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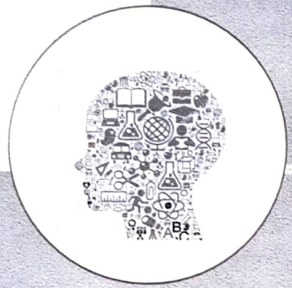

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CULTIVATION OF PLEUROTUS MUSHROOM AND PREPRED THEIR TWO NUTRITIONAL FOOD PRODUCT-PAKODA AND PICKLE

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Abstract:
Mushrooms provide important nutrients, including selenium, potassium, riboflavin, niacin, vitamin D, proteins, and fiber. All together with a long history as food source, mushrooms are important for their healing capacities and properties in traditional medicine.Mushrooms contain antioxidants as well as compounds that have anti-inflammatory properties. Topical use of these natural compounds promotes healing and fights inflammation. Mushroom extracts are often used in skin products for treating skin conditions like eczema, rosacea, and acne. Pleurotus is a genus of gilled mushrooms which includes one of the most widely eaten mushrooms, P. ostreatus. Species of Pleurotus may be called oyster, abalone, or tree mushrooms, and are some of the most commonly cultivated edible mushrooms in the world.

Scientific name: Pleurotus
Phylum: Basidiomycota
Higher classification: Pleurotaceae
Order: Gilled mushrooms
Genus: Pleurotus
Introduction :

Mashroom are acknowledged food source and widely consumed through the worled .the mashroom cultivation is estimated .the present study aimed at the formulation of mashroom pickle and pakoda product and influence by its nutritional value ,quality and physiochemical properties.mashroom provided important nutrients for human body.Pleurotus is a edieble mashroom is having high percentage of nutrients and proteins.mashrooms are used into food industries.

This study consisting cultivation of mashroom in various steps like Soak Straw, Drain and Bag, Pasteurise, Prepare Growing Room.Inoculate bag,Incorages colonisation.Monitor bags etc.After harvesting cultivated mashroom and then formation of their products-Pakoda and pickle.also get aware peoples about use of Mashroom by servaey.

Materials And Methods:

1)Cultivation Of Mushroom:

1.Straw (the medium for growing the m in mshrooms)
2.Containers (for soaking straw)
3.Plastic bags (or reusable containers for holding straw)
4.Elastic bands or string (to constrict bag opening)
5.Cotton wool (to filter out contaminants)
6.Barrel or drum (for pasteurising the straw)
7.Material liner (for holding bags within barrel)
8.Gas burner (for heating barrel)
9.Bleach spray (to clean growing room)
10.Spoon, gloves, clean clothes, face mask (to look the part when inoculating straw)

11.A growing area that can retain moisture in the air, shaded with some light

12.Possibly plastic sheeting (to help retain humidity & to reduce other unwanted moulds)

13.Mushroom spawn (see How to Grow Mushroom Spawn)

14.A water or weed sprayer (to increase humidity within growing room)

15.A thermometer and hygrometer (to keep an eye on temperature and relative humidity)

Step 2: Soak Straw, Drain and Bag

The mushrooms require a medium to grow in. in this case we will be using straw. The straw length should be approximately 5-10 cm (2-4 inches). Placing the straw in water tight containers, submerge the straw in water for 24 hours. Wash, rinse and drain thoroughly, then bag in 5 litre plastic bags ready for pasteurising.

Step 3: Pasteurise

Position your drum onto the heat source (we used a gas burner), pouring around 40 litres of water into the drum. Place a suitable platform at the bottom of the drum, one that will keep the bags above the water yet allow steam to rise. Insert a material bin liner and fill with the prepared bags of straw. Close off the bags with the liner and cover the drum with a lid. Heat the drum, steaming the bags for approximately 60 minutes. It should take around 30 minutes for the steam to make its way to the top bags (the temperature should near 95°C ~200°F). Leave to cool, removing the bags and transferring them to the growing area.

Step 4: Prepare Growing Room

The growing room should be clean and dimly lit (shaded with indirect sunlight), able to retain moisture in the air yet also provide an airflow when ventilation is needed. Plastic sheeting can be used to seal off an area to help retain humidity and to reduce other unwanted moulds and insects.

To prepare the room for the inoculations, spray a 1:20 (5%) solution of bleach along walls and corners (any area where mould might like to grow). Temperatures of 10°C to 24°C (50°F to 75°F) for pleurotus ostreatus (winter) and 10°C to 30°C (50°F to 85°F) for pleurotus pulmonarius (summer) should be available depending on stage of growth (initial spawn run, colonisation, pinning and fruiting).

