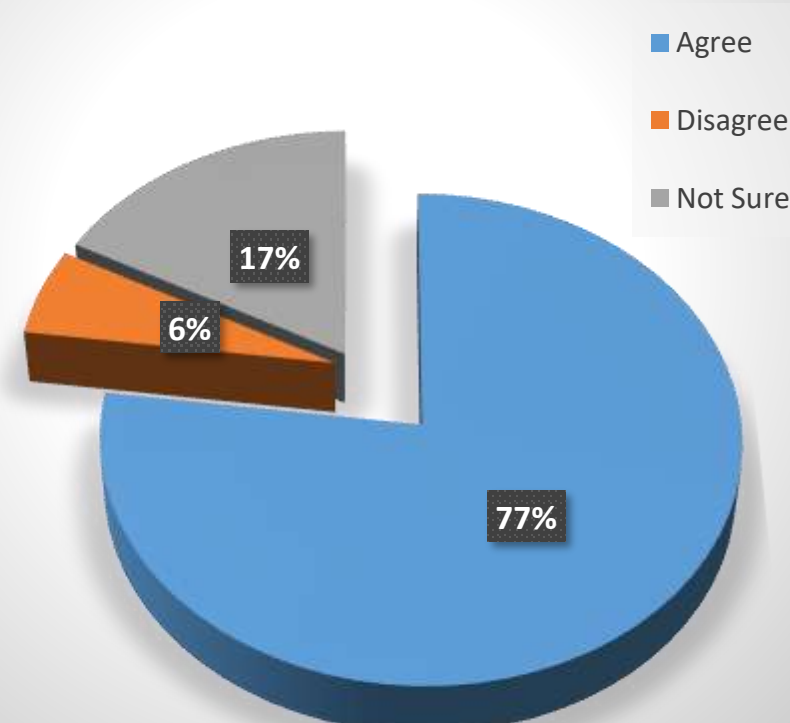
CONCLUSION

- The research basically xends at the conclusion that people are aware and not ashamed of their sexuality.
- Also majority of people agree that LGBTQ community people should get equal rights , opportunities, respect, and dignity.
- The positive responses of people on the question that is there really a need for third gender? shows that people are accepting them and are willing change the stereotypes of there should be only two genders

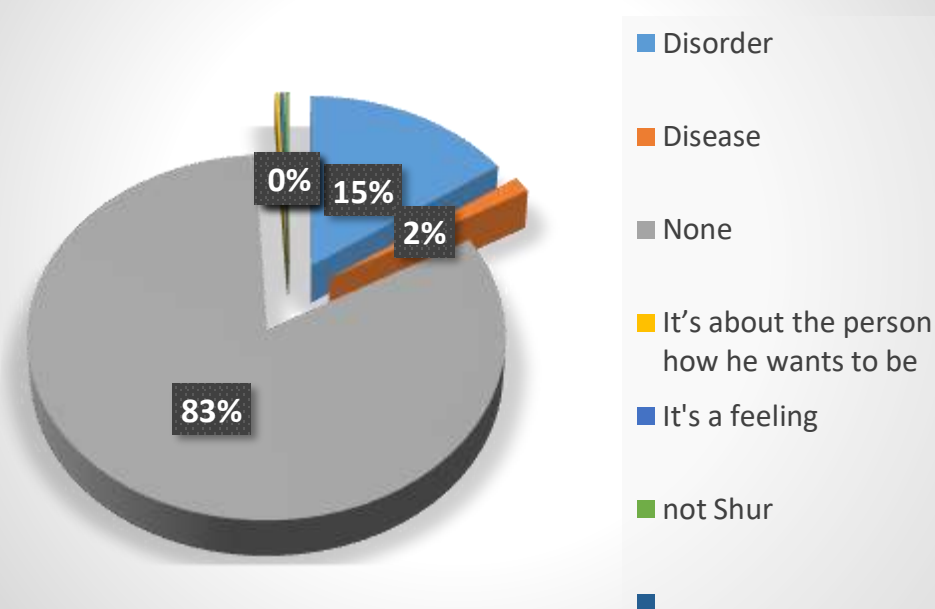
REFERENCE

- <https://www.ncbi.nlm.nih.gov/books/NBK64810/>
- <https://www.bhjustice.org/topics/lgbtq/>
- <https://youtu.be/NFp27WcNvSc>

Do you agree with the decision of court regarding enforcement of Transgender Person's Right Act 2019 ?



Is being LGBTQ a disorder or disease ?



Utilization Of Floral Waste Into Aromatic Amicable Wrist Band

Abstract

Floral waste management is major concern as it accounts 16 % of water pollution. Disposal of flowers in rivers, ponds, etc. lead to water pollution as well as affects the living organisms present in waters. So, the floral waste must to convert into the valuable products like aromatic wrist band from the aromas of the flowers as a waste. This band will act as an aroma therapy and will provide relief by inhaling the fragrance of wrist band. The remaining floral waste material can be used for preparing vermicompost. It is one of the easiest methods to recycle temple flower waste to produce quality compost. This study describes the management of floral waste. This will resolve the problems of disposal floral wastes and ultimately the water pollution will get reduced and when aroma is inhaled the scented molecule in essential oil travels from the olfactory nerves directly to the brain and specially impact the amygdala. Which result into good mental health.

Why Waste Management?

- 1. One of essential aspects of floral waste management is recycling for conservation of natural resources.
- 2. Degradation of floral waste is extremely slow process as compared to kitchen waste.
- 3. During rainy days, the condition get worsen with mosquitoes and flies breeding on floral waste or floral waste may results into breeding ground of diseases.
- 4. Floral waste management reduces the effects of waste on the environment.

Methods

- 1. Collection of flowers from temple waste
- 2. Washing and cleaning
- 3. Segregation or separation
Extraction of essential oil from temple flowers waste by appropriate method.
- 4. Formation of aroma to band
- 5. Packaging of aromatic band

Objectives

- 1. To minimize the environmental pollution specially water pollution .
- 2. To get clean surrounding near temple areas .
- 3. To make valuable and cost effective products .



Applications

- 1. People will get employment
- 2. Acts as Aromatherapy
- 3. Relief from anxiety and depression
- 4. Clean water bodies
- 5. Clean surrounding near temple areas
- 6. Boost feeling of relaxation
- 7. Cutting your waste disposal cost
- 8. Finding new source of revenue

Conclusions

- 1. This research describes the management of floral wastes by conversion into valuable products such as Aromatic Wrist Band .
- 2. The floral wastes can have important applications in Aroma Industries .
- 3. This will resolve the problems of disposal of floral waste and ultimately the water and environmental pollution get reduced.

Before



After



References

- 1. Technology for the utilization of floral waste and corresponding products-Sharmila Rani , Prateek Kumar , Menka Bhasin .
- 2. Management of floral waste by conversion to value added products and their applications-M.S.Waghmare , A.B.Gunjel, N.N.Patil.
- 3. Utilization of floral waste for extraction of valuable products: A close loop approach towards environmental sustainability and waste management- Singh.P , Singh .R , Mishra P.K.

HERBAL AIDS TO SAVE USER AGAINST THE COMMON PATHOGENS

CATEGORY : AGRUCULTURE & ANIMAL HUSBANDARY

SLOT NO. :

