

Vol 4 Issue 11 Aug 2015

ISSN No : 2249-894X

---

*Monthly Multidisciplinary  
Research Journal*

*Review Of  
Research Journal*

Chief Editors

---

**Ashok Yakkaldevi**  
A R Burla College, India

**Flávio de São Pedro Filho**  
Federal University of Rondonia, Brazil

**Ecaterina Patrascu**  
Spiru Haret University, Bucharest

**Kamani Perera**  
Regional Centre For Strategic Studies,  
Sri Lanka

## Welcome to Review Of Research

**RNI MAHMUL/2011/38595**

**ISSN No.2249-894X**

Review Of Research Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial Board readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

## Advisory Board

Flávio de São Pedro Filho Federal University of Rondonia, Brazil	Delia Serbescu Spiru Haret University, Bucharest, Romania	Mabel Miao Center for China and Globalization, China
Kamani Perera Regional Centre For Strategic Studies, Sri Lanka	Xiaohua Yang University of San Francisco, San Francisco	Ruth Wolf University Walla, Israel
Ecaterina Patrascu Spiru Haret University, Bucharest	Karina Xavier Massachusetts Institute of Technology (MIT), USA	Jie Hao University of Sydney, Australia
Fabricio Moraes de Almeida Federal University of Rondonia, Brazil	May Hongmei Gao Kennesaw State University, USA	Pei-Shan Kao Andrea University of Essex, United Kingdom
Anna Maria Constantinovici AL. I. Cuza University, Romania	Marc Fetscherin Rollins College, USA	Loredana Bosca Spiru Haret University, Romania
Romona Mihaila Spiru Haret University, Romania	Liu Chen Beijing Foreign Studies University, China	Ilie Pinte Spiru Haret University, Romania
Mahdi Moharrampour Islamic Azad University buinzahra Branch, Qazvin, Iran	Nimita Khanna Director, Isara Institute of Management, New Delhi	Govind P. Shinde Bharati Vidyapeeth School of Distance Education Center, Navi Mumbai
Titus Pop PhD, Partium Christian University, Oradea, Romania	Salve R. N. Department of Sociology, Shivaji University, Kolhapur	Sonal Singh Vikram University, Ujjain
J. K. VIJAYAKUMAR King Abdullah University of Science & Technology,Saudi Arabia.	P. Malyadri Government Degree College, Tandur, A.P.	Jayashree Patil-Dake MBA Department of Badruka College Commerce and Arts Post Graduate Centre (BCCAPGC),Kachiguda, Hyderabad
George - Calin SERITAN Postdoctoral Researcher Faculty of Philosophy and Socio-Political Sciences Al. I. Cuza University, Iasi	S. D. Sindkhedkar PSGVP Mandal's Arts, Science and Commerce College, Shahada [ M.S. ]	Maj. Dr. S. Bakhtiar Choudhary Director,Hyderabad AP India.
REZA KAFIPOUR Shiraz University of Medical Sciences Shiraz, Iran	Anurag Misra DBS College, Kanpur	AR. SARAVANAKUMARALAGAPPA UNIVERSITY, KARAIKUDI,TN
Rajendra Shendge Director, B.C.U.D. Solapur University, Solapur	C. D. Balaji Panimalar Engineering College, Chennai	V.MAHALAKSHMI Dean, Panimalar Engineering College
	Bhavana vivek patole PhD, Elphinstone college mumbai-32	S.KANNAN Ph.D , Annamalai University
	Awadhesh Kumar Shirotriya Secretary, Play India Play (Trust),Meerut (U.P.)	Kanwar Dinesh Singh Dept.English, Government Postgraduate College , solan
		More.....

Address:-Ashok Yakkaldevi 258/34, Raviwar Peth, Solapur - 413 005 Maharashtra, India  
Cell : 9595 359 435, Ph No: 02172372010 Email: ayisrj@yahoo.in Website: www.ror.isrj.org