Step 5: Inoculate Bags

Before inoculating the bags of straw, make sure you have showered and are wearing clean clothes. Clean your hands with antibacterial soap or wear sterile gloves. A face mask and hair cap will also help reduce contamination (we are very dirty creatures). Open the bags of straw and the mushroom spawn. Taking a sterile spoon, place a few spoonfuls into the straw, breaking it up and mixing lightly. As a general rule, the more spawn you add, the faster the substrate will be colonised (with 1 litre of spawn, we inoculated about 10 bags - you could inoculate more). Restrict the opening of the bag by placing a rubber band (or cord) around the bag's neck. Taking a small piece of cotton wool, plug the bag's opening to reduce the chances of contamination and insect infestation. Leave to incubate.

Step 6: Encourage Colonisation

Once inoculated, the bags should be left to incubate. During this time the spawn "runs" (mycelium spreads) throughout the straw. The spawn run will be complete when the mycelium has spread entirely throughout the bag (the straw is then fully colonised).

Depending on the mushroom variety, humidity and temperature, this process should take between 1 to 3 weeks.

Pleurotus ostreatus (winter), 24°C (75°F) 2 to 3 weeks

Pleurotus pulmonarius (summer), 24°C to 30°C (75 to 85°F) 1 to 2 weeks

During incubation, light is not required, however, make sure the bags have plenty of fresh air.

Step 7: Monitor Bags

It is important to monitor the bags for any sign of unwanted moulds and pests. While the straw is still in the bags, you shouldn't have a problem with insects or mice. However, the best policy for fighting both contamination and

infestation, is prevention. You may want to spray some surfaces to deter flies and other insects from setting up home, mesh any windows and keep doors closed. Regularly check bags for any mould contamination and remove any infected bags from the growing area. Black mould found within the straw may indicate ineffective sterilisation. You may also notice sprouting straw and the appearance of unwanted mushrooms such as the ink cap (see pictures). Green moulds are common and can be caused by contaminated spawn (ineffective grain sterilisation), high moisture / low spawn levels and ineffective straw sterilisation. At this early stage, it is better to simply remove infected bags, as you want to prevent its spread. Up to a 10% loss due to contamination is generally regarded as acceptable. Finally, as the bags become fully colonised, the initial stages of fruiting (or pinning) may beseen.

Step 8: Encourage Pinning

Once pinning has started, it is time to remove the substrate from the bags. Pinning naturally occurs as humidity increases, low levels of light appear and temperature levels fall. Increase the growing room humidity by regularly spraying with a water sprayer (avoid spraying directly on the mushrooms). You can also wet the floor and leave open containers of water in the room (95-100% humidity is recommended).

As our climate is very dry, we only managed 60% at best, dropping down to 40%, by spraying 5 litres of water 2 - 3 times a day (even at these humidity levels a good result can be achieved). To prevent excessive CO_2 levels, allow the growing area to flush with clean air before spraying. If you can, regulate the temperature accordingly.

Pleurotus ostreatus (winter), 10-15°C (50-60°F)

Pleurotus pulmonarius (summer), 10-24°C to 30°C (50-75°F)

You may notice an initial drying out of early stage pinning, as you remove the plastic. As you maintain the humidity levels this will regenerate. Keep a close eye on flies and spray when needed. If any mould is found, either remove the infected straw or the entire mound from the growing area.

Step 9: Harvesting

As the mushrooms begin fruiting, it is important to keep the humidity high (85-90% is recommended). As before, allow air to flush through the growing area prior to spraying (oyster mushrooms require a consistent source of fresh air). Temperatures can now be higher than for the initial pinning stage.

Pleurotus ostreatus (winter), 10°C to 20°C (~50°F to 70°F)

Pleurotus pulmonarius (summer), 16°C to 28°C (~60°F to 80°F)

Remember to constantly monitor for pests, such as flies and mice, as they can quickly ruin a crop. You should expect three or more crops, each taking arounda

week or so to mature. You may harvest the mushrooms at any size, however, once a mushroom has reached its full size, you will notice it will begin to dry, turning a yellowish colour (they taste great, even dry). When harvesting, remove the mushroom completely, by twisting firmly at its base. After harvesting a few crops, we found it helpful to stack the mounds of straw, which seemed to help increase the yield. If you find your mushrooms with long stalks and small caps, they may not be getting enough light, also high CO2 levels can also lead to small deformities (allow for more fresh air). After the straw ceases to produce mushrooms, it can be fed to livestock or composted.Now, finally take your harvested mushrooms

Preparation Of Mushroom Pakoda:
Ingredients
1 cup besan / gram flour
¼ cup rice flour
½ tsp kashmiri red chilli powder / lal mirch powder
pinch of baking soda
½ tsp chaat masala
¼ tsp ajwain / caraway
pinch of hing / asafoetida
½ tsp ginger garlic pastesalt to taste
½ cup water