LEVEL: 2

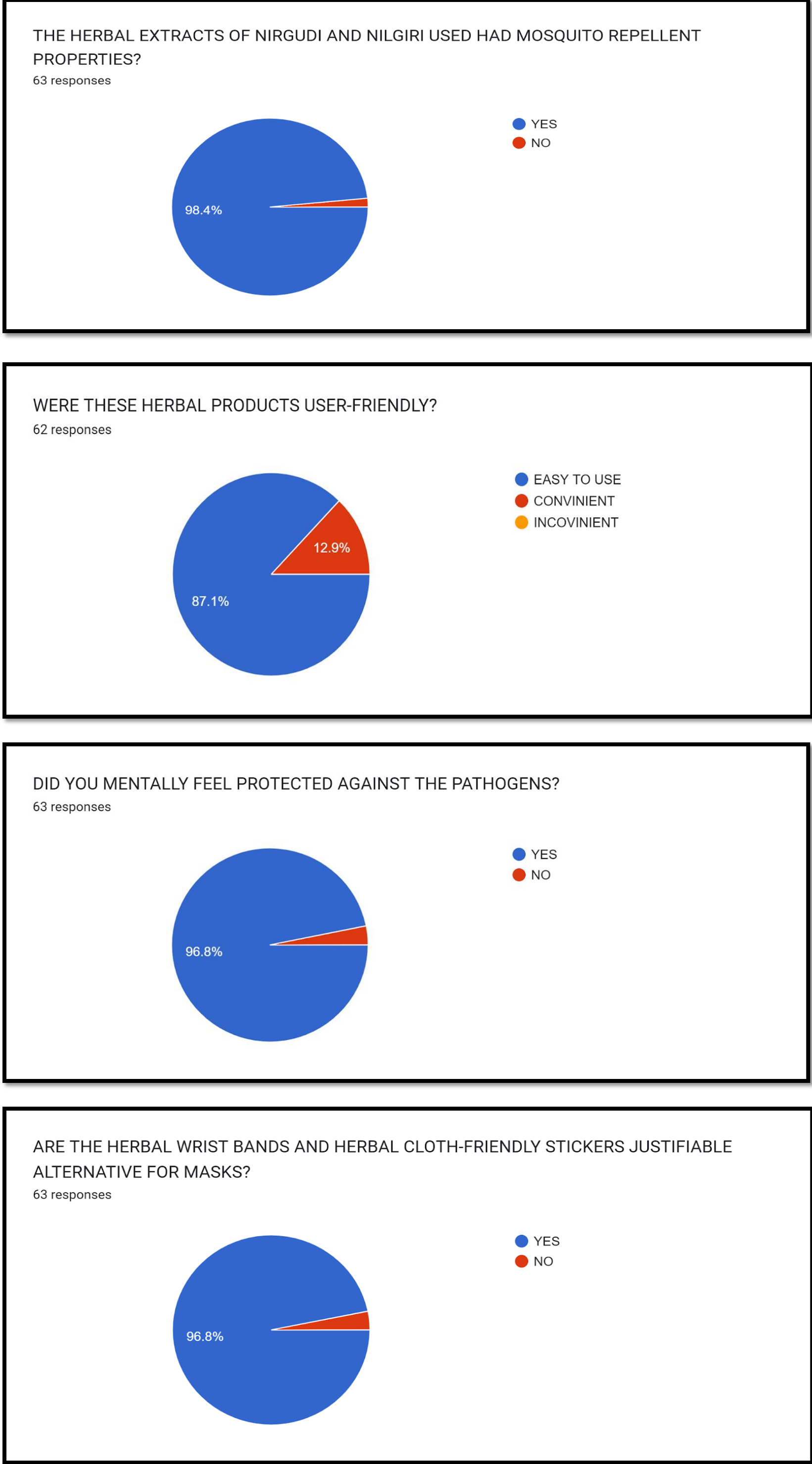
ABSTRACT

Due to increasing micro-organism contamination people are in need of shield against the germs. This research applies use of ethnobotanical studies for making of four herbal products namely Herbal wristbands, Herbal cloth-friendly stickers, Herbal sleeves and Herbal filter pads. These herbal products will save user from the common pathogens present in the environment due to its ayurvedic properties. The ethnobotanical plants used in the research are Vitex negundo and Eucalyptus spp. The extraction procedure is carried out with the help of Soxhlet apparatus and Clevenger apparatus for oil extraction. These herbal aids have aromatic and stress-reliving properties of the herbs. The herbal products are cost effective and biodegradable.

ETHNOBOTANICAL PLANTS USED FOR HERBAL PRODUCTS

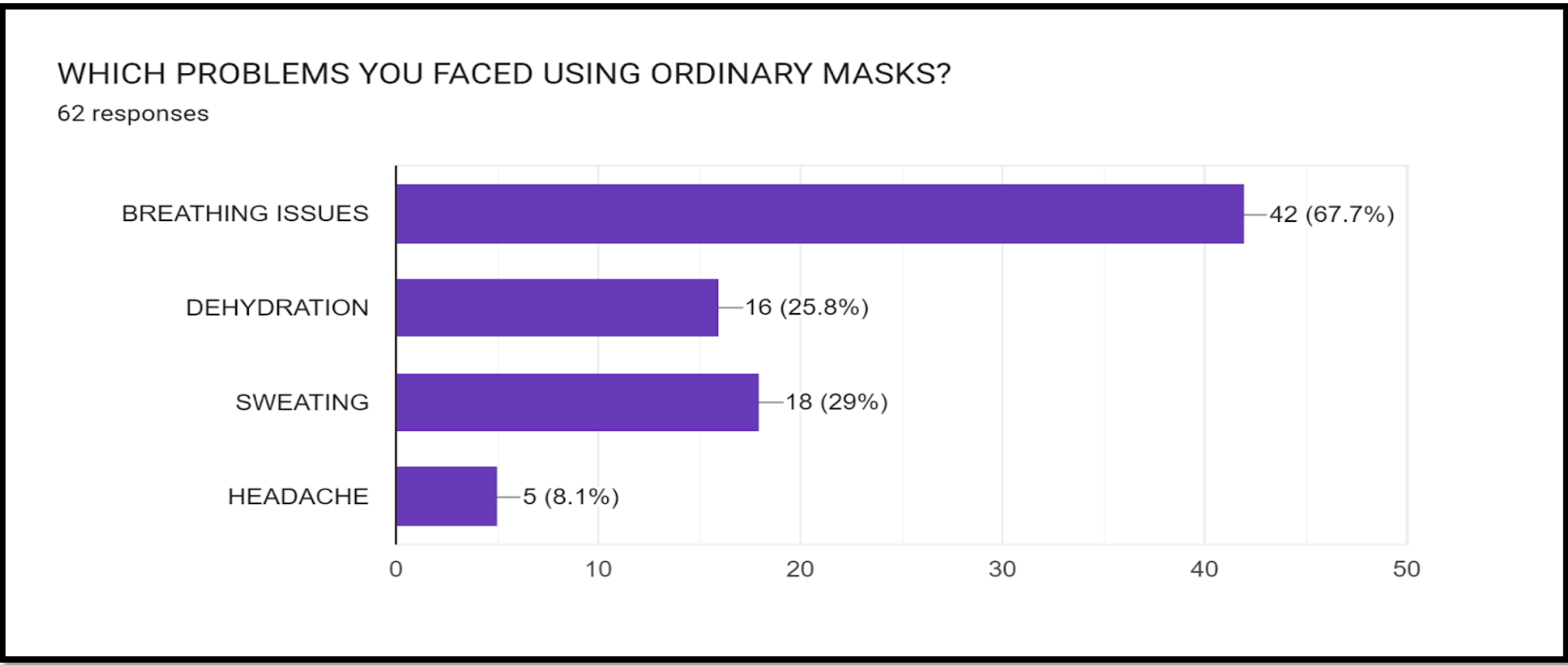
Plant names	Plant part used	Major chemical constituent	Medicinal properties
<i>Vitex negundo</i> 	Extract from dried leaves powder	Terpinenn-4-ol, globulol, β-caryophyllene, α-guaiene, sabinene and linalool	Antiviral, antibacterial, antimicrobial, antioxidants, antimycobacterial and antifungal activities.
<i>Eucalyptus spp.</i> 	Oil from dried leaves powder	Eucalyptol, terpenoids and other phenolic constituents	Antiviral, antibacterial, antifungal, antimicrobial and therapeutic and aromatic effect.

SURVEY



RESEARCH PROBLEM

It is found that people wearing mask , children playing in public parks are facing various problems as mentioned below:



So as to overcome the problems they are facing these herbal products made by using local ethnobotanical plants generally grown by local farmers would help them to a great level

OBJECTIVES

- To make use of ethnobotanical plant extracts on the coating herbal products.
- To protect users against the common pathogens.
- To reduce the stress levels of users.

WHY HERBAL PRODUCTS???

- Save user against the common pathogens.
- Aromatic and stress-reliving properties.
- Cost-effective.
- User-friendly.
- No side-effects.
- Biodegradable.

RESEARCH METHODOLOGY

A. COLLECTION OF PLANT MATERIAL -

- Collection of leaves
- Sun drying
- Conversion into powder form

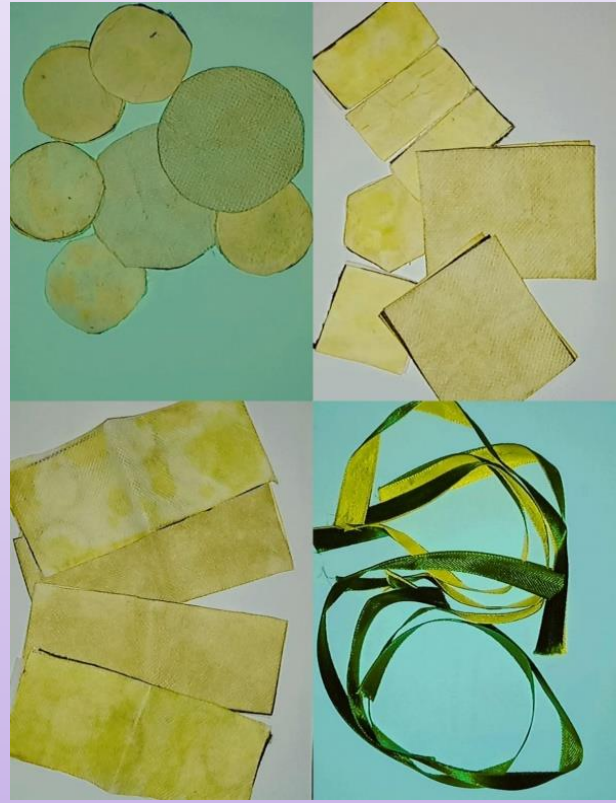
B. EXTRACTION PROCEDURE-

- In case of *Vitex negundo* – Soxhlet apparatus
- In case of *Eucalyptus spp.* – Clevenger apparatus for oil extraction

C. COATING OF HERBAL PRODUCTS-

- Spray technique method
- Herbal product subjected to medicinal properties of herbs

FINAL PRODUCTS



ZONE OF INHIBITION

NUTRIENT MEDIA	BACTERIAL CULTURE	DAIMETER OF ZONE OF INHIBITION (CM)
Nutrient Agar	<i>E. coli</i>	3.1 cm & 2.8 cm
Nutrient Agar	<i>P. aeruginosa</i>	2.1 cm & 2.3 cm
Nutrient Agar	<i>S. aureus</i>	3.2 cm

BENEFITS TO THE SOCIETY



- EMPLOYMENT TO FARMERS GROWING ETHNOBOTANICAL PLANTS
- EMPOWERMENT TO LOCAL BACHAT GATS
- HERBAL EXTRACT ALSO HAS MOSQUITO REPELLENT PROPERTIES
- SOURCE OF INCOME FOR WOMEN SELLING THESE PLANTS
- WILL MAKE YOU FEEL MENTALLY SAFE
- WILL CREATE HYGIENICE CUSTOM IN SOCIETY
- WILL CREATE AWARENESS ABOUT AYURVEDIC PLANTS

COST BENEFIT ANALYSIS

HERBAL PRODUCTS	COST OF PRODUCTS	VALIDITY OF PRODUCTS
HERBAL FILTER PADS	Rs.30	30-45 days
HERBAL SLEEVES	Rs.30	30 days
HERBAL WRIST BANDS	Rs.10	24 hours
HERBAL CLOTH-FRIENDLY STICKERS	Rs.15	24 hours

CONCLUSION

The medicinal properties of herbal extract will save you against the common pathogens. All these herbal aids are user-friendly, stress-reliving and cost effective.

REFERENCES

- Kothandan, Sangeetha, and Rajarajan Swaminathan. “Evaluation of in vitro antiviral activity of Vitex Negundo L., Hyptis suaveolens (L) poit., Asian Pacific Journal of Tropical Disease 4 (2014): S111-S115.
- Cermelli, Claudio, et al. “Effect of eucalyptus essential oil on respiratory bacteria and viruses.” Current microbiology 56.1 (2008): 89-92.

