

Development of Anti-Pesticide Finished Jute Apron for farmers

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ABSTRACT

When working in an open field, farmers constantly have skin care disinclinations. Insects and nonentity- suchlike bugs come in a wide variety and can spark disinclinations. The most frequent smelling insects that can affect in an antipathetic response when bitten include mosquitoes, beetles, bedbugs, fleas, and various kinds of cockroaches. The maturity of people who are stung by insects experience discomfort, greenishness, itchiness, surcharging, and slight lump in the position of the bite. Infrequently, an antipathetic response that could be fatal can be brought on by a nonentity bite. Insects may be the most typical seasonal allergen and asthma detector. A jute apron is a garment that's worn by the farmers over other apparel to cover the front and back of the body. Also, the jute apron is carpeted with nonentity repelling vinegar. Farmers can cover themselves against pests as a result. Vitamin A and vitamin C are among the numerous vitamins and minerals set up in jute, which may help reduce inflammation, support bone health, and strength which raises your threat of complaint, is set up in jute. Jute for case has an advanced position, as does aged jute. The lungs may profit from jute anti-inflammatory parcels. A result of acetic acid is vinegar. Acetic acid typically makes up 5- 8% of acetic acid. In addition to being a fantastic cleanser, vinegar also works well to keep a variety of pests down. Vinegar works incredibly well as a pest interference thanks to its acetic acid content which also kills insects. It works best against mosquitoes, spiders, and ants. Astonishingly, vinegar is a material. It's used for everything from precluding complaint, fending off insects, and cuisine. Most specially, it serves as both a germicide and a general nonentity repellent, making it a useful tool for pest operation. Also an eco-friendly and biodegradable product. therefore, the jute apron aids farmers in guarding themselves from pests and germicides

Keywords: skin allergy, pain, redness, itching, stinging, farmers, jute Apron, relief, anti-pesticide, vinegar (pest control).

INTRODUCTION

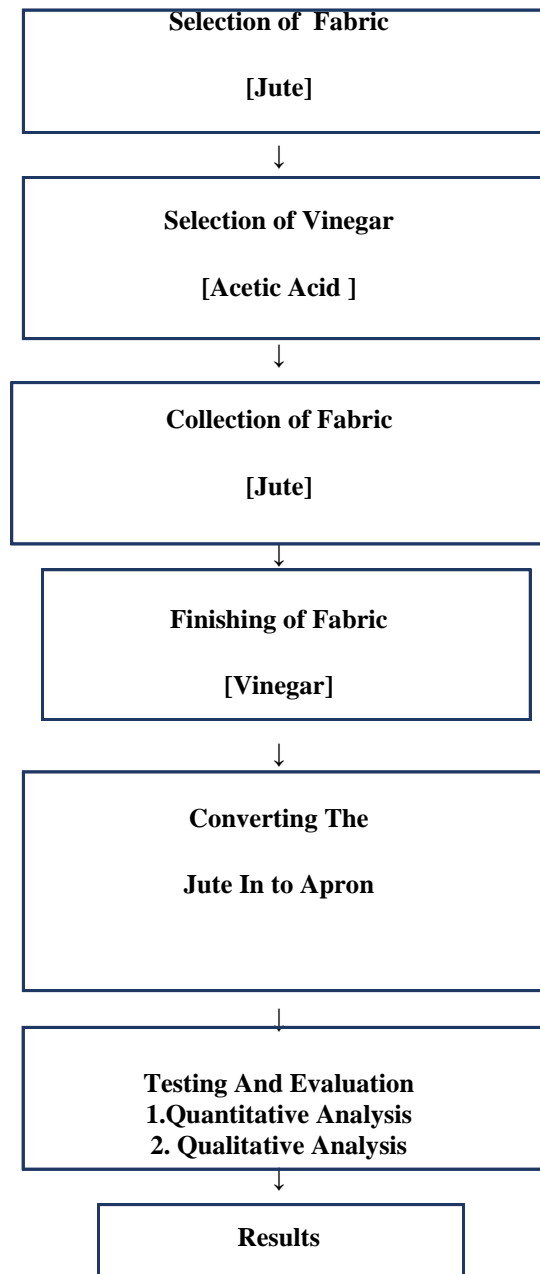
Intact, healthy skin is an important part of the immune system and provides defense against physical, biological or chemical agents. Skin allergy is common to farmers when they were working in open field. There are many different types of insects or "insect-like bugs" that may cause an allergic. A jute apron is a garment that is worn by the farmers over other clothing to cover the front and super pest resistant vinegar. Insect pests are one of the important constraints for underscoring jute production. Jute are filled with vitamins and minerals, including vitamin A and vitamin C, that helps to reduce inflammation, promote bone health, and build up the immune system.