Recipe:
firstly, in a large mixing bowl take 1 cup besan and ¼ cup rice flour.
also add ½ tsp chilli powder, ½ tsp chaat masala, ¼ tsp ajwain, ½ tsp ginger garlic paste, pinch of hing and ½ tsp salt.
add in ½ cup water and whisk smooth.
make a smooth batter without forming any lumps.
also add a pinch of baking soda and mix gently. do not over mix as baking soda will loose its property.
make sure the batter is flowing consistency.
dip the small mushroom into prepared besan batter and coat it completely.
furthermore, deep fry in hot oil.
also stir occasionally and fry on both sides.
further, fry the mushroom till they turn golden brown.
finally, mushroom pakoda recipe is ready to serve.

Preparation Of Pickle
Ingredients:
Mushrooms - number.
→ Oil - 1/2 cup.
→ Turmeric powder - 1/4 tea spoon.
→ Sesame seeds powder - 1 tea spoon.
→ Mustard seeds powder - 1 tea spoon.
→ Red chilly powder - 1 tablespoon.
→ Salt - to taste.
→ Lime juice - 2 tablespoons.

Racipe:
Cut mushrooms into 2 pieces and keep aside.
Heat oil in a pan and add mushrooms and remove from flame and keep aside.
When mushroom colour change add turmeric powder, sesame seeds powder, mustard seeds powder, red chilly powder, salt, lime juice and mix nicely.
Transfer into a container and stored in refrigerator or outside for 1 week or 10 days.
Now Mushroom Pickle is ready to serve.

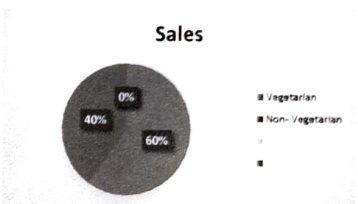
Below are the survey of Mushroom Awareness of 100 people's of all age group.

Questionnaire:
Here are some question related to the Mushroom Awareness for common day to day routing.

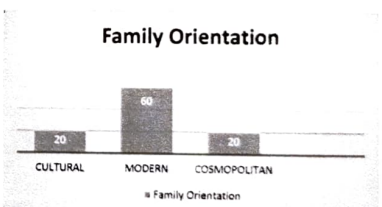
1. Name:
2. Age:
3. Sex:
4. Educational Qualification:
5. Diet style:Vegetarian/Non Vegetarian
6. Family Orientation: Cultural/ Modern/Cosmopolitan
7. Family Type: Common/Nuclear/separated due to both are working
8. Family background: Civilian/ Army/Mixed
9. Diet style of the family: Vegetarian/ Non vegetarian/ Eggetarian.
10. Do you wish to know about different king of foods? Yes/No
11. Do you like to cook or eat different kings of food items? Yes/No
12. Have you heard about mushroom?
13. Have consumed it
14. If no, Say something why don't like mushroom?
15. Any other information you wish to tell?

Result:-
Some are the analysis of the Mushroom used in daily lifestyle. And the observation shared below are the analysis report about the Mushroom Awareness Questionnaire.

- Q.1. Diet Style: Vegetarian/ Non-Vegetarian.



- Q.2. Family Orientation: Cultural/ Modern/ Cosmopolitan.



- Q.3. Family type: Common/ Nuclear/ Separated.

WOMEN EMPOWERMENT IN MODERN AGE

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CONTENTS

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Contribution Of Womens In Constitution Making

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Introduction:

August 15th and January 26th have special significance in India. Indians celebrate these days as national festivals. Because India got independence on August 15, 1947 and the Constitution was implemented in India on January 26, 1950. We celebrate this day as Republic Day. Apart from these two days, one more day has special significance in India and that is on 19th November. 2015 Union Ministry of Social Affairs and Empowerment decided to celebrate 26th November as 'Constitution Day'. The constitution is not a legal document for the country but the constitution embodies the hopes and aspirations of the people of the country. The 'Constitution of India' is the way to reach the heights to which the framers of the Constitution wanted the country to reach. The Constitution is the fruit of immense labor of our forefathers. It took a total of 2 years, 11 months, 18 days to make the Constitution of India. When the constitution was being made in India, women in many countries around the world were deprived of their rights, but we should be proud that 15 women played an important role in the constitution making process of India. Ammu Swaminathan, Rajkumari Amrit Kaur, Malti Chaudhary, Sarojini Naidu, Sucheta Kripalani, Pandita Vijayalakshmi, Kamala Chaudhary, Durgabai Deshmukh, Purnima Banerjee, Begum Ejaz Rasool, Hansa Mehta, Renuka Ray, Annie Mascarine, Mila Ray, Dakshinyani Velayodhan played an important role in the constitution making. Participated in the making of the constitution by playing a role.