HERBAL AIDS TO SAVE USER AGAINST THE COMMON PATHOGENS

CATEGORY : AGRICULTURE & ANIMAL HUSBANDARY

SLOT NO. :

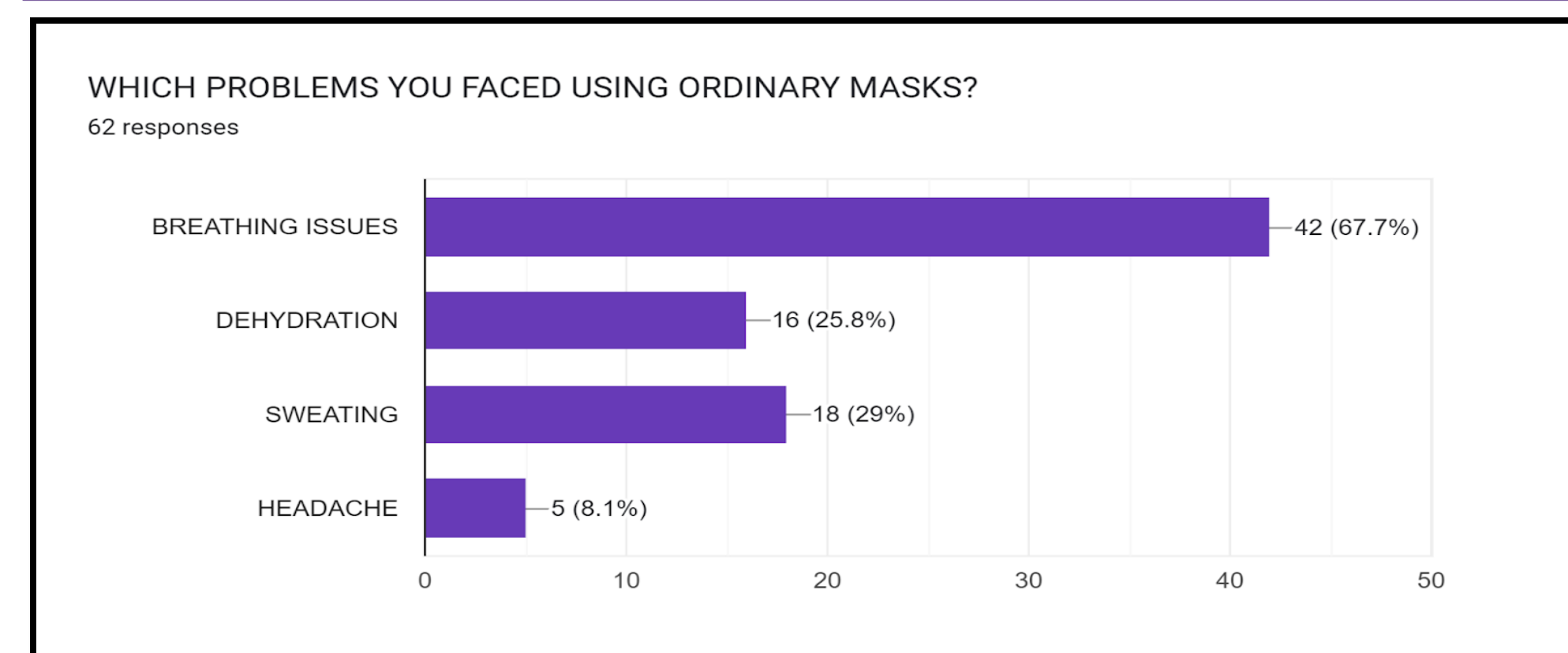
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Due to increasing micro-organism contamination people are in need of shield against the germs. This research applies use of ethnobotanical studies for making of four herbal products namely Herbal wristbands, Herbal cloth-friendly stickers, Herbal sleeves and Herbal filter pads. These herbal products will save user from the common pathogens present in the environment due to its ayurvedic properties. The ethnobotanical plants used in the research are *Vitex negundo* and *Eucalyptus* spp. The extraction procedure is carried out with the help of Soxhlet apparatus and Clevenger apparatus for oil extraction. These herbal aids have aromatic and stress-reliving properties of the herbs. The herbal products are cost effective and biodegradable.

RESEARCH PROBLEM

It is found that people wearing mask, children playing in public parks are facing various problems as found through survey:



So as to overcome the problems they are facing these herbal products made by using local ethnobotanical plants generally grown by local farmers would help them to a great level

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C. COATING OF HERBAL PRODUCTS-

- Spray technique method
- Herbal product subjected to medicinal properties of herbs

FINAL PRODUCTS



ANTIMICROBIAL ACTIVITY : ZONE OF INHIBITION

NUTRIENT MEDIA	BACTERIAL CULTURE	ZONE OF INHIBITION (CM)
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BENEFITS TO THE SOCIETY



EMPLOYMENT TO FARMERS GROWING ETHNOBOTANICAL PLANTS

EMPOWERMENT TO LOCAL BACHAT GATS

HERBAL EXTRACT ALSO HAS MOSQUITO REPELLENT PROPERTIES

SOURCE OF INCOME FOR WOMEN SELLING THESE PLANTS

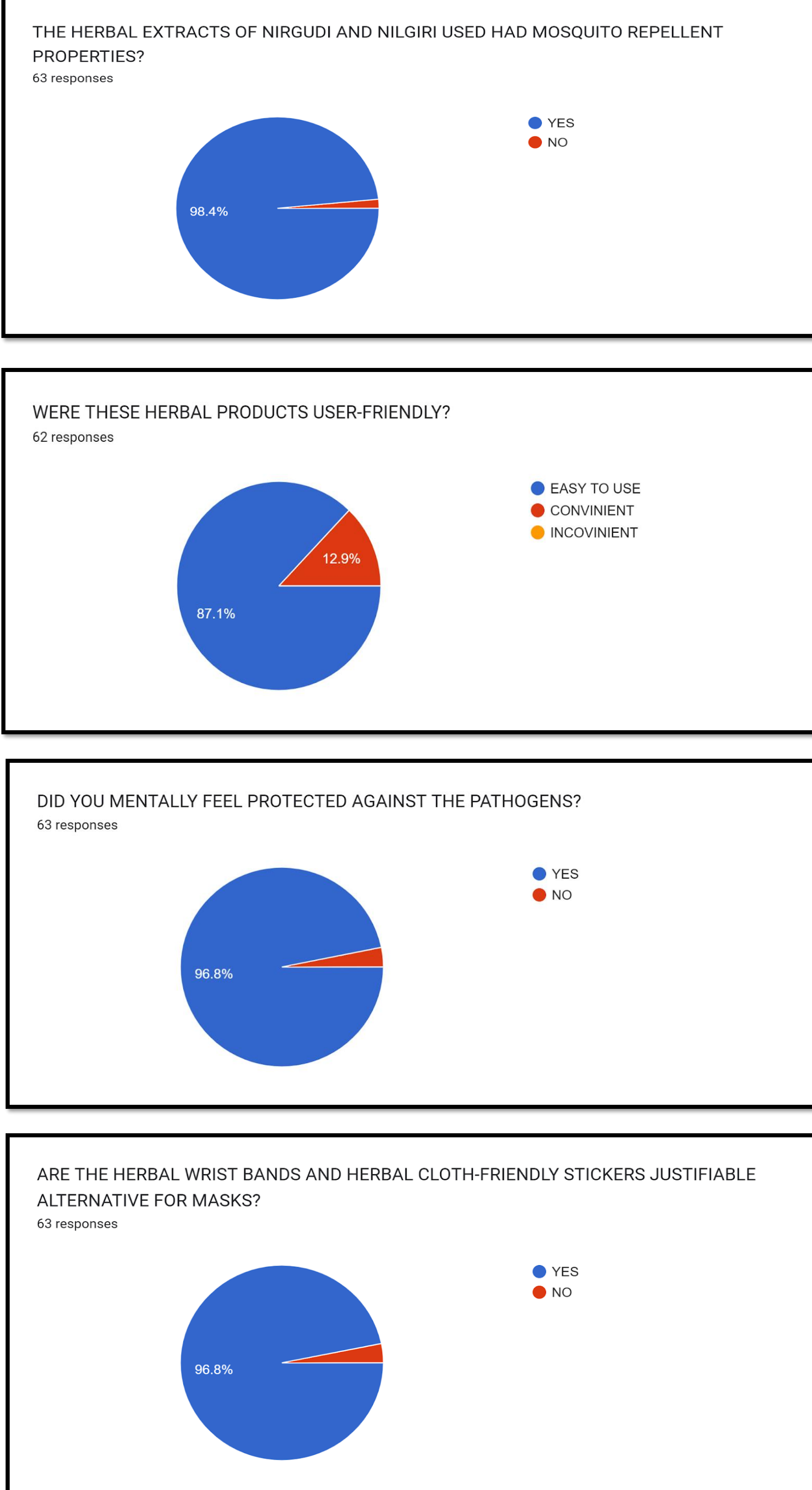
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WILL CREATE HYGIENICE CUSTOM IN SOCIETY

WILL CREATE AWARENESS ABOUT AYURVEDIC PLANTS



SURVEY



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HERBAL AIDS TO SAVE USER AGAINST THE COMMON PATHOGENS

CATEGORY : AGRICULTURE & ANIMAL HUSBANDARY

SLOT NO. :