Vinegar is one of the best ingredients to make a pest control. Acetic acid is one of the general organic acids. Acetic acid is one of the very few chemicals with two general names. "Vinegar" means concentrations up to 8%. "Acetic acid" means concentrations higher than 8%. When the concentration is low it is to be called as vinegar. Acetic acid is one of the small number chemicals with two common names. Both depend upon its concentration. "Vinegar" means concentrations up to 8%. "Acetic acid" means concentrations higher than 8%. When the application is low enough to be called vinegar, it is a food product. When the application is high it is to be called acetic acid, and it is used to kill pest. Vinegar is often used as a contact type insecticide. Vinegar is basically an aqueous solution composed of water and acetic acid. Vinegar as a product has already has both alcohol and acid fermentation. The contented acetic acid in vinegar makes it an acidic compound. In various types of vinegar, the pH level is 2.5. Thus the jute apron is to be developed with pest resistant vinegar.

But if you take a solution that is 3:1 parts water and vinegar and then spray it on the anthill, then the ants will stay away. The process of fermentation takes place when bacteria break down the ethanol into acetic acid. Generally, vinegar is sold after it goes through a process of pasteurization. Vinegar is also used as an organic pesticides. If you have pesky pest that is absurd to remove by hand and you want to use a product which is eco friendly. There are lots of uses for vinegar in the garden. From getting rid of pest to keeping away pests, there is a role for it in your farm. Thus, shows that Vinegar is one of the best ingredients to make a pest .It is effective in repelling pest in farms and agricultural, So, the jute apron helps the farmers to prevent themselves from pest and pesticides.

MATERIALS AND METHOD

FLOW CHART



MATERIALS AND METHODS

SELECTION OF RAW MATERIAL – FABRIC



PLATE-I

JUTE People are becoming increasingly interested in environmentally friendly and sustainable items as environmental awareness grows. Scientifically speaking, natural fibres are recyclable, biodegradable, and ultimately environmentally benign. These are all characteristics of natural fibres that jute, a natural material, possesses. The Ganges delta is where jute is primarily farmed, and Bangladesh produces the majority of the crop and fibres with the highest quality within this area. Jute also appears to be superior to all of those natural fibres in terms of shininess and toughness. Because jute fibre is biodegradable, items created from it are better for the environment than those made of synthetic fibres. Jute can contribute significantly to the economy despite the environmental concern, given the has been increased. Vitamin E, A, and C content is high in jute leaves. Inflammation-fighting properties of jute leaves are among their most well-known medicinal advantages.

SELECTION OF FINISHING

VINEGAR

Acetic acid is an aqueous solution, which is vinegar. A twofold fermentation is used to create vinegar, turning simple carbohydrates into ethanol with yeast and ethanol into acetic acid with acetic acid bacteria. Depending on the source ingredients, there are numerous vinegar varieties available. Balsamic vinegar and malt vinegar are two examples of the many kinds that are used as condiments or garnishes. It has a wide range of industrial and home purposes, including use as a cleanser, and is the mild acid that can be produced with the least difficulty. One of the most basic organic acids is acetic acid. "Organic" in this context refers to a chemical with carbon molecules. It is a naturally occurring substance that can be found in trace amounts in all types of plants, animals, and people. One of the few compounds with two common names is acetic acid. Both rely on its level of concentration. Concentrations up to 8% are referred to as vinegar. Concentrations greater than 8% are referred to as "acetic acid". It is a product when the concentration is low enough to be referred to as vinegar. Most common concentration for domestic vinegar is 5%. Food products are subject to FDA regulation in the United States. When the concentration is sufficient to be referred to as acetic acid, it is employed to eradicate a pest.

TRANSFORMATION OF JUTE INTO APRON

The following steps are used to transform the pre-prepared jute into an apron. The jute fabric is first laid out on a table, the apron pattern is drawn on a pattern sheet, the drafted pattern sheets are used to cut the jute fabric, and finally the jute material is stitched together to form an apron.