Princess Amrit Kaur:

In 1920, Times magazine named former Indian Prime Minister Indira Gandhi and freedom fighter Princess Amrit Kaur as one of the 100 most influential women of the century. Princess Amrit Kaur was born in the royal family of Kapurthala. Returned to India in 1918 after completing his education from Oxford University. Influenced by Mahatma Gandhi's ideas, he held the charge of India's first Health Minister. She was the only woman to join the first cabinet of independent India. During his tenure of 10 years, he founded Indian Council for Child Welfare, All India Institute of Medical Sciences (AIIMS), Lady Irvine College, Delhi. Not only did he play a role in the creation of AIIMS as the Minister of Health, he also played an important role in securing funds from the New Zealand government when money was needed for the construction.

Along with this, he also received donations from the Rockefeller Foundation and the Ford Foundation. He founded the Delhi wing of the All India Women's Conference (AIWC). She was also the first president of the Indian Red Cross Society. She was also in the sub-committee on Fundamental Rights and Rights of Minorities in the Constituent Assembly. At the same time, she was a member of the Provincial Constitution Committee. In the Constituent Assembly, she stood for the Uniform Civil Code. Although known as a supporter of equality between men and women, he was against women's reservation because he believed that universal suffrage would automatically open the doors of public institutions to women.

Ammu Swaminathan:

Born in Pallakar in Kerala, Ammu became active in politics in 1914. In 1917, she founded the Women's India Association. It was the first organization that discussed universal suffrage, constitutional rights for women. She was a supporter of Child Marriage Prevention Act, Age of Consent Act 1891 and Hindu Code Bill. He was always opposed to casteist practices. They were discussed on basic rights and policy directives. Ammu Swaminathan was a great supporter of women's rights, participating in every meeting of the Constituent Assembly and enthusiastically participating in every discussion. She had never attended school herself but knew the importance of women's education. Their contribution in women's education is very important. During the motion in the Constituent Assembly, he said, "Outsiders say that the Indian constitution did not give rights to women, but now we can say that Indians also made the constitution and gave rights to women."

Dakshinyani Velayodhan:

Born in the Pulaya community in Kerala, Dakshinyani Velayodhan was the only Dalit woman to participate in the Constituent Assembly. He was of the opinion that the Constituent Assembly is not only making the constitution but giving a different dimension to the people's life. He strongly opposed seeing those Dalits as a minority. She kept talking about Article 17 which would end untouchability. In 1977, he established Mahila Jagruti Parishad.

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Leela Roy:

Leela Roy was the only woman to participate in the Constituent Assembly from Bengal. Many of us may not know that apart from Mahatma Gandhi, Lal Bahadur Shastri, Leela Roy's birthday is also October 2. Who opposed women's standard life. Became an associate of Subhash Chandra Bose and a member of his forward block. He had actively participated in the 'Quit India' movement. Although she was the first woman elected to the Constituent Assembly from Bengal, her homeland was separated from Dhaka, India, after the partition of Bengal. Against this he resigned and devoted himself to the care of the refugees.

Begum Ejaz Rasool :

Begum Ejaz Rasool was born into the ruling family of the then Muslim state of Malerkotla in Punjab. She was against giving constituencies on the basis of religion and thus faced criticism from people of her own religion. She was a supporter of political rights for minorities in a secular country. He played an important role in ending the Zamindari system. She was the President of Indian Women's Hockey Federation for 20 years and also served as the President of Asian Women's Hockey Federation for some time. Being fond of literature, he wrote a booklet called 'Three Weeks in Japan'. Her autobiography 'Pardato Parliament: A Muslim Women in Indian Politics' is famous.

She was also a member of some committees in the Constituent Assembly. She was in support of India's decision to join the Commonwealth when it was opposed by its members. He vehemently opposed certain restrictions placed on fundamental rights.

Hansa Mehta:

See the contribution of Hansa Mehta who changed the definition of UDHR (Universal Declaration on Human Rights). She was known as a defender of women's rights both in India and outside India. While serving as India's representative to the United Nations Human Rights Commission, he changed the wording of Article 1 of the UDHR. It was first said that 'All Men are born free and equal' by changing it to 'All human are born free and equal'. He maintained his relationship with the UDHR while drafting the Fundamental Rights. They were against all such undesirable practices which were cultivated in the name of any religious traditions.