LEVEL: 2

ABSTRACT

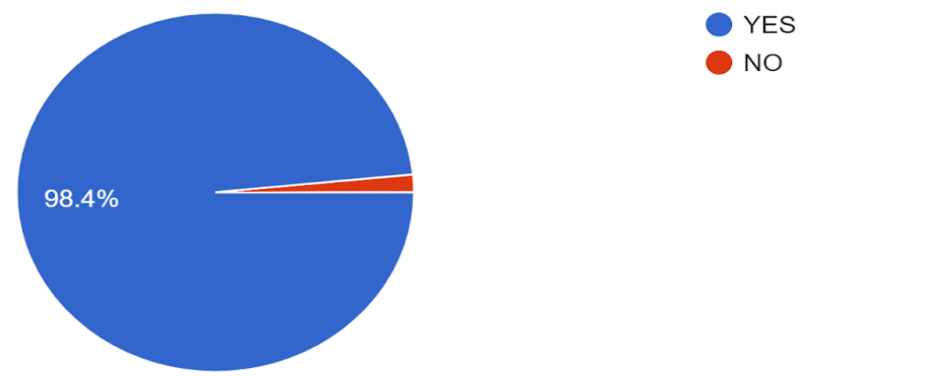
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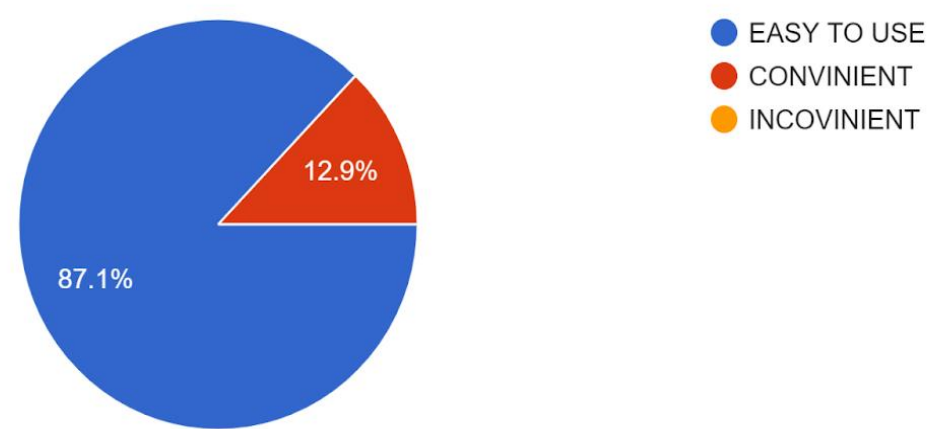
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SURVEY

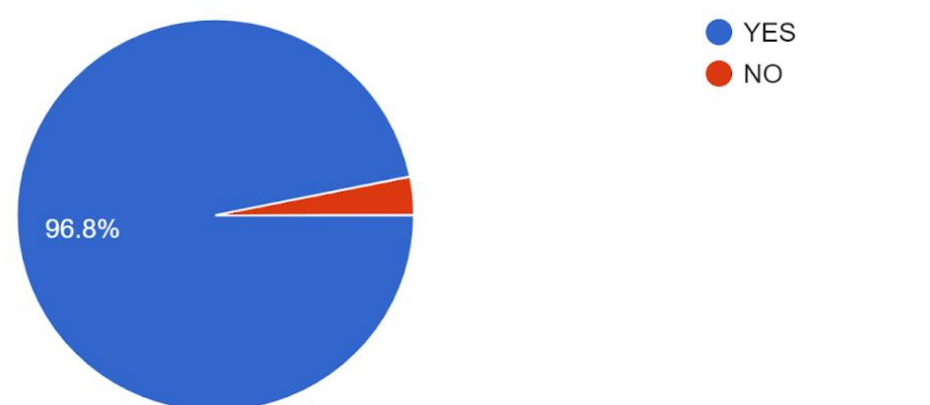
THE HERBAL EXTRACTS OF NIRGUDI AND NILGIRI USED HAD MOSQUITO REPELLENT PROPERTIES?
63 responses



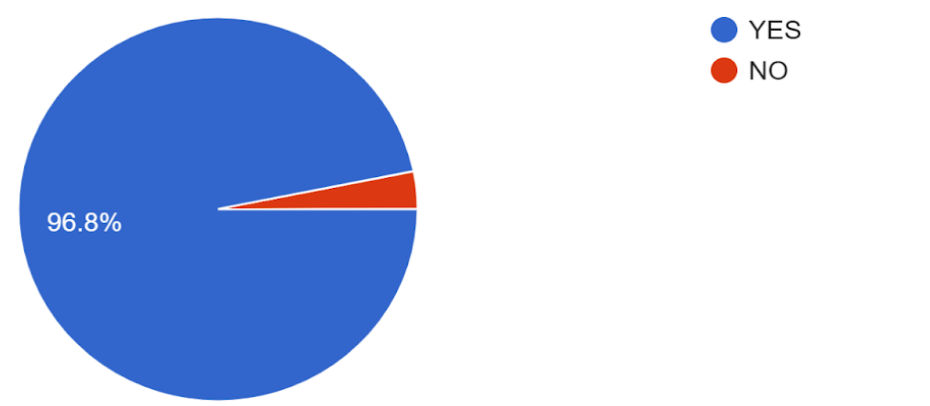
WERE THESE HERBAL PRODUCTS USER-FRIENDLY?
62 responses



DID YOU MENTALLY FEEL PROTECTED AGAINST THE PATHOGENS?
63 responses



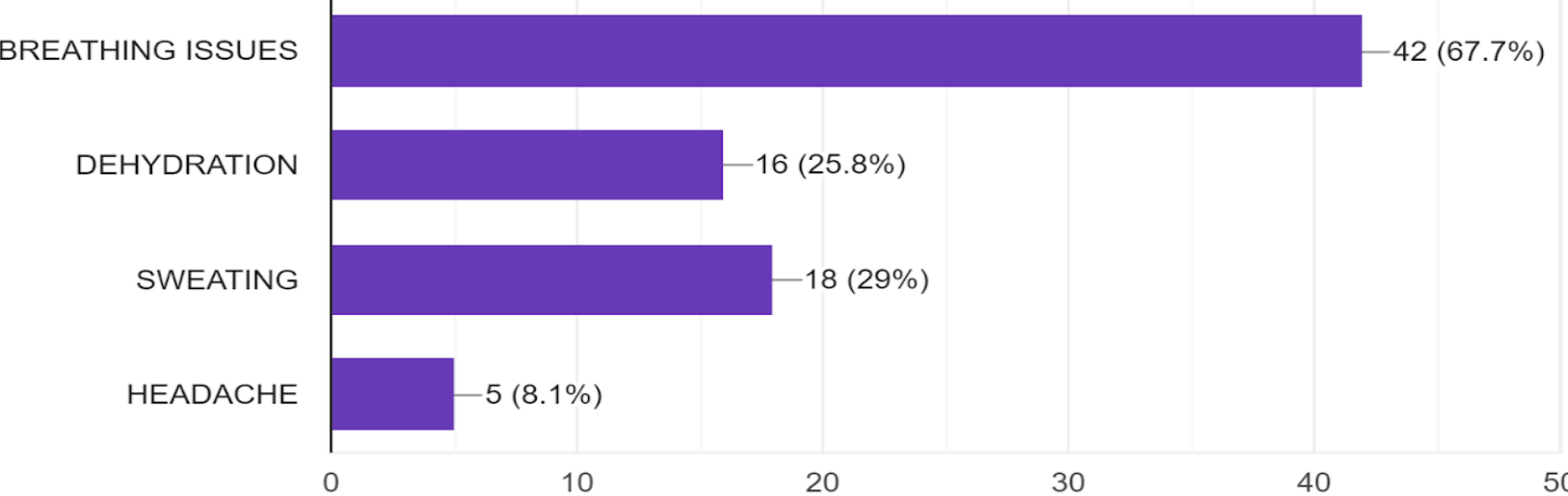
ARE THE HERBAL WRIST BANDS AND HERBAL CLOTH-FRIENDLY STICKERS JUSTIFIABLE ALTERNATIVE FOR MASKS?
63 responses



RESEARCH PROBLEM

It is found that people wearing mask , children playing in public parks are facing various problems as mentioned below:

WHICH PROBLEMS YOU FACED USING ORDINARY MASKS?
62 responses



So as to overcome the problems they are facing these herbal products made by using local ethnobotanical plants generally grown by local farmers would help them to a great level

OBJECTIVES

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- User-friendly.
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• Collection of leaves
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• Conversion into powder form

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FINAL PRODUCTS



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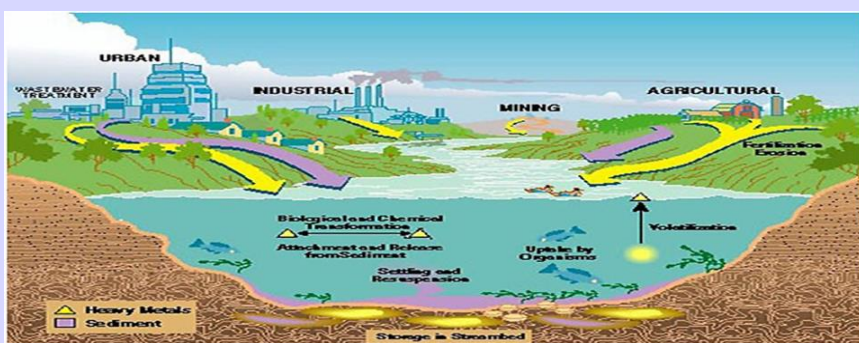
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- Cermelli, Claudio, et al. "Effect of eucalyptus essential oil on respiratory bacteria and viruses." Current microbiology 56.1 (2008): 89-92.

Nanoparticle Based Biofilter Using Carbonized Coconut Husk For Effluent Water Treatment

Abstract:- Exponential growth in industrialization increases pollution in the environment. Nowadays, Due to the release of effluent waste water directly into the environment, which can cause severe problems for humans and aquatic ecosystems. Hence, there is need for the removal of toxic heavy metals and dye from effluent wastewater releasing into open waterbodies. Activated carbon based filters are commonly used for removal of heavy metals. Activated carbon remains an expensive material, and therefore the need for safe and economical methods of eliminating heavy metals from natural sources has prompted research interest in the production of low-cost alternatives to commercially available activated carbon. So present study we are making activated charcoal material from the coconut husk as a natural absorbent which will be used as a nanomaterial for the biofilter

Research problem

1. Industrial effluents released into open water sources causes harm to aquatic and terrestrial animals.
2. Activated carbon nanoparticle are expensive



Objective

1. To synthesize nanoparticles from Carbonized Coconut Husk.
2. To synthesize membrane from CCH nanoparticles.
3. To characterize nanoparticles (SEM/TEM) and testing for efficiency (UPLC/XRD).

