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ANTIBACTERIAL ACTIVITY OF AYURVEDIC DISINFECTANT SPRAY

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ABSTRACT

With an aim to minimize the usage of chemicals or disinfectants to cleanse the environment, efforts were made to devise an Ayurvedic Disinfectant Spray using herbs having an appreciable fragrance. The present study was carried out to focuses on preparation and evaluation of natural Ayurvedic Disinfectant Spray for cleansing the environment. The antimicrobial activity of the prepared Ayurvedic Disinfectant Spray was checked and it was found that it can be a potential source for disinfection in various hospitals and labs etc.

KEYWORDS: Ayurvedic Disinfectant Spray, Environment, Fragrance.

INTRODUCTION

The environment has been a major concern in today's era. The constant pollution all around has gathered the attention of many people. Microbial load of the air causes various airborne diseases. Numerous efforts are being taken to cleanse the air in a number of ways. Various chemicals are available in the market for the same. But the side effects and the impact of them on living organisms cannot be ignored. Bearing in mind the consequences of chemical substances and with an aim to cleanse the environment, an attempt was made to utilize herbal products to cleanse the air in a particular area and to create a positive atmosphere with the help of its appreciable fragrance. Therefore, the current research focuses on the development of a natural Ayurvedic Disinfectant Spray, which can be effectively used for reducing the count of aero microflora. This Ayurvedic disinfectant Spray is prepared from extremely economical sources and has a pleasant smell. It can serve as an alternative to the usage of

chemicals for disinfection of air in various areas such as households, hospitals, washrooms, etc.

Aim

To evaluate in vitro Antibacterial activity of Ayurvedic disinfectant spray.

MATERIALS AND METHODS

Materials

All the plant powders were procured from local market and they were authenticated by Botanist, then used for the preparation. All ingredients were mixed and spray was prepared by using simple distillation process.

Table 1: Details of ingredients.

Sr. NO.	Drug name	Latin name	Family	Quantity
1	*Vacha*	Acorus calamus	Acoraceae	10gm
2	*Chandan*	Santalum album	Santalaceae	10gm
3	*Sweta Sarshapa*	Sinapsis alba	Cruciferae	10gm
4	*Kushta*	Saussurea lappa	Asteraceae	10gm
5	*Sariva*	Hemidesmus indicus	Asclepiadaceae	10gm
6	*Guggul*	Commiphora mukul	Bursearceae	10gm
7	*Neem*	Azadiracta indica	Meliaceae	15gm
8	*Musta*	Cyperus rotundus	Cyperaceae	10gm
9	*Tulsi*	Ocimum sanctum	Laminaceae	10gm
10	*Ushir*	Vetivera zizaniodes	Graminae	10gm
11	*Karpur*	Cinnamomum camphora	Lauraceae	10gm
12	*Tagar*	Valeriana wallichii	Apocynaceae	10gm

Methods

Method of preparation of spray

All ingredients were soaked overnight in 10 times water. All this material was transferred to round bottom flask of distillation apparatus. Distillation Apparatus was assembled with condensing tubes. Temperature was at 100^{o} C. after 15-20 mins of distillation procedure distilled material was collected in sterile flask.

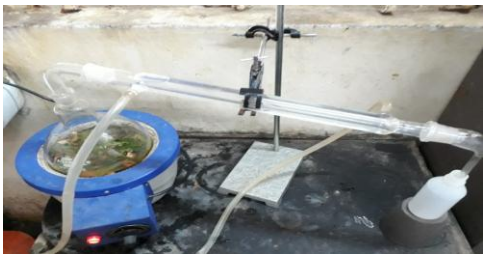


Fig. no.1: Showing process of distillation.

Air microbiological tests

Muller Hinton Agar plates were exposed to various environments (Research Lab, OPD, IPD) in duplicates. One set was exposed to Ayurvedic Disinfectant Spray and other set was unexposed to Ayurvedic Disinfectant Spray. After 24 hrs of incubation at 37^{o} C for Muller Hinton Agar Plates, the following results were obtained:

OBSERVATIONS AND RESULTS

From Table No. 2 and figure No. 2 and 3 it could be observed that on exposure of plates, consisting of various aero microflora, to the Ayurvedic Disinfectant Spray which was prepared according to the above-mentioned procedure, growth of most of the aerial micro-organisms was inhibited. While Muller Hinton agar plate exposed for aero-mycological investigations revealed significant decrease in the colony count after using Ayurvedic Disinfectant Spray.