Durgabai Deshmukh:

Born in Andhra Pradesh, Durgabai Deshmukh had a child marriage which she herself rejected and ended. In the Constituent Assembly, he presented his party in favor of an independent judiciary. In a debate in the Constituent Assembly, he said that the concept of an independent Indian judiciary would depend on how judges were appointed. She was a member of the Rules and Procedures Committee. According to Durgabai Deshmukh, he presented nearly 750 researches in the Constituent Assembly. She used to attend every meeting of the Constituent Assembly to present her issues effectively.

Kamala Chaudhary:

Kamala Chaudhary participated in the Constituent Assembly from the United Provinces, now Uttar Pradesh. He made his significant contribution in the field of women education in rural areas. Along with this, he also contributed in the field of Khadi.

Malti Chaudhary:

He was born in East Bengal. Known for welfare of farmers and tribals in Odisha. He was elected to the Constituent Assembly but resigned from the Constituent Assembly to work with Mahatma Gandhi in Noakhali. Due to the partition of the country, Noakhali had suffered huge losses due to large-scale riots.

Purnima Banerjee:

Purnima Banerjee requested changes in Article-16 and Article-18 in the Constituent Assembly. The word 'sovereign' in the preamble of that constitution was opposed. He was of the opinion that giving the people the right to vote once in five years cannot be called sovereign. He greatly supported women's representation in the legislature. She was against separate constituencies for women but was of the opinion that women should be represented in seats vacated by women.

Renuka Ray and Sarojini Naidu:

Renuka Ray discussed various issues like women's rights, minority rights and bicameral legislature. Sarojini Naidu was the President of Indian National Congress at that time. She also had the distinction of being the first Governor of independent India. Sarojini Naidu was a great politician and a great freedom fighter, apart from being a poetess, and one of the greatest orators of her time. She was actively involved in the Indian freedom movement. She was also called the nightingale of India and the cuckoo of India. was going In her speech in the Constituent Assembly, she said, "There is no discrimination of caste and religion in the Constituent Assembly. All the people of this country can understand that the people sitting in the Constituent Assembly will never allow their rights to be misused."

Sucheta Kripalani and Vijayalakshmi Pandit:

Sucheta Kripalani was the first woman Chief Minister of the state of Uttar Pradesh. She founded the All India Mahila Congress and represented India in the United Nations General Assembly. Also represented India in the International Labor Organization in 1961. In the Constituent Assembly he was entrusted with the task of bringing the new ideas into a document. Vijayalakshmi Pandita was

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the first woman president of the United Nations General Assembly. She also served as ambassador to several countries including the USA, Mexico and Spain.

Annie Mascarine:

Annie Mascarine was born in Trivandrum, Kerala. During the discussion in the Constituent Assembly, he opined that centralization of power would be harmful for democracy. At the same time, he also stressed on the issues of state elections and state autonomy.

Apart from these 15 women, many prominent leaders contributed in the formation of the constitution. While studying the contribution of women in the making of the constitution, it is expected that everyone will be aware of the work done by them and the contribution made by women in the freedom struggle.

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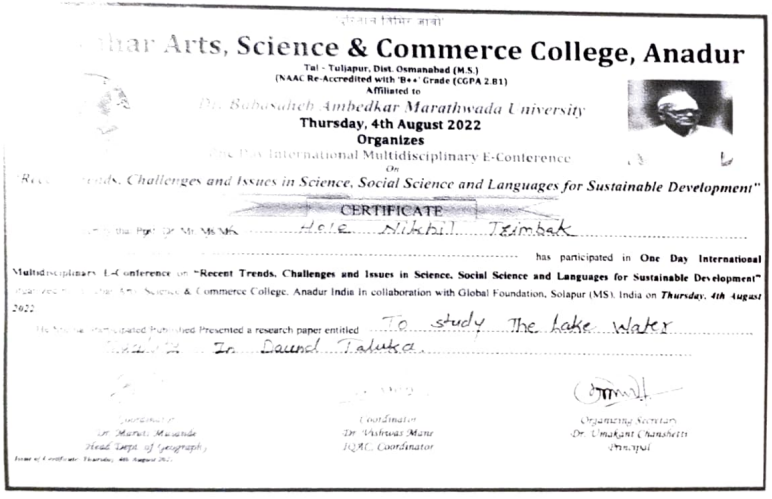

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A PHYTOCHEMICAL ANALYSIS AND PHARMACOGNOSY RESEARCH OF TOMATO FLOWER EXTRACT