Why carbonized coconut husk???

1. Higher adsorption
2. Inexpensive
3. Easily available
4. Easy to maintain
5. Remove odour
6. Antibacterial property



Benefits to society

1. Filters microbial air contamination
2. Prevent toxic chemicals reach into water bodies
3. simultaneous concentration and partial (monovalent ion) demineralization of dairy products.
4. Used for removal of dyes released by textile industry



Methodology



Characterization of CCH Nanoparticle by SEM analysis

CCH Nanoparticles added with solvent and then spread to form membrane

Testing for efficiency (UPLC/HPLC) of membrane using artificially made effluent water

Expected result/ Outcomes

1. Formation of Nanosize particle of Carbonized coconut husk,
2. Heavy metal adsorption capacity in range 75-90%.

Future aspect

1. Can be used for removal of heavy metal from effluent water.
2. Can be used for water purification.

Reference

1. Journal of water reuse and desalination volume 2017 7 (4) : 387-419
2. Journal of surface science and technology 2006 22(3)
3. Interdisciplinary environment review 18(2) : 124-149

Demystifying Women Shopping Behaviour Pre and Post Covid 19 in Palghar



Objectives	Problem Statement
- To study women shopping behavior pre and post covid - To find out factors motivating shopping behavior and ultimate buying decision - To study the marketing strategies of companies to keep women as a crucial consumer - To find out a different perspective on payment methods - To understand futuristic trends in retail channels	Pandemic created newer roadblocks for both online and physical channels. Owing to pandemic it might have resulted in demand derailment in physical channels which in turn will impact retailers . This paper aims to understand the women shopping behavior pre and post covid
Research Methodology	Analysis and Findings
The primary data for the existing research has been gathered via questionnaire form for record collection. The secondary data had been accumulated from numerous reports, web sites, books, and magazines, Newspapers, SSRN, and Research Papers. The respondents are from Palghar District, Maharashtra. The researcher has adopted the Convenient Sampling Method. Approximately 500 respondents were contacted to fill out the survey questionnaire.	21 % of the respondents feel unsafe while shopping online thereby creating space for retailers to work on consumer safety perception - Cash on delivery is a preferred mode of payment for 68 % of the respondents followed by UPI (15%). Net banking is the least preferred mode of payment (3%) 73% of the respondents agree they tend to shop online more than physically during Covid 65 % of the respondents agree online shopping is more comfortable than online - Food & Beverages is the most purchased product during Covid (30 %) followed by fashion (28%) and medicines (14%) . 60 % of the respondents agreed covid increased their online shopping and 15% of the respondents shopped online for the first time 57 % of the respondents tend to prefer to shop on mobile application followed by website on mobile (24%) indicating mobile commerce is the new era in ecommerce 42% of the respondents prefer Amazon for their online shopping followed by Flipkart (22%) and Meesho (20 %) - Two major factors enabling consumers to know about online website are social media (34 %) and word of mouth (18 %) - The top 3 parameters for selecting a particular online website are quality (22 %), price (18%) and service (16%)
Conclusion	
To sum up Covid 19 has had a huge influence on women's shopping behavior. Women buyers owing to their financial freedom will continue to buy online even post pandemic. Amazon will emerge as a market leader in Ecommerce industry specially in Palghar District. Social media and word of mouth will drive online website traffic. Consumerism is here to stay as online shopping gets the much-needed growth due to the ease of cash on delivery and UPI payments. There is no substitute for traditional parameters such as quality, price and overall service in shaping consumer buying journey. Mobile commerce will be a major factor driving online ecommerce due to digitization and easy access. Growing number of companies can invest in mobile application to ease shopping experience as youngster prefer mobile commerce. The only research question to be studied ahead is the safety of online transactions which the retailers must incorporate in their business model.	

POST COVID CHILDHOOD OBESITY AND RELATED HEALTH PROBLEMS IN PALGHAR.**ABSTRACT**

Covid-19 had its impact on human beings all over the globe. Many countries-imposed lockdown to break the chain of pandemic. Almost for two years mankind was under the threat of the same. This led to altered lifestyle of human beings. In India schools adapted online teaching methods which led to further consequences like obesity, diabetes, impaired vision, etc. The current study emphasized on the same consequences developed due to lockdown in school going children in Palghar. The study involves survey of 7 schools in rural and urban part of the Palghar. The data is collected, analysed and is related to the changed lifestyle of the students. The following observations are made where more obesity is observed in urban part schools. Maximum obesity is observed in Anand Ashram school i.e., 25.6% whereas lowest obesity is observed in Zilla Parishad school (Tembhode) Palghar i.e., 5.7%. The rate of obesity is more in females as compared to males (i.e., 60F/44M) which could have adverse effect on their reproductive health which could led to health issues like PCOS, etc. Also, about 8% of students got spectacles after covid-19. Increase in Body Mass Index (BMI) is correlated with the lifestyle of the students. For students' wellbeing interactive sessions had been arranged with principal, students and parents to make them aware of the fundamentals of healthy life style. Post Session follow up will be taken to determine the efficacy of the counselling.

KEYWORDS – Childhood obesity, pandemic, diabetes, COVID-19, cardiovascular disease.

INTRODUCTION

- 1] The Covid-19 pandemic has changed children's eating and physical activity behaviors.
- 2] The rate of childhood Obesity has been rapidly increasing in developed as well as low middle-income countries after the pandemic.
- 3] Obesity is associated with a range of comorbidities including Diabetes, Cardiovascular Diseases, obstructive sleep apnoea and Cancer.

OBJECTIVE

- I] To study post Covid changed lifestyle of school going children.
- II] To calculate BMI.
- III] To establish relationship between changed lifestyle and obesity in rural and urban part of Palghar, Maharashtra.
- IV] To suggest them healthy lifestyle.

METHODOLOGY**QUESTIONNAIRE – to students between 10-17 years.****SURVEY METHOD**

- COLLECTION OF DATA
- ANALYSIS OF DATA
- INTERPRETATION OF DATA

INTERACTIONS

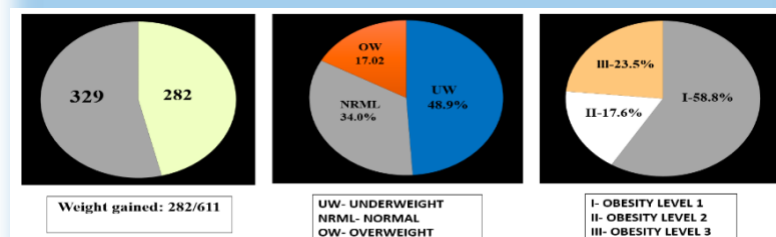
- PRINCIPALS
- TEACHERS
- STUDENTS

RATIONALE

Current study will emphasize on the onset of obesity in school going children after the end of COVID-19 pandemic.

This study will help to find out the impact of lockdown and online learning on mental and physical health of the school going students.

It will make aware the schools, children and parents that the whole generation is at risk of diabetes and associated diseases.

RESULT AND DISCUSSION**More weight gain was observed in 12-3 age group.**

CATEGORY	RESULTS
HIGHEST BMI	42.35
LOWEST BMI	9.06
OVERALL OBESE RATIO	4:3
SPECTACLES AFTER COVID-19	51
TOTAL WEIGHT GAIN	282/611

CONCLUSION

1] Physical inactivity & unhealthy diets and increased screen time are major contributors of increased Body Mass Index (BMI).

2] It is observed in the students belonging to schools in Urban area from strong economical background, suggesting lack of physical activity. Aggression in the students is reported. Lack of Communication Skills are noted by teachers.

3] Pandemic has hampered social behaviour of children. Increased obesity and psychological issues could affect the entire generation to overcome these following suggestions are made with frequent assessment in the same school on same Children.

SUGGESTION

suggestions are given in three categories as mentioned below

School authorities	1. Schools are requested not to send homework on mobiles. 2. No junk food should be allowed in lunch box. 3. Frequent height and weight checkup should be carried out.
Parents	1. Protein rich diet. 2. Communication should be done at the most. 3. Limiting screen time for children. 4. Fix daily routine should be scheduled. 5. Junk food should be avoided.
Students	1. More outdoor games. 2. Sleep early at night & wake up early in morning. 3. Indulge yourself in stretching or exercising.

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- 2] Sarah Cuschieri & Stephan Grech 06 November 2020 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7657263/>
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- 4] C. Pone N. Mavs 1995 <https://www.bmi.com/content/311/6996/42> short

Anti-microbial Activity of Natural Deep Eutectic Solvent (DES) of Eugenol & Cetrimide

Abstract

Deep Eutectic Solvents (DES) which is a green solvent discovered by Abbott, et.al. 2001 [1] has emerged as an alternative for harmful & costly Ionic liquids and organic solvents. It is the mixture of Hydrogen Bond Acceptor (HBA) and Hydrogen Bond Donor (HBD) in definite molar ratio. They are bio-degradable, eco-friendly and cost effective. DES are extensively used in organic reactions, micro extraction techniques and metal processing methods [3]. Limited research work has been done on medical applications of DES. Although, some research papers are available on anti-microbial, cytotoxic properties of DES [4]. Our study is based on DES prepared from Cetrimide which acts as HBA and Eugenol (extracted from clove oil) as HBD. They are mixed together in definite Molar ratio to form DES. It is a hydrophobic DES. Their physical properties such as density, boiling point, etc. are determined. Anti-microbial activity is to be studied.

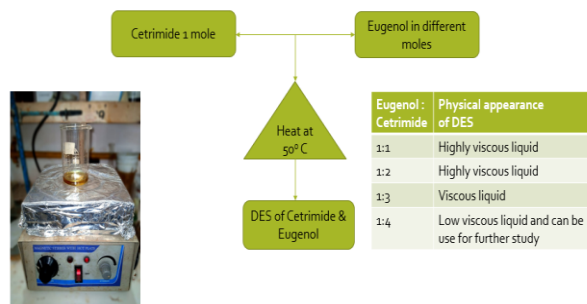
Introduction

- Types of Solvents: Polar solvent, Non-polar solvent, Ionic liquids, Deep Eutectic Solvents
- **Deep Eutectic Solvent (DES)** have been recognized as cost effective alternative to ionic liquid.
- **DES** can prepared easily in high purity by mixing two solids or one solid & one liquid or two liquids and using low cost.
- They are non-toxic and biodegradable.