Table 2: Statistics of microbiological study.

Sr. No.	Plates exposed to media used	No. of colonies before exposure to Ayurvedic Disinfectant Spray	No. of colonies after exposure to Ayurvedic Disinfectant Spray
1	Research Lab	9	3
2	IPD	15	7
3	OPD	17	9

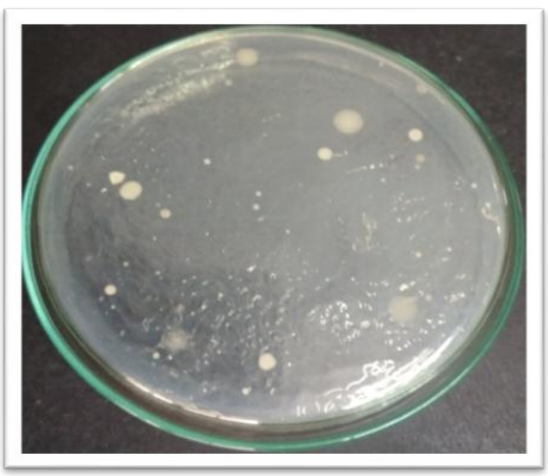


Fig. no. 2

Before spray

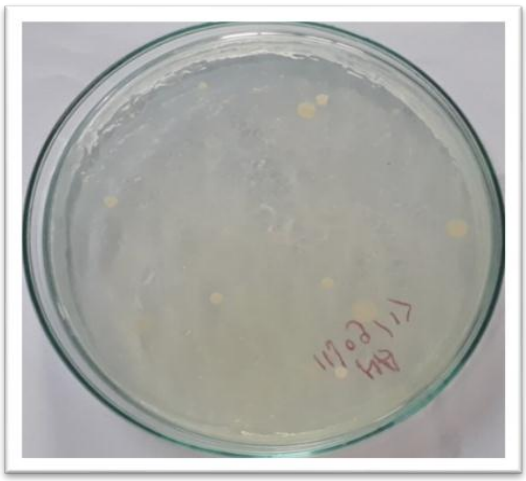
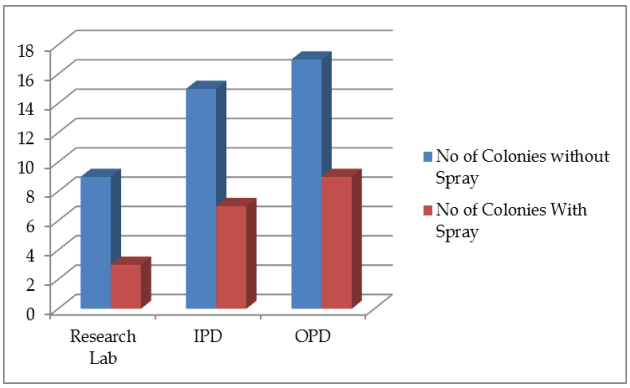


Fig. no.3

After spray

Graph



Thus, all the exposed plates, were almost clear with negligible count of colonies. This can help us in predicting the antimicrobial activity of this Ayurvedic Disinfectant Spray. In Figure 9, on mere observation with the naked eye, it is evident that the Ayurvedic Disinfectant Spray showed greater antimicrobial activity on bacteria as well as fungus.

Thus, with the use of these various herbal drugs, an attempt was made to develop an extremely feasible and easy to use herbal formulation which can minimize the use of potentially harmful and toxic chemicals or aerosols used for disinfection.

CONCLUSION

The current work focuses on preparation and evaluation of natural and herbal spray for cleansing the environment. From the above results it is evident that this spray can cleanse the environment and can be a potential and efficacious source of disinfection in various areas. Thus, instead of using chemical sources and the harmful UV rays for disinfection in hospitals, laboratories this herbal spray having defined quality and which is prepared from well accessible and affordable sources can be used.

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