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Abstract:
Most of the world's traditional healthcare systems have used plant-based medications for thousands of years. Everyday Ayurvedic practices involve the use of numerous therapeutic herbs. More than 7,000 different species of medicinal plants exist in India. And food industries all use medicinal plants. Medicinal herbs have been used to prevent and treat a variety of illnesses since ancient times. One of the most popular vegetables and one with a long history in traditional medicine, the tomato is used to treat a wide range of ailments. Several bioactive chemicals have been extracted from the various portions of the plant and were investigated pharmacologically. Over the past few decades, advanced scientific techniques have been extensively studied the tomato for its therapeutic potential. In the current study, the existence of bioactive chemicals was assessed using phytochemical analysis of tomato blossoms utilizing a variety of polar solvents, including hexane, chloroform, methanol, and water. Terpenoids, phenolic chemicals, carbohydrates, and tannins were all discovered by the investigation. The research indicates that methanolic extract of tomato flower has encouraging therapeutic potential, with pharmacological properties that, if properly harnessed, can be used in the management of various diseases and can serve as a foundation for the development of novel potent drugs.

Keywords: *phytochemical analysis, Ayurvedic, Tomato,*

Introduction:

One of the most popular vegetables and the second largest vegetable production in the world is tomato. It is an essential part of the Diet of the Mediterranean which is closely linked to a decreased chance of developing the chronic degenerative illness. The primary source of antioxidants is the tomato which includes carotenoids like B-carotene, and lycopene, which are responsible for the red color of the fruit. Vitamins such as vitamin A, ascorbic acid and tocopherol, phenolic compound, and hydroxyl cinnamic acid derivative.The naturally occurring and non-nutritive bioactive compounds are phytochemicals that are produced by plants and act as protective agents against pathogenic attacks and external stress. Phytochemicals are classified into several types; alkaloids, phenolic, tannins, saponins, terpenes, proteins, etc. It also exhibits bioactivities such as antioxidant, anticarcinogenic and antimutagenic.

Materials and Methods:

Collection and identification of Plant Materials

The samples were collected in the rural area of Daund, Pune. The tomato flowers were carefully cleaned twice with running tap water and once with sterile distilled water. They were then allowed to air dry at room temperature on a sterile blotter. Young flowers were finely powdered using a blender after they had completely dried. The powdered substance was then weighed, placed in an air-tight container, and frozen for later use. This powdered sample weighed around 10g, and a 1:10 (w/v) mixture of chloroform, methanol, and water was refluxed with it. The unfiltered extracts were collected and stored in colorless sample bottles. The solvents and all of the other chemicals and

reagents employed were of analytical grade.

Pharmacognostic Profile:

Extractive Value: Sample powdered (powder was prepared with various ... for the study of extractive values.

Fluorescence Analysis: Kept a few ... sample powdered material on ... slide and it was treated with ... reagent solution mixed ... to the reagent for 1-2 ... The different colors were ... when the slide is viewed under ... at ordinary and day light.

Phytochemical analysis: under solvents ... form, methanolic and water the ... analysis of sample powder was ... by using method to identify ... as described by Harbone, ... and Evans, and Sofowara.

Test for Carbohydrate

Fehling Test: 1 gm sample powdered ... with 5 ml Fehling solution it kept ... water bath. Precipitate shows yellow ... color which indicates the presence ... sugar.

Molischs Test: 1 gm sample powdered ... added in molischs reagent after that ... sulfuric acid was added along the ... of the test tube. This mixture stands ... minutes then add 5 ml distilled ... for dilution. The dull violet color ... obtained between two layers that ... the presence of carbohydrates.

Test for Phenol

Ferric Chloride Test: Sample powder ... with ... ferric chloride solution ... dark blue/black color precipitate shows the ... of phenol.

Test for Proteins

Millions Test: 1gm sample powder ... treated with Millions reagent red color of ... precipitate indicates the presence of ... Proteins.

Buiret Test: 1 gm Sample powder ... treated with 10% Sodium Chloride and ... copper sulfate formation of violet or ... purple color changed to dark violet on ... addition alkali which indicates the ... presence of protein.

Test for Saponins

Foam Test: Sample powdered diluted with water and shaken immediately persistent of foam indicates the presence of saponins.

Test for Tannins

Sample powder was diluted with water and kept in a water bath for 1 hour and it was treated with ferric chloride solution. The dark green color of the precipitate indicates the presence of Tannin.

Test for Terpenoid

Chloroform test: 1 gm sample powdered treated with chloroform and conc. Sulphuric acid was added along with the side of the test tube, forming a reddish-brown color layer indicating the presence of terpenoid.