Research Problem

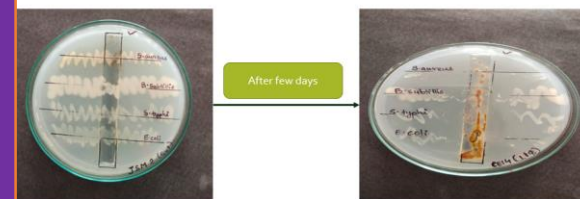
- Therapeutic uses of DES are unexplored or yet to be explored.
- They might show potent anti-microbial, anti-bacterial activity.
- They are easy to prepare hence cost of manufacturing is also low.

Preparation of DES



S N	Properties	Result
1	Boiling Point of DES	180°C
2	Boiling Point of Eugenol	254 °C
3	Metling Point of Cetrimide	248 °C
4	Density	1.060 g/cm ³
5	Freezing point	-1 °C
6	IR Spectra of DES	Characteristic –OH pick missing

Anti-microbial activity



Conclusion

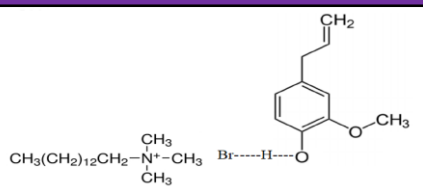
- Desired DES is prepared by mixing and heating molar quantities of Eugenol and one of the component of Cetrimide, which is confirmed by physical properties and IR spectra.
- Desired DES showed potent anti-microbial activity.
- DES is green material hence there is no harm to environment.

Objective

- Thorough Literature survey to find out medicinal uses of components of DES.
- To prepare Deep Eutectic Solvents using Eugenol and Cetrimide.
- Confirm the hydrogen bond formation between eugenol and components of Cetrimide using IR spectra.
- To find out physical properties of prepared DES.
- To study the anti-microbial properties of prepared DES.
- To check its potential use in anti-septic creams.

References

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Piezo Electric Harvesting : Towards Green Energy



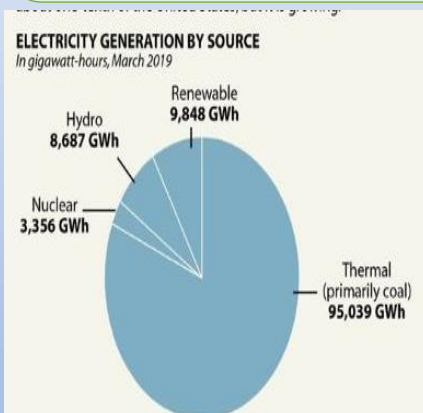
Abstract

1. Conventional sources of energy creating harm to environment and ecosystem
2. Need to find alternative sources to produce energy which is eco-friendly
3. Adopting green sources of energy



Research Problems

1. Declining environment fossils and environment can be conserved with the piezo electric harvesting and other green energy sources.
2. On the stairs , thousands of people generate vibration on the stairs, which is very considerable, stairs-steps vibration can be used to create electrical energy.
3. How to collect vibration energy, turning it into the energy available for people to use is the problem that need to be solved .



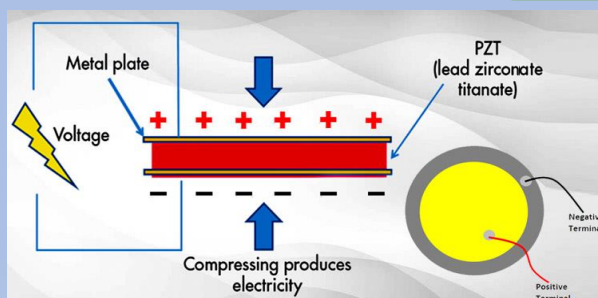
Objectives

- 1) Declining environment fossils and environment can be conserved with the piezo electric harvesting and other green energy sources.
- 2) Piezoelectric energy harvesting technology utilize the characteristic of electromechanical coupling of piezoelectric materials, directly convert mechanical energy to electrical energy.

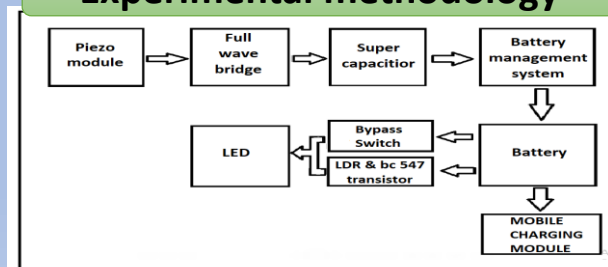
Why ??

Piezo Electric Harvesting

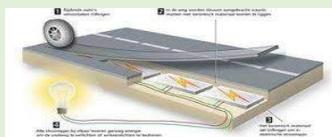
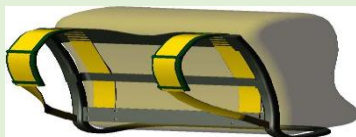
- No pollution
- No involvement of fossil fuel
- Green source of energy
- Energy saving



Experimental methodology



Applications



Conclusions

1. Piezoelectric energy harvesting is a very convenient mechanism for capturing ambient mechanical energy and converting it into electric power.
2. It does not require a separate voltage source, magnetic field, or contact with another material as in the case of electrostatic, electromagnetic, and triboelectric energy harvesting, respectively .
3. They are not affected by environmental factors such as humidity

References

1. Literature Review of Piezoelectric Sensor for Energy Applications. [4] Mohamad, Syahrul
2. A Review of Piezoelectric Energy Harvesting Based on Vibration international journal of precision engineering and manufacturing vol. 12, no. 6, pp. 1129-1141

17th Inter-Collegiate Aavishkar Research Convention 2022-23

Category: Pure Sciences

Slot No:

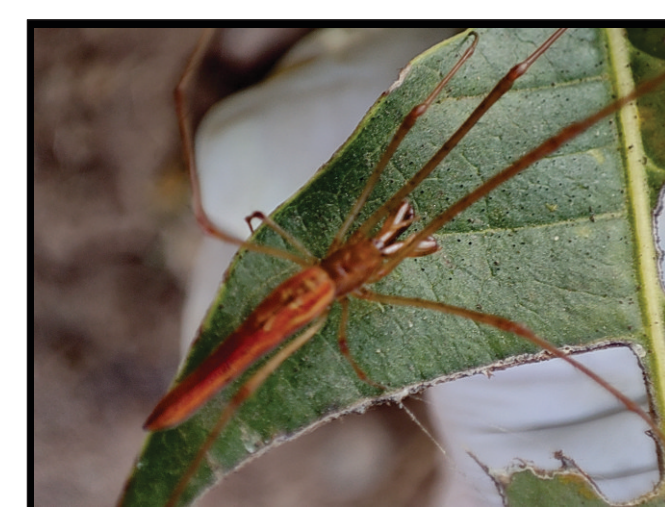
Level : PG



Trithemis arteriosa



Xystrocera globosa



Tetragnatha sp.



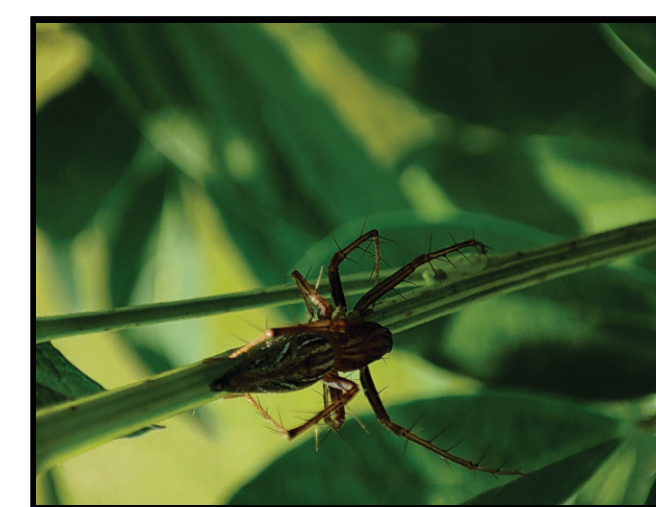
Onychargia atrocyana



Coptosoma xanthogramma



Spoladea recurvalis



Oxyopes quadrifasciatus



Neptis hylas



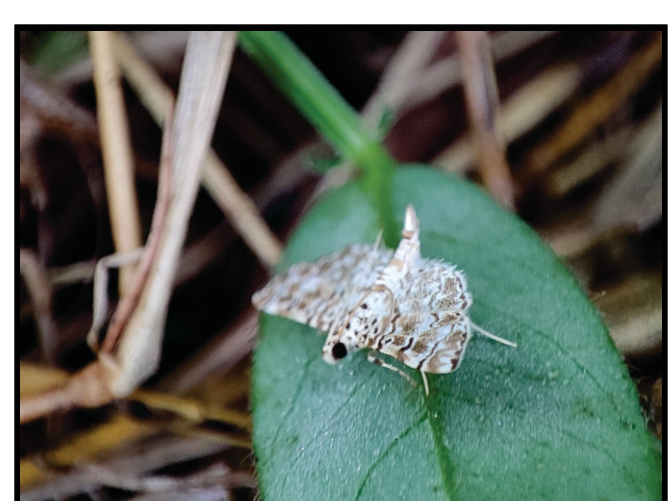
Ceriagrion coromandelianum



Propylea quatuordecimpunctata



Trilophidia sp.



