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SURVEY OF MEDICINAL PLANTS FOUND IN MUZAFFARPUR, BIHAR

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ABSTRACT

Since the beginning of healthcare, people have taken advantage of the healing properties of various plants. There have been investigations conducted all around the world to determine their usefulness, and some of the findings have resulted in the development of medications that are derived from plants. The annual market value of medical plant products is estimated to be over one hundred billion dollars worldwide. The function, contributions, and usefulness of medicinal plants in the fight against diseases of public health relevance are the topics of discussion in this paper. A particular emphasis is placed on the many strategic methods that are now being used to prevent disease. The 'high-risk' strategy is contrasted with the 'whole population' strategy in this discussion. This article highlights the efficacy of the common-factor approach as a technique of involving other health promoters in the dissemination of the values associated with medicinal plants. The five fundamental tenets of the Primary Health Care (PHC) method are used as a framework for conducting additional research on the role that medicinal plants play in the avoidance of prevalent diseases. Medicinal plants provide essential functions in disease prevention, and the promotion and utilization of these plants is compatible with every prevention strategy currently in existence. during the planning and execution of these strategies, concerted efforts are required to correctly identify, acknowledge, and place medicinal plants in their appropriate contexts. In the field of

medicinal plants, these different techniques present a number of interesting and new perspectives. In order to better strategize the future place and function that medicinal plants will play in disease prevention, some recommendations have been offered.

Keywords: Medicinal, Plants, Muzaffarpur, Bihar

INTRODUCTION

Traditional forms of medicine have long made use of the properties of many plants. A extremely rich variety of ecosystems may be found across the subcontinent of India thanks to the plant diversity that exists there. There are approximately 2,000 plant species that are alluded to in published research, out of the several thousand plant species that have been found to possess therapeutic characteristics. According to the website it is believed that over 8,000 plant species are employed in the Indian system of medicine, and that approximately 25,000 plant species are effective based on the formulations used in folk medicine. According to estimates provided by the World Health Organization, around eighty percent of the world's population obtains their primary medical treatment from substances derived from plants. The global market for herbal and traditional medicine is currently worth roughly US$ 60 billion per year and is expanding at a rate of 7%. The market for herbal drugs in India is estimated to be around 644.63 billion rupees, and it has the potential to grow to 3,000 billion rupees by the year 2006. The depletion of plant resources was brought on by the increasing demand for plant-based medicines, health goods, and pharmaceuticals, among other things. Because of this, there needs to be an immediate focus on the protection and sustainable usage of medicinal herbs. In recent years, there has been a remarkable growth in the consumption of natural foods as well as the usage of dietary supplements.

This trend may be attributed to two factors: a rising consumer demand in healthy living and an increasing discontent with contemporary medicine. The purpose of these investigations is to compile a list of the many ethnomedical applications of plants that are practised in the Srivaikundam hamlet located in the Tuticorin area. Of this neighbourhood, human life and culture have been related with and influenced by the natural environment in this neighbourhood, either directly or indirectly. As a result of people consuming the leaves, tubers, and fruits of terrestrial forest plants as well as using plant pharmaceuticals as medicine, there is a significant amount of room for research into the field of ethnobotany. The Srivaikundam people live in the Tuticorin district of Tamil Nadu. The goal of this project is to create a documentation of the plants that are used by these people and to raise awareness

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among the local communities about the strategies that can be used to preserve these valuable genetic resources.

Growing numbers of people are becoming interested in the medicinal properties of many plants. This is because there is reason to believe that they could provide a natural defence against the development of certain disorders as well as a potential therapy for certain ailments (Tahraoui et al., 2007). Studies of ethnobotany are becoming increasingly helpful in the process of developing programmes for both health care and environmental preservation (Nadembega et al., 2011; Wright et al, 2007; Tahraoui et al., 2007). The importance of environmentally friendly medications is rapidly growing, as is their appeal. Both ethnopharmacology and ethnobotany have been significant in the development of several key medications that are derived from plants. Knowledge gleaned from ethnopharmacology can serve as a compass for studies on vegetal products.

At the same time, it has the potential to make a contribution to the development of innovative pharmaceuticals by providing unique chemical structures and/or mechanisms of action. Both medications generated from plants and crude plants are subject to the same pharmaco-economic test, which is increasingly significant for the development of novel synthetic drugs (De Smet, 1997). Because of the growing interest throughout the world in determining the therapeutic potential of herbal medicine, we decided to do research on grasslands that contain plants that have the potential to be utilised in medicine, particularly herbs that are used to treat a variety of human conditions.

A comprehensive analysis of the distribution and abundance of target species is essential for the environmentally responsible harvesting of wild medicinal plant populations (Nkomo et al., 2014). Numerous medicinal plants are grown all over the world in a variety of countries and are put to use everywhere they are found. On the other hand, only a small percentage are cultivated. According to AguilarSten and Moe (2007), the conservation of these plants necessitates making efforts that are focused on essential habitats. These efforts should be aimed toward secondary forests, disturbed regions, and agricultural landscapes.