Result and Discussion

Extractive Value:

Table 1. Sample powder of tomato flowers, extractive values are given

Solvents	Extract values (% w/w)
Chloroform	8.30
Methanol	12.80
Water	10.50

Fluorescence Analysis:

Table 2 contains results of fluorescence analysis i.e. the color of sample powder and solvent in daylight and UV light

Table 2 Fluorescence Analysis of Tomato Flowers

Sr. No.	Plant sample	Day light	UV light (365nm)
1	Powder	Dark Green	Green
2	Powder + CH_3COOH	Greenish Brown	Brown
3	Powder + CH_3COCH_3	Yellowish Green	Pale Green
4	Powder + $CHCl_3$	Pale Green	Yellowish Green
5	Powder + Hydrochloric acid	Dark Green	Light Green
6	Powder + Nitric Acid	Yellowish Green	Light Green
7	Powder + NaOH	Light Green	Pale Green

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Phytochemical Analysis:

Sample powder was undergone different qualitative tests for the identification of phytochemical constituents including test for carbohydrate – Fehling test, Molischs test), Phenols, proteins (Xanthoprotein test, Millions Test, Buiret test), saponins, tannins, terpenoid were identified.

Table 3 Phytochemical Analysis of Tomato Flower

Sr. No	Phytochemicals	Aqueous	Chloroform	Methanol
1	Carbohydrate	+	+	+
2	Phenol	+	+	+
3	Proteins	+	+	+
4	Saponins	+	+	+
5	Tannins	-	-	+
6	Terpenoids	-	+	+

(+ Present, - Absent)

Conclusion

Most of the medicinal plants are the choice in a recent search for therapeutically effective new drugs. About 80% of countries used medicine derived from medicinal plants. Therefore it should be known the safety efficiency and properties of that plant there are lots of side effects of drugs that are existing on the market. It remains difficult to find sustainable means. Numerous studies must be carried out with new brands or altered iterations of already available medications. In this study, phenols, terpenoids, tannins, and carbohydrates were found in the methanolic extract of tomato flowers. Therefore support the validity of the plant-rich sources of therapeutic efficiency future sources of medicinally effective medications will from the extensive study.

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TO STUDY THE MULA-MUTHA RIVER WATER QUALITY

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ABSTRACT

It is crucial to be aware of the drinking water resources' quality in rural areas. Hydro-geochemical studies are becoming more important for the use of groundwater because there has been a rise in the demand for water recently due to population growth and intensive agricultural operations. One of the major environmental health risks is the quality of drinking water. The use of clean drinking water is the cornerstone of controlling and preventing diseases that are transmitted by water. In this study, it has been determined whether the water quality of Mula-Mutha river is suitable for drinking purposes or not. Eight samples were collected from different Locations; each sample was examined for Physiochemical parameters. The Central Water Commission, World Health Organization, and CPCB (Central Pollution Control Board of India) protocols were followed for doing the water's Physiochemical Analysis. Water quality standards and a number of parameters, including pH, Dissolved Oxygen (DO), Chemical Oxygen Demand (COD), Temperature, Specific Conductivity, and Total Dissolved Solid, were examined. The pH ranged from being very basic to barely neutral in all of the samples. Among samples, there had been differences in TDS, temperature, pH, and conductivity. The investigation of the river water revealed that it cannot be used as potable water.

Keywords: Mula & Mutha River, Pune city, TDS, conductivity, water samples, physical parameters.

Introduction: The Mula & Mutha River is the origin from Mulashi and Khadakwasala Dam. It also passes through the city of Pune before meeting the river Mula in the Shivajinagar neighborhood, where it is known as the Sangam Bridge. It flows as the Mula-Mutha River in the metropolitan region after combining with the Mula River in Pune city. The water from both rivers was only used for residential, agricultural, and irrigation purposes throughout their original journeys. For the villagers living along the river's edge back then, the river was their only source of drinking water. However, due to the rapid industrialization and civilization, the river's importance was transformed, and instead of being used for its original purposes of providing water, the river was made into a place for the disposal of sewage wastes and unnecessary materials. The river now resembles a canal conveying waste water to the purification unit as a result of the mixing of undesired items into the water body; ordinarily, this type of situation was observed in the summer. Large amounts of fertilizers and pesticides are released into the river water as a result of agricultural run-off.

In general, fresh water is a good resource that is necessary for human existence, agriculture, and industry. Fresh water is currently one of the key factors in healthy development. According to a literature review, the discharge of sewage and other types of effluents into the river body causes close to 70% of the surface water in our country to become contaminated. Water becomes contaminated as a result of human activity. One can gain a sense of the quality of the water by looking at its physical, chemical, and biological characteristics. Therefore, it is crucial to continuously evaluate the drinking water's purity.

Materials & Methods:

Collection of Sample

Eight samples were taken from various Mula-Mutha River sample stations. American Public Health Association guidelines for additional physiochemical parameter evaluation were used to collect the water samples in triplicate in plastic containers (1995). The entire list of the criteria used for the analysis

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is provided in (Table 1). Water analysis for eight samples taken from different locations along the Mula-Mutha River for the month of May 2022 was done, and the results are shown in (Table 2).