Elophila nymphaeata



Castalius rosimon



Pegomya hyoscyami



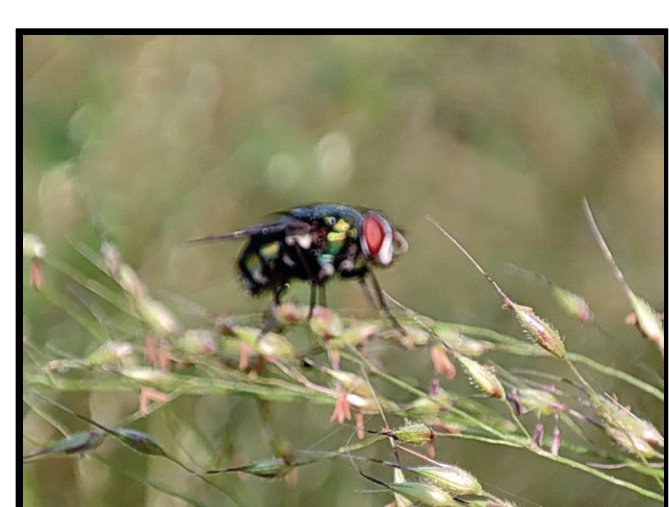
Tipula maxima



Philoscia muscorum



Melanostoma millineum



Chrysomya albiceps



Euchrysops cnejus



Diplacodes trivialis



Promachus vertebratus



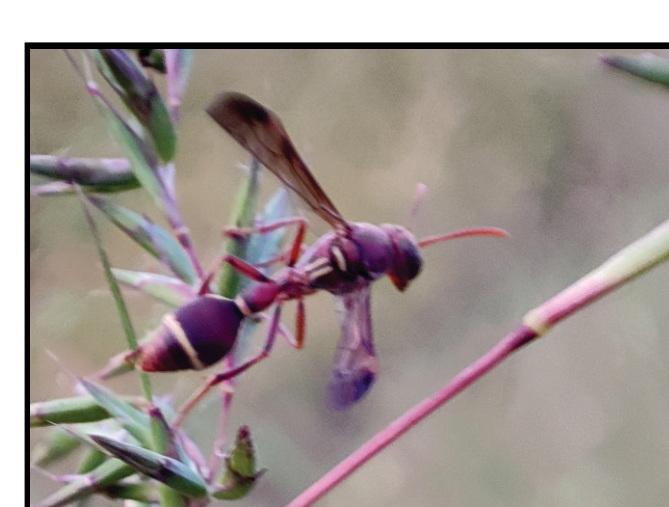
Altica oleracea



Arctosa sp.



Ischnura aurora



Delta pyriforme



Stenoderma sp.

Study on diversity of Insects in Apti(Khurd) Village of Vikramgad Tehsil, Palghar.

Abstract...

The field survey was conducted at Apti (Khurd) village located in Vikramgad Tehsil of Palghar District. Insect's sampling was done per week from Mid of September to Mid of November, 2022. A total of 73 species of insects were sampled which belong to 13 Orders under 39 Families. Sampled insects were distributed on basis of order wise distribution, family wise distribution, zone wise distribution and habitat wise distribution. Order Lepidoptera (Butterflies & Moths) was dominant of all followed by Odonta (Dragonflies & Damflies). This attempt will be useful to make aware the authorities specially town planners about rich heritage of this area and to plan scientifically and sustainably. Fast growing Industrial zone and other human anthropogenic activities can badly affect insect diversity and ultimately environment.

Introduction...

1. 3/4th of the estimated global Species(5100 million) are insects (Hammond,1992).
2. India is among the 12 megadiversity hotspots and have 60,000 insect species (Gadgil,1996).
3. Palghar have wide range of habitats (R.B.Singh,2016).
4. Insects are important part of food chain (Michael,2022).
5. Current study was designed for the very first time to document diversity of insects in Vikramgad Tehsil.

Objectives...

1. To study the composition of insect's fauna at species level
2. To study the insect's habitat types.
3. To determine the diversity and the distribution of insects in different habitats.
4. To study how biotic & abiotic components integrate with each other.

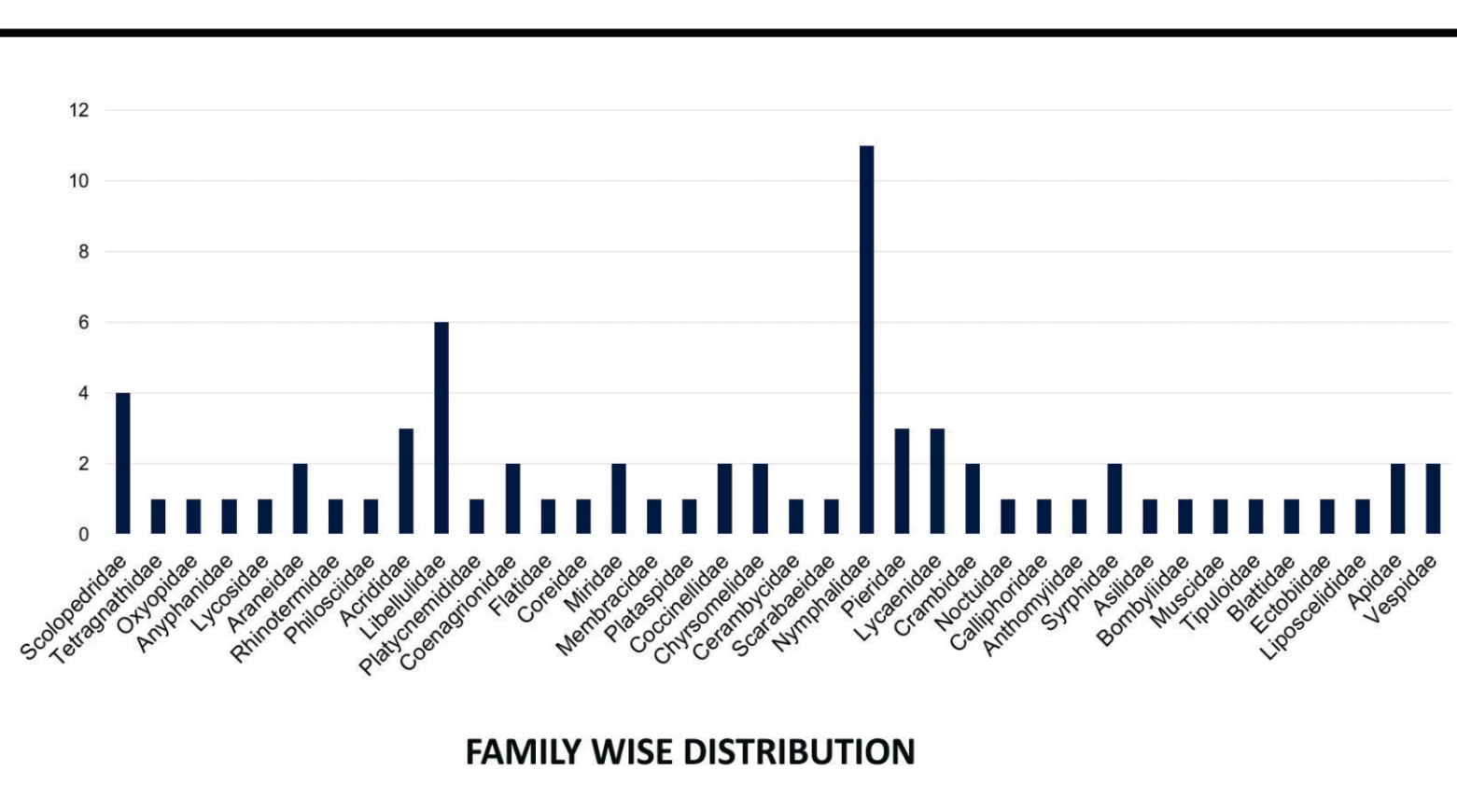
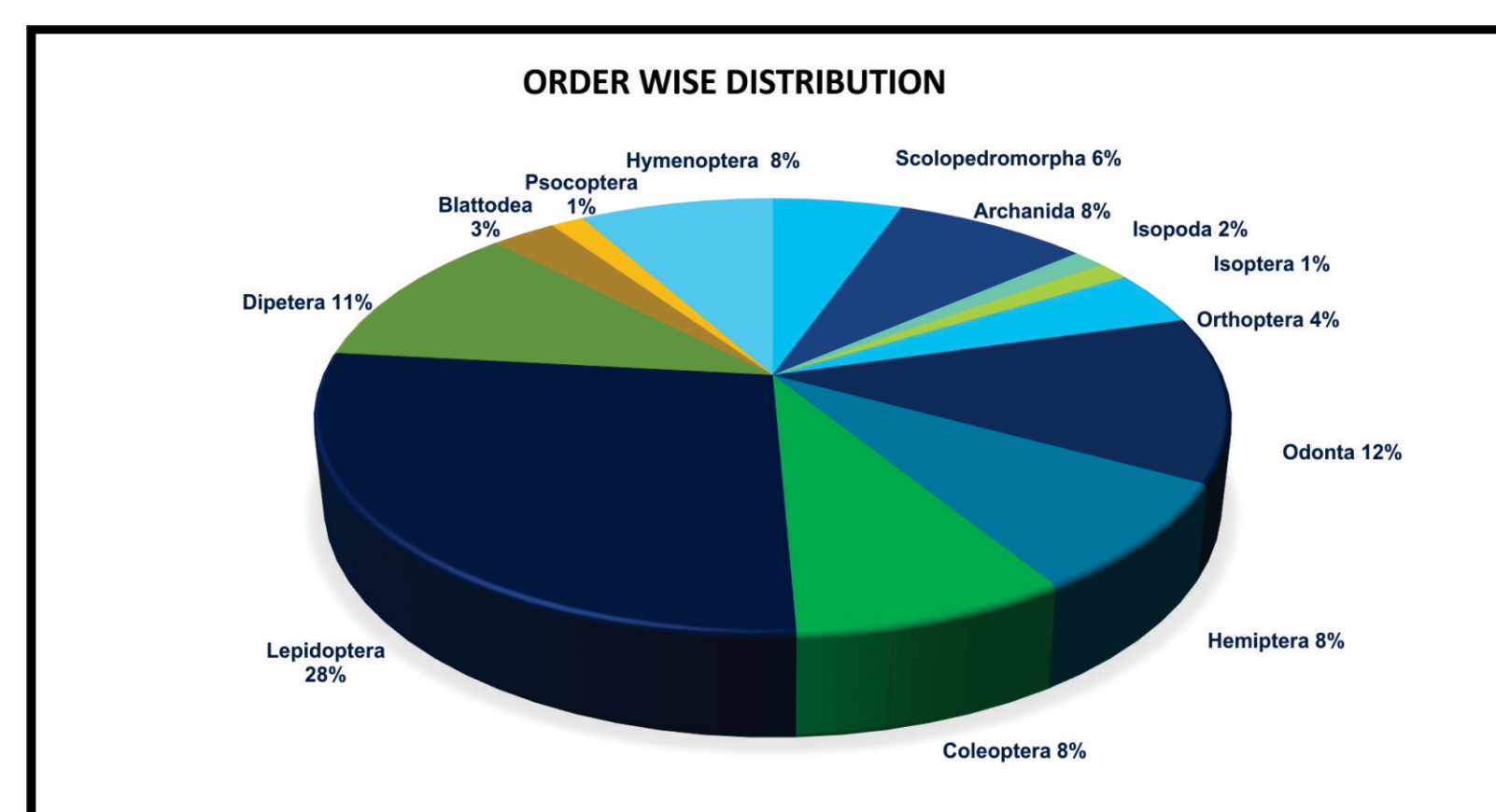
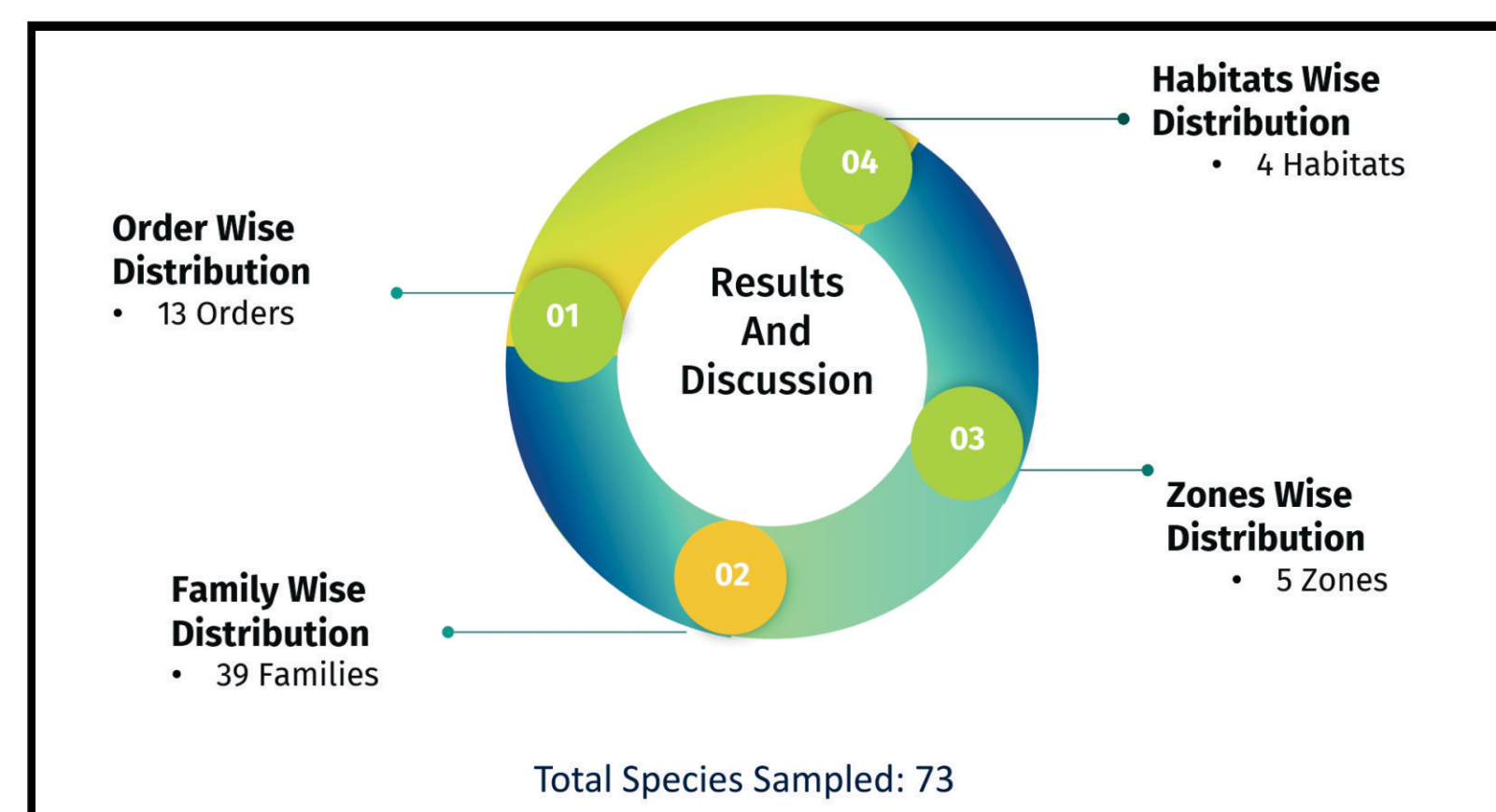
Study Area...