## AN ECO-FRIENDLY HERBAL ANTIFUNGAL FINISH ON COTTON KNITTED FABRIC USING NEEM LEAVES EXTRACT.



**Shweta Sharma**  
Banasthali University, Rajasthan

### Co - Author Details:

**Himadri Ghosh**  
Banasthali University, Rajasthan



### ABSTRACT

The existence of Microorganism in nature and their damaging effect like deterioration and odor are some of the challenging situations for the woven, nonwoven, knitted and composite fabric industries. For the human being to work at their maximum level health and hygiene is the basic thing. Mostly chemicals are being used to make the fabric antifungal which is very harmful to the human body and environment. In order to give antifungal finish to the textiles an eco-friendly natural antifungal finish has been prepared from the plant extract for textile application. Neem leaves extract have been applied to the cotton knitted fabric by the padding mangle so

that even application of the finish can be applied. In the present study Neem leaves extract coated on cotton knitted fabric was found to be effective as antifungal finishing for textiles. The Neem leaves extract efficiently used as antifungal agent for the preparation of antifungal textile finish particularly for medical textiles. This study investigated that antifungal functionality of cotton knitted fabric coated with Neem leaves extract as value added textiles product.

**KEYWORDS :** *Neem Leave Extract, Padding Mangle, Antifungal.*

### INTRODUCTION :

Recent, interest in the use of natural herbs has been growing rapidly due to the toxic and allergic reactions of the synthetic products which are used on the fabric. Researches shows that synthetic dyes, medicine are suspected to release harmful chemicals that are carcinogenic, allergic and detoriate the human skin and human health. Neem is the natural herb which is very good for human health and do not harm the body. Neem leaves, barks, buds etc are very useful and well known for the skin disease. It is having antifungal properties the fabric made from the Neem leaves do beneficial for the treatment of skin disease.

The present study focus on the antifungal properties of Neem leaves when the paste of guar gum was prepared their was no fungus occurred in the paste. As gaur gum is cellulosic so funguses do occur in paste if it left over for half an hour only but when Neem extract was added fungus does not occur in the paste.

## 2. MATERIAL AND METHOD

Grey Cotton knitted fabric and gaur gums has been purchase from the local market of Jaipur and Neem leaves been collected and dry in a sunshade or in oven at the temperature of 55°C – 60°C.

### 2.1 Method

#### Maceration method

The leaves of Neem are been collected and dried under sunshade to remove the moisture from the leaves. The air dried leaves of Neem plant was made into the fine powder by grinding and followed by mixing with distill water and ethanol at the ratio of 50:50 in a beaker for the extraction process. The beaker was left closed for 7-8 days so that the ethanol and distill water takes up the active components of the leaves Stir the sample at the interval of time. After 7-8 days, filter it in the muslin cloth and ethanol and distill water was allowed to evaporate in the oven at the temperature of 55°C -60°C or evaporate in sunshade, to get the residue at the bottom

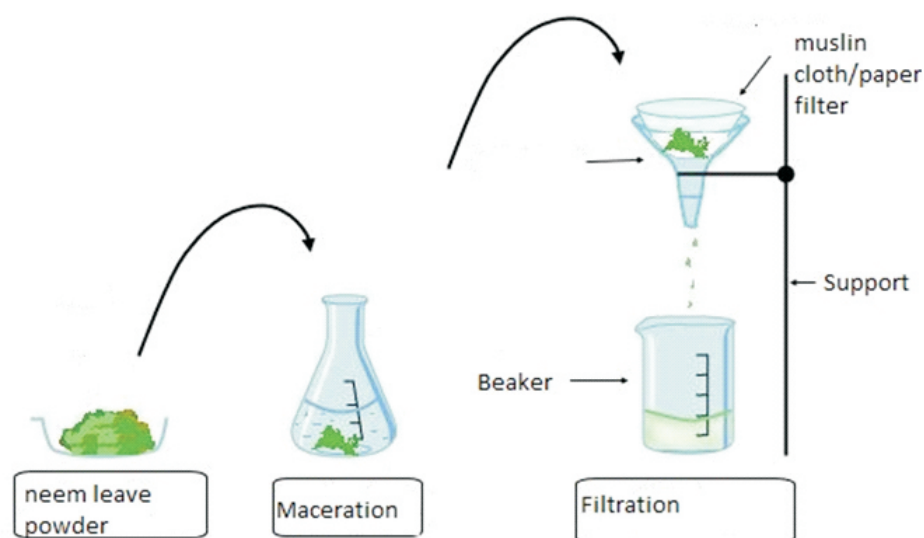


Figure no1 Maceration process.