PLATE-II
Raw jute



PLATE –III
Laying of jute



PLATE -IV
Drafting and cutting of jute



PLATE -V
Stitching of jute material into apron



PLATE -VI
Stitched apron



PLATE -VII
Stitched apron

TREATING THE FABRIC WITH VINEGAR

SPRAYING METHOD

A spraying device is used to air-spray a work piece with a choice of coating as part of the finishing method known as spraying mangle. Different fabrics, dyes, prints, and other materials can have spraying coatings. The two primary tools utilised for industrial spraying are airbrushes and spray guns. Hence, Pest repellent vinegar is used to finish off the apron.



PLATE -VIII
Finishing the jute using vinegar

MATERIAL LIQUIDITY RATIO

Vinegar is an acidic substance because it contains acetic acid. The pH of the majority of vinegars is 2.5. One ounce of vinegar and three ounces of water should be put in a bottle and mixed. As a result, measure the solution now and allow it to spray. A technique for completing vinegar in the ideal 3:1 ratio.

MATERIAL LIQUIDITY RATIO =3:1

One meter jute material =0.65g

1meter=200ml

(Water =750, Vinegar=250)

MATERIAL LIQUIDITY RATIO

= MATERIAL: SOLUTION

=0.65g:200ml

TESTING AND EVALUATION

QUALITATIVE ANALYSIS ANTI-PESTICIDE TEST

Anti-pesticides are substances that forbid the use of pesticides, which are chemical agents used to eradicate pests including dangerous insects, rodents, wild plants, and other undesirable creatures. During the 1960s, the insecticide DDT became a focal point of the expanding anti-pesticide movement. The nation's strictest anti-pesticide bill, according to the state, was approved. Anti-pesticide activists are those who simply oppose or attempt to restrict the usage of pesticides. defending against pests and pesticides.

Pesticides standards

- Malathon
- Diazinon

Methodology of anti-pesticide test

The insecticidal activity of the plant extracts net treated was investigated against two common stored product pests (Sitophilusoryzae and Sitophiluszeamais) as per the methods of Boussaada et al., 2008 and Kim et al., 2003 with some modification. Briefly, a dose of 2.5 mg of each plant extract in 400 µlMeOH was applied to wafer discs made of wheat (weight about 30 mg and 1 cm diameter). Permethrin at 2.0 mg/discs was used as a positive control, The discs were left under a fume hood to dry, and then, each disc was weighed before placement in the Petri dish for activity study. After drying, discs were placed in Petri dish (9 cm diameter) and then 10 adults of each either *S. oryzae* or *S. zeamais* were placed in the Petri dish, which was covered with a lid and kept at 29 ± 1 °C, 50–60% r.h., and a 16:8 light: dark cycle. Mortalities were determined by the number of dead adults at 5, 10, and 15 days after treatment. Test insects were considered dead if appendages did not move when prodded with a fine brush. Three replications were setup for each assay.

QUANTITATIVE ANALYSIS

The physical properties of the designed jute apron and its consequences were taken into consideration as the main factors in the questioner, which was prepared based on the use of the apron by farmers throughout the entire day. Also, various skin-related details were questioned.

RESULTAND DISCUSSION

QUALITATIVE ANALYSIS

ANTI-PESTICIDES ACTIVITY:

According to the fabrics,with the spray-coating method, the vinegar is implemented. Novel impregnation (vinegar) processes have undergone comprehensive evaluation. Tests for repellency were performed on treated samples and contrasted with controls. Excellent pest and pesticide repelling effectiveness has been demonstrated by treated samples of jute