Longitude : 73° 4' 37.3836" E



Latitude : 19° 41' 8.7072" N



Biorise-A perfect Agri-solution !!

PROBLEM

Effect of Air pollution on photosynthetic pigment

ABSTRACT

The exhaust of industries, automobiles cause air pollutions. Examples:- oxides of nitrogen, sulphur, particulate emissions. These air pollutants drastically affect photosynthetic pigments and reduce chlorophyll contents. The reduction in chlorophyll is due to conversion of chlorophyll into pheophytin by loss of magnesium ions. In the present study formulation of biofertilizer has been done by finding out nitrogen fixation bacteria, phosphate solubilizer bacteria and addition of new carrier mixture. Biofertilizers overcome the effects of air pollution on plants and enhance the chlorophyll contents of plants collected from polluted sites. This biofertilizer has great potential to replace chemical fertilizers.

MATERIAL AND METHOD

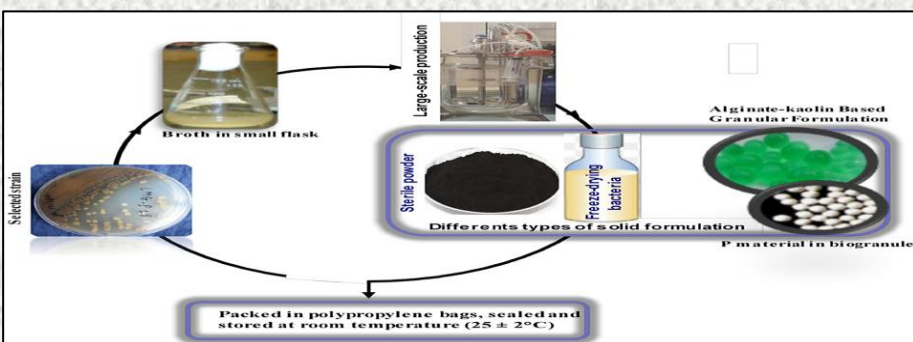
Carrier Extraction

Harvesting of *Spirodelia polyrhiza*

Separation and cleaning with water
Sunlight drying for 5-7 days

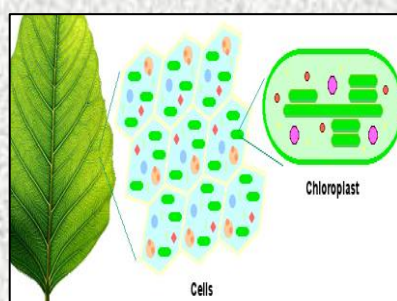
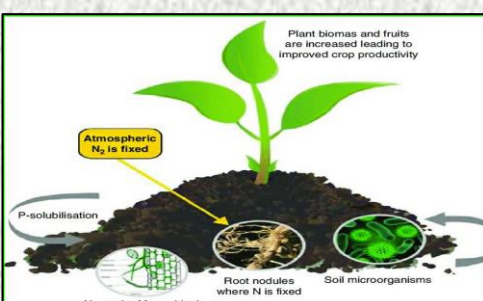
Grinding in small particles, separate large particle

Sterilization at 121 degree Celsius 15 psi
Use this as carrier molecule



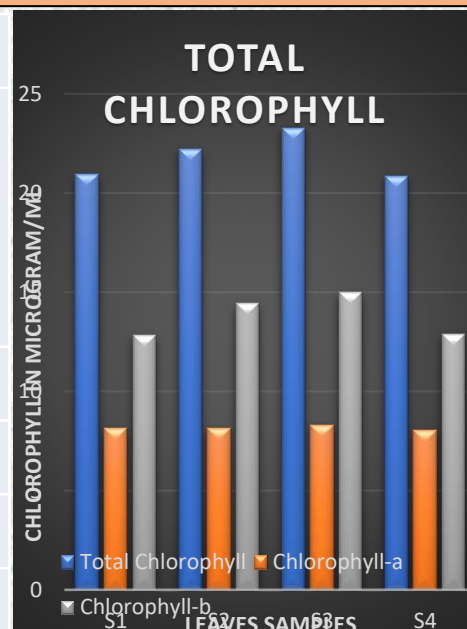
OBJECTIVE

1. N₂ Fixation
2. Phosphate solubilization
3. Enhancement of chlorophyll content
4. Reduce aging of vegetable crops



RESULTS

Sites	Chlorophyll contents		
	Chl-a (ug/ml)	Chl-b (ug/ml)	Total chlorophyll (ug/ml)
S ₁	8.120	12.822	20.938
S ₂	8.156	14.424	22.187
S ₃	8.313	14.944	23.279
S ₄	8.023	12.854	20.860



CONCLUSION

The total chlorophyll content, chlorophyll-a, chlorophyll-b, estimated by using Arnon's method. Total chlorophyll were found to be less for samples collected from industrial area comparing to samples from non-polluted site. Biofertilizer has potent ability to enhance chlorophyll content and makes soil fertile.

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- 1Research Scholar, Department of Biotechnology, Vels Institute of Science, Technology and Advanced Studies, Chennai, Tamil Nadu, India.