Medicinal plants that are found growing in semi-natural and natural ecosystems are a valuable commodity because they are an inexpensive resource. The quality of herbs that grow naturally is rarely higher than that of those that are cultivated, but the acceptance of the latter among consumers is higher. Our research is an inventory of medicinal plants that were found

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in the mountain hay fields located in the Gurghiului Mountains region. The information that was acquired is the preliminary data that is necessary in preparation for an upcoming phytochemical inquiry on the plants that are utilised the most.

Iran has a long history of medicinal practise and the traditional study of plant-based treatments. Because the country is comprised of such a vast variety of temperatures and geographical regions, it has led to a wide dispersion of species of medicinal plants. However, each tribe makes use of its own unique plants and adheres to its own unique traditions. The province of Hamedan is located in an elevation area with the 'Alvand' mountains, which are part of the Zagros mountain range, which runs from the North-West to the South-West, and it has a cold, mountainous climate with snowfall in the winter.

The expansive plains of Hamedan, which are located in the north and north-east of the province, are shaped by the persistent presence of high winds for virtually the entire year. During the winter, it is not uncommon to experience prolonged periods of heavy snowfall, which can last for up to two months. It is widely known that Hamedan is home to one of the earliest civilizations in all of Iran. It has a stellar reputation in the field of traditional medicine and has been one of the most important providers of medicinal plants for a long time. The contribution that the medical plant sources provide to the general welfare of the people in certain nations, such as Iran, is the primary reason for the significance of medicinal plant sources for the population there.

In addition, medicinal plants are thought to be rich sources of components that can be utilised in the creation of new drugs as well as the synthesis of existing ones. They imply that there is a bright future ahead for research purposes due to the fact that there are approximately half a million plants all over the planet and many of them have not been explored yet. Additionally, plants have been shown to play a significant part in the evolution of human societies all over the world. The field of study known as ethnobotany examines how native plant species are utilised by the people of a specific culture and geographic area.

Ethnobotanists investigate the ways in which people use plants for a variety of purposes, including food, housing, medicine, clothing, hunting, and religious rituals. In the past, the Traditional Medicine and Material Medica Research Center, also known as the TMRC, has carried out a number of ethnobotanical studies in order to investigate the various ways in which residents of the Iranian provinces of Kohgiluye va Boyer Ahmad, Azarbayjan-e-

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Sharghi, and Golestan make use of medicinal plants. The purpose of this research was to evaluate the ethnobotanical knowledge of medicinal plants that are utilised by people in two different villages located in Hamedan, Iran.

OBJECTIVE

1. To Study On The Medicinal Plants Found In Muzaffarpur, Bihar
2. To Study On The The World Health Organization, Around Eighty Percent

REVIEW OF LITERATURE

Anand S. P (2016) In the Vadachennimalai Hill area of the Salem district of Tamil Nadu, India, an ethnobotanical study was carried out to collect information on the medicinal plants that the local people use. Seventy different species of medicinal plants from 61 different genera and thirty-six different families are covered in this compilation. There have been as many as eight different species of medicinal plants identified as belonging to the Euphorbiaceae family. In addition, there are three different species of Euphorbia and two different species each of the genera Acacia, Albizia, Ficus, Ocimum, Phyllanthus, Solanum, and Zizyphus. In total, there are seventy different species. The majority of the time, the herbs were used to treat ailments such as fever, the common cold, cough, asthma, rheumatism, jaundice, ulcers, headache, stomach problem, diarrhoea, diabetes, wounds, skin problem, plies, and so on. As a result, the results of this effort will also contribute to the hunt for new medications and therapies. The medicinal plants that the people who live in Vadachennimalai utilise, together with the plant parts that are used and the ethnomedicinal importance of those parts, have been listed.

El-Mehdi El-Assri (2021) The Pre-Rif region of Morocco is distinguished for the wealth of its horticultural resources, in particular its fragrant and medicinal plant species. Due to the therapeutic qualities that medicinal plants provide, these plants are utilised in the treatment of many diseases. On the other hand, not enough research has been done on the region, notably about its plant life. The ethnobotanical study that is being carried out in the province of Taounate (Pre-rif of Morocco) aims to collect information on the medicinal and aromatic plants that are used in phytotherapy so that a floristic inventory of the region can be drawn up, and it also aims to highlight this plant heritage.

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Saikat Sen (2013) An inquiry of the traditional usage of medicinal plants by the tribes of Tripura's West and South districts was carried out as part of an ethno-medicinal study. The goal of this research was to bring to light the traditional knowledge of these medicinal plants. This article explains the various functions that plants serve in their primary healthcare system and gives information about those functions. The Indian state of Tripura is located in the northeastern area of the country and is considered to be a part of both the Himalayan and Indo-Burma biodiversity regions. It is a veritable treasure trove of medicinal plants, many of which have a long history of usage in the traditional medical practises of indigenous peoples. Tripura is home to nineteen distinct tribes, each of which relies heavily on the state's natural resources. In this study, the authors identified 113 medicinal plant species hailing from 56 different families.