PLATE -IX



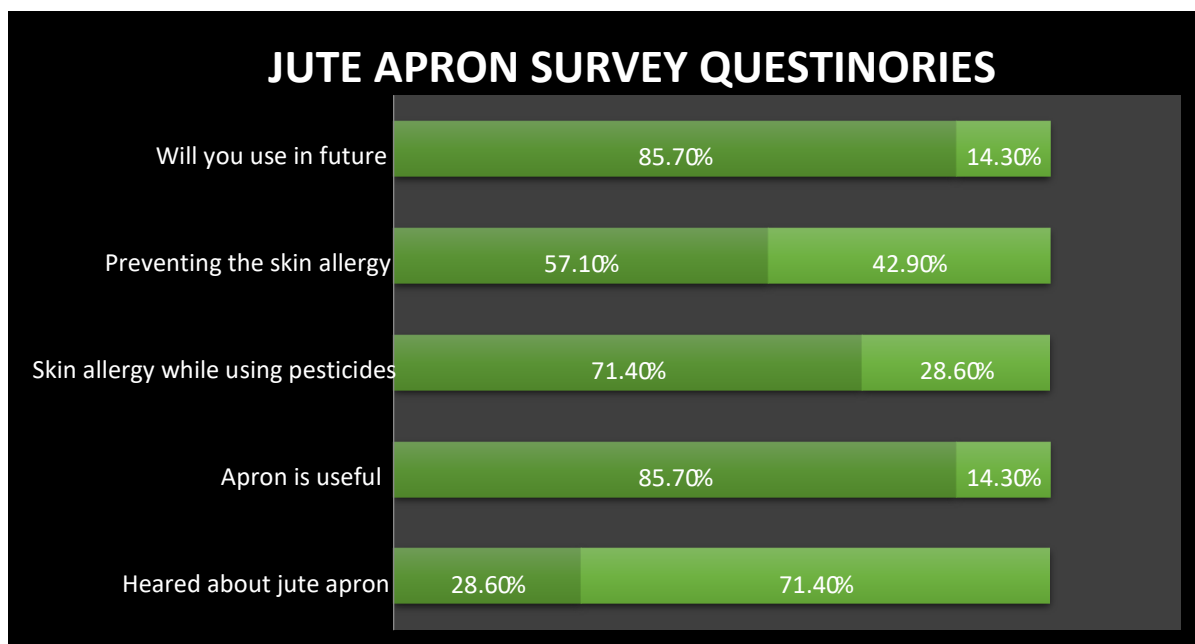
PLATE -X

TESTING THE VINEGAR FINISHED JUTE FABRIC WITH PEST

QUANTITATIVE ANALYSIS

JUTE APRON SURVEY QUESTINORIES: RESPONSE

S.NO	TOPIC	YES	NO
1.	HEARED ABOUT JUTE APRONS	28.60%	71.40%
2.	APRONS IS USEFUL	85.70%	14.30%
3.	SKIN ALLERGY WHILE USING PESTICIDE	71.40%	28.60%
4.	APRON PREVENTING SKIN ALLERGY	57.10%	42.90%
5.	WILL YOU USE IN FUTURE	85.70%	14.30%



COST OF THE DEVELOPED JUTE APRON

Jute fabric- Rs: 250/per Apron
 Vinegar - Rs: 50/per Apron
Total cost - Rs: 300/per Apron

The price per apron is Rs. 300 based on the estimated amount of raw materials used to create the jute apron. Compared to the farmer's medical costs for the skin allergy, it is less expensive. When made on large scale, the cost can be lowered and the production of apron can be done at minimum rate.

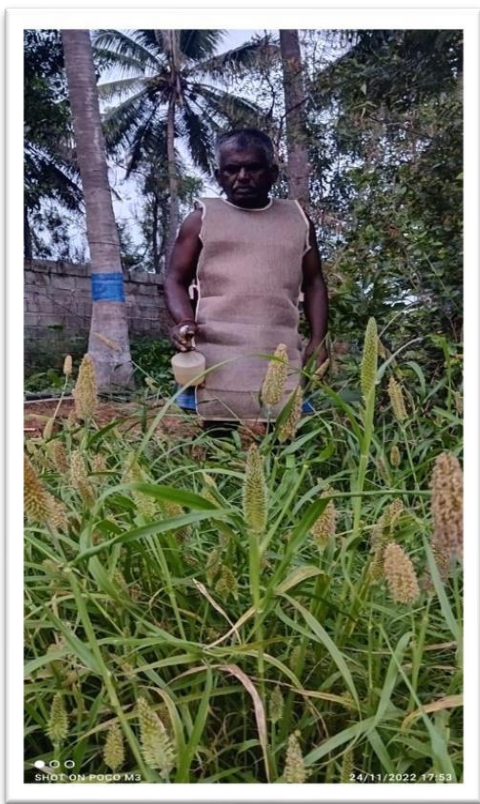


PLATE -XI



PLATE -XII

Farmers who use jute apron

SUMMARY AND CONCLUSION

The fact that farmers are mature and consider having skin issues "part of their job" means that they constantly go unnoticed and ignored. The skin is the largest organ in a mortal's body. It carries out a number of pivotal tasks. The germicide-convinced contact dermatoses that develop are also negative and prickly dermatoses. It's pivotal to honor the troubles and learn how to help illness or skin detriment. The farmers cover the front and back of their bodies [jute apron] over other apparel. Jute is an anti-bacterial fibre that's 100 percent biodegradable, anti-pesticide effective. Jute is also one of the most environmentally friendly fibres. one among the most well- liked. Farmers can protect themselves from pesticides and microbial agents by wearing a jute apron as a result.

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