





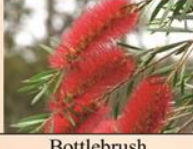
	Amla leaves (<i>Phyllanthus emblica</i>) perform as antimicrobial agent. It also performs as antiviral, antibacterial and antifungal properties.
Amla	
	Henna leaf (<i>Lawsonia inermis</i>) extracts have antimicrobial activity on the bacteria responsible for the common skin infections.
Henna leaf	
	Prickly safflower (<i>Achyranthes aspera</i>) is found to exhibit antimicrobial activity against the strains of <i>Staphylococcus aureus</i> and <i>E.coli</i> .
Prickly safflower	
	The curry leaf (<i>Murraya koenigii</i>) extract showed a broad spectrum of very significant antibacterial agent.
Curry leaf	
	Citronella (<i>Cymbopogon</i>) plant performs as an antimicrobial agent.
Citronella	
	Water extracts of black myrobalan (<i>Terminalia chebula</i>) showed significant antibacterial activity.
Myrobalan	

	Malabar nut (<i>Adhatoda vasica</i>) has the antibacterial activity against gram positive and gram negative bacteria.
Malabar nut	
	Bottlebrush (<i>Callistemon</i>), <i>Callistemon</i> leaves and flowers extract showed significant antibacterial activity
Bottlebrush	

Conclusion:

Uses of natural plant sources for functional finishes will be very good initiatives for finishing of textiles which is safe for the human beings. Environment friendly natural products for textile application are getting interest worldwide. The relatively lower incidence of adverse reactions occurring from natural sources coupled with their reduced cost can be exploited as an attractive eco-friendly alternative to synthetic agents for textile wet processing.

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Natural Plant Sources for Antimicrobial Finishes on Textiles



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Antimicrobial textiles have attracted a great deal of interest in recent years due to their potential for reducing the transmission of infection in medical and healthcare environments. Antimicrobial properties can also improve the performance and lifespan of consumer products, and so these fabrics are increasingly finding applications in the wider textile and apparel industry. These industries continuously searches for new technologies in order to accomplish the consumer demands. Further, consumer's attitude towards hygiene and active lifestyle has created a rapidly increasing market for a wide range of textile products finished with antimicrobial properties, which in turn has stimulated intensive research and development. This finish prevents the growth of bacterial and products finished in it have been proved environment friendly, health protecting and preventing diseases. Various functional finishes can be incorporated into the fabric by application of plant extracts. Such functional finishes are-

- Anti-microbial
- Anti-allergic
- Anti-itching

- Anti-septic
- Anti-fungal
- Anti-bacterial

Necessity of Antimicrobial Finishes

Antimicrobial treatment on textile materials is necessary for the following reasons:

- To prevent growth of microorganisms.
- To arrest metabolism in microbes in order to reduce the formation of odour.
- To protect from viral and fungal infections caused by pathogenic bacteria.
- To safeguard the textile products from staining, discolouration and quality deterioration.

Preparation of plant extracts

- Soak a known quantity of the plant source powder in distilled water and in ethanol (70:30) for 24 hours.
- Centrifuge and filter the supernatants.

Preparation of fabric for application of green extracts:

➤ Desizing:

- For desizing, mix sodium hydroxide and detergent with water.
- Immerse the fabric and heated up to 40°C.
- Later, remove the fabric wash properly and shade dried.

Method of application: Two methods can be used to apply green extracts on fabric.




➤ Direct method:


- Immerge the desized fabric in the antimicrobial stock solution containing cross linking agent for one hour and after that shade dried.

➤ Pad-dry-cure method:

- Immerse the pre-treated fabric in the antimicrobial stock solution containing cross linking agent for ten minutes and passthrough pneumatic padding mangle.
- Later, the fabric should be shade dried and cured for 3 minutes at 140°C.

Some plant sources for antimicrobial finishes:-

	Tulsi (<i>Ocimum basilicum</i>) could be a valuable topical antimicrobial agent for management of skin infections caused by major pathogens like <i>S.aureus</i> , <i>P. aeruginosa</i> and <i>E.coli</i> .
	Neem (<i>Azadirachta indica</i>) is an effective antibacterial agent against the bacterial pathogen <i>V. vulnificus</i> .
	The phytochemicals from guphool (<i>Lantana camara</i>) have a broad antimicrobial spectrum and might be a novel source of antimicrobial drugs.

	Leaf extract of Datura (<i>Datura fastuosa</i>) shows strong antimicrobial activity against bacterial species like <i>Bacillus thuringiensis</i> , and <i>Pseudomonas aeruginosa</i> .
	The methanol extracts of leaves, flowers, stem and root barks of kharpaat (<i>Cassia alata linn</i>) showed a broad spectrum of antibacterial activity.
	Haldi (<i>Curcuma longa</i>) rhizome has been traditionally used as antimicrobial agent as well as an insect repellent. It is also broadly used as antibacterial, antiviral, antifungal and antimalarial activities.
	Aloe vera (<i>Aloe barbadensis</i>) has potent antibacterial, antifungal, and antiviral properties.
	Peppermint (<i>Mentha</i>) oil and menthol have moderate antibacterial effects against both Gram-positive and Gram-negative bacteria. It is also found to possess antiviral and fungicidal activities.