This process should be repeated for 3-4 times. So that all the chemical compounds can come out. Use the waste for the manure purpose in the fields. Semi solid extract will be left it is dark brown in color and very sticky in nature.

#### 2.2 Preparation of the paste

10gms of gaur gum and 1 liters of water were taken to make a paste. Then add Neem leaves extract in the mixture mix it well and leave for 48 hrs, after 48 hrs it has been observed that no fungus has been formed in the mixture. As gaur gum is cellulose that why fungal does not appear in the mixture but after addition of Neem leave extract fungus do not appear in the mixture.



Figure no 2 paste of gaur gum and Neem leaves.

### 2.3 application on the cotton knitted fabric

Scouring is done to remove the impurities from the fabric and for the better application of the finish. Prepare the mixture of gaur gum and Neem leaves extract and apply on the fabric with the help of padding mangle and after application leave the fabric for drying after drying steam will be given. So that fixation of medicine should be there, and the complete penetration of medicine in the fabric. The only drawback of the application of medicine with the help of padding mangle was that it does not last for many washes. It with stand up to 15-20 washes only. With the help of padding mangle even penetration of medicine was there and the excess amounts do remove from the fabric.



Figure no 3. Application of finish on the fabric

### 3. RESULT AND DISCUSSION

It has been observed that Neem is having antifungal properties. When gaur gum paste is being prepared for any purpose if it leave for 1-2 hours the Microorganisms do act on it and pungent smell develop and it make the mixture or fabric deteriorate and odor but when the mixture was prepared with the help of Neem leaves extracts it has been develop that due to the antifungal properties of Neem the paste of gaur gum and Neem leaves extracts does not act by the microorganisms. Basically microorganisms do act on gaur gum because it is cellulosic, that's why microorganism does act on it.

### 4. CONCLUSION

It is conclude that Neem is having anti fungal properties and eco-friendly. With the help of Neem we can develop antifungal finish for the medical textiles there is only limitation that such direct



application method does not have wash durability it can stand up to 15- 20 washes only.if the fabric is single use application like sanitary pads, napkins, bandages etc which do not need to wash then we can adopt this technique.

#### REFERENCES

- 1.M P Sathianarayana, N V Bhat, S S Kokate and V E Walunj, Antibacterial finish for cotton fabric from herbal products, Indian journal of textile and fiber research 14 July 2009 Vol 35 pp 50-58.
- 2.Saranya Devi K, Sruthy.P.B, Anjana.J.C, J. Rathinamala and S. Jayashree, Study on antibacterial activity of natural dye from the bark of Araucaria Columnaris and its application in textile cotton fabrics, J. Microbiol. Biotech. Res., 2014, 4 (3):32-35, ISSN : 2231 –3168 CODEN (USA) : JM BRB4.
- 3.S.Mahesh, A.H. Manjunatha Reddy and G. Vijaya Kumar Studies on Antimicrobial Textile Finish Using Certain Plant Natural Products ,International Conference on Advances in Biotechnology and Pharmaceutical Sciences (ICABPS'2011) Bangkok Dec., 2011.
- 4.R. V. Adivarekar, N. Kanoongo, M. Nerurkar & N. Khurana, Application of Herbal Extracts for Antimicrobial Property ,[www.fiber2fashion .com](http://www.fiber2fashion.com)

# Publish Research Article International Level Multidisciplinary Research Journal For All Subjects

Dear Sir/Mam,

We invite unpublished Research Paper, Summary of Research Project, Theses, Books and Books Review for publication, you will be pleased to know that our journals are

## Associated and Indexed, India

- ★ Directory Of Research Journal Indexing
- ★ International Scientific Journal Consortium Scientific
- ★ OPEN J-GATE

## Associated and Indexed, USA

- DOAJ
- EBSCO
- Crossref DOI
- Index Copernicus
- Publication Index
- Academic Journal Database
- Contemporary Research Index
- Academic Paper Database
- Digital Journals Database
- Current Index to Scholarly Journals
- Elite Scientific Journal Archive
- Directory Of Academic Resources
- Scholar Journal Index
- Recent Science Index
- Scientific Resources Database

Review Of Research Journal  
258/34 Raviwar Peth Solapur-413005, Maharashtra  
Contact-9595359435  
E-Mail-ayisrj@yahoo.in/ayisrj2011@gmail.com  
Website : [www.ror.isrj.org](http://www.ror.isrj.org)