Table 1 Chemical evaluation of water samples parameters and methods

Sr. No	Parameter of water analysis	Methods
1.	pH	pH Metry
2.	DO	Azide modification
3.	COD	Dichromate reflux
4.	Temperature	Glass Thermometer
5.	Conductivity	Conductivity meter
6.	TDS	Gravimetric

Table 2. Physicochemical Characteristics of Eight Samples in Mula-Mutha River

Sr. No.	Parameter of water analysis	Units	S1	S2	S3	S4	S5	S6	S7	S8
1.	pH	-	8.55	8.42	8.10	7.84	7.40	5.22	5.50	6.10
2.	Temperature	◌C	28	29	28	28	28	28	28	28
3.	DO	Mg/l	2.4	2.3	1.8	3.1	3.4	2.2	0.8	1.6
4.	COD	Mg/l	44	42	46	48	62	52	58	73
5.	Conductivity	µmhos/cm	282	270	172	560	450	784	670	550
6.	TDS	Mg/l	280	320	356	418	350	540	620	460

Graphical Presentation of all the parameters:

Figure 1

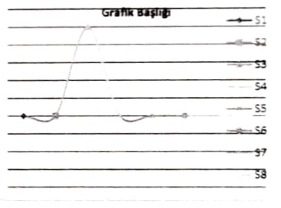

Figure 2

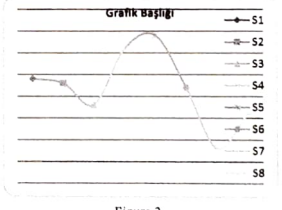

Figure 3

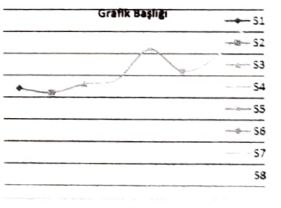

Figure 4

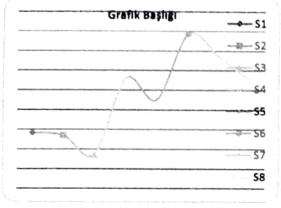

Figure 5

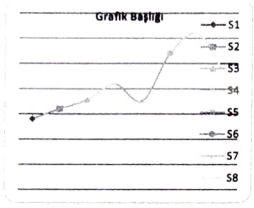

Figure 6

Result and Discussion:

It is discovered that the pH of the river water is in the range of 5.22 to 8.55 by examining the river water quality for these ten criteria. With the exception of S6, S7, and S8, all other pH values were somewhat basic, while S5 was neutral. (Fig 1). It demonstrates that the river water is below Indian requirements at sampling stations S6, S7, and S8. i.e. acidic in nature. The detected pH at sampling station number 1 is 8.55, and this higher value shows that domestic load has been mixed with the river's water body. Temperature of Water is a crucial factor that directly affects various chemical processes in aquatic ecosystems. The temperature of water was found to be in the range between 28°C to 29°C (Fig 2). The observed range of DO in the presented water sample was between 0.8 mg/L and 3.4 mg/L. According to Indian standards, the acceptable DO range is 6 to 7.00 mg/L. However, in our situation, the DO level falls short of Indian guidelines (Fig 3). It might be because of detergents, human waste discharged into the environment, and organic waste produced by the food, paper, and pulp industries. The research area's chemical oxygen requirement was found to be between 42 and 73 mg/l (Fig. 4), which is higher than the 250 mg/L permissible limit prescribed by Indian guidelines. Here observed values of COD show that the pollution level is at increased. There would be 172 to 784 mhos/cm of conductivity (Fig 5). S6 exhibited the highest conductivity. Inorganic dissolved particles including chloride, nitrate, sulphate, and phosphate, in addition to sodium, magnesium, calcium, iron, and aluminium, have an impact on conductivity in water. The range for total dissolved solids is 280 to 620 mg/l (Fig 6) it is due the Chemicals from sewage treatment, pesticides, and road salts, and/or fertilizers, can also be dissolved in water, and contaminate both drinking supplies and bodies of water. High total dissolved solids frequently have a negative impact on mobility.

Conclusion:

After analyzing all the parameters of Mula-Mutha river water, it is observed that some samples of river water did not exceed the maximum permissible limit given by WHO. Some of the parameters are showing the higher values at some stations because of the river enters in the pune city and quality of the river water has changed as a result of the mixing of sewage water with industrial effluents and agricultural runoff. Water is therefore unfit for any residential or other applications. The first mixing of sewage water should be avoided, and river water should be regularly monitored, in order to reduce contamination levels.

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