Sharmila Somasundaram (2019) A study on the diversity of medicinal plants was conducted at Vellalar College for Women in Thindal, which is located in the Erode District of Tamil Nadu, India. This survey was carried out based on the participatory observations that were collected as well as field visits to each location across our college's campus. During the course of the survey visit, a total of 89 species of medicinal plants belonging to 70 genera were discovered. The primary objective of this survey is to compile information regarding the medicinal plants that are found on our university's campus in order to protect the valuable bioresources that are found there.

Silvia Oroian (2019) The purpose of this research was to determine the medicinal and aromatic plants that grow in the mountain hay meadows (6520 - a Natura 2000 habitat) of the Gurghiului Mountains, as well as to examine the correlation between these medicinal herbs and the therapeutic compounds they contain, as well as the human diseases that they can be used to treat therapeutically. The Gurghiului Mountains were the focus of this particular research endeavour. In terms of its flora, this region is distinguished by the prevalence of forest ecosystems, in addition to semi-natural mountainous meadows. The floristic inventory for the area that was researched comprised a great number of medicinal plants that contained chemical compounds that were therapeutic.

RESEARCH METHODOLOGY

The plants were examined alongside the voucher specimens in order to determine their identities, and the totals of each plant were tallied. The city of Muzaffarpur has a latitude that

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ranges from 10 degrees 10 minutes north to 10 degrees 39 minutes north, and a longitude that ranges from 79 degrees 47 minutes east to 79 degrees 56 minutes east. The study region has an average annual precipitation of 810 millimetres. The mean maximum temperature for the year is 34.4 degrees Celsius, and the mean yearly low temperature is 24.4 degrees Celsius.

DATA ANALYSIS AND RESULT

In India, medicinal plants have been utilised for centuries to cure a broad variety of illnesses, and many of these treatments are still practised today. Antifungal and antibacterial screening was performed on a total of 48 extracts from 12 distinct Indian medicinal plants. These extracts included leaf aqueous extract, leaf ethanolic extract, flower aqueous extract, and flower ethanolic extract. Extracts of medicinal plants were tested for their ability to inhibit the growth of fungi using the agar-incorporation method, and extracts were tested for their ability to inhibit the growth of bacteria with the disc diffusion method. The bacteria Bacillus subtilis, Escherichia coli, and Enterobacter aerogens, as well as the fungus Aspergillus flavus, Aspergillus parasiticus, Fusarium oxysporum, and Helminthosporium oryzae. Staphylococcus aureus was used in the test to determine whether the antibacterial activity was present. The varied concentrations of aqueous and ethanolic extracts that were used for the investigation were 2.5 percent, five percent, and ten percent, respectively.

ANTIMICROBIAL ACTIVITY OF MEDICINAL PLANTS

Annona squamosa

At a concentration of 10.0%, the aqueous leaf extract of the medicinal plant Annona squamosa (Annonaceae) inhibited the growth of the fungus A. parasiticus by a factor of 100%, while the same concentration only inhibited the growth of A. flavus and F. oxysporum by a factor of 50% each. However, the growth of H. oryzae was not affected by any of the concentrations. It was discovered that even at the lowest concentration of 2.5%, none of the four fungus were susceptible to the treatment. At a concentration of 10.0% of the extract, the ethanolic leaf extract inhibited the growth of the fungi A. flavus, A. parasiticus, and H. oryzae by a factor of 100%; however, the growth of F. oxysporum was only inhibited by a factor of 75% at the same concentration. Even at the lowest concentration of 2.5%, A. jlavus was only inhibited by 25%, whereas.

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Argemone mexicana

The aqueous leaf extract of Argemone mexicana (Papaveraceae) demonstrated a 100% inhibition of the growth of the fungus A. flavus, a 75% inhibition of the growth of both H. oryzae and. parasiticus, and a 50% inhibition of the growth of F. oxysporum. Even at the lowest concentrations, the bacterium A. parasiticus was resistant to treatment. F. oxysporum and H. oryzae were the pathogens. At a concentration of 10%, the ethanolic leaf extract was able to inhibit the growth of A. flavus and F. oxysporum by 75%. Both A. parasiticus and H. oryzae were inhibited at a rate of 50% when the same concentration was used. The lower doses were not as effective in combating A. flavus, A. parasiticus, and H. oryzae as higher quantities were. At the highest dosage of 10.0%, the aqueous flower extract demonstrated a 100% suppression of H. oryzae, a 75% inhibition of A. parasiticus, and a 50% inhibition of A. flavus. At any of the concentrations, there was absolutely no inhibitory impact that could be shown on F. oxysporum.

Azadirachta indica

The aqueous leaf extract of Argemone mexicana (Papaveraceae) demonstrated a 100% inhibition of the growth of the fungus A. flavus, a 75% inhibition of the growth of both H. oryzae and. parasiticus, and a 50% inhibition of the growth of F. oxysporum. Even at the lowest concentrations, the bacterium A. parasiticus was resistant to treatment. F. oxysporum and H. oryzae were the pathogens. At a concentration of 10%, the ethanolic leaf extract was able to inhibit the growth of A. flavus and F. oxysporum by 75%. Both A. parasiticus and H. oryzae were inhibited at a rate of 50% when the same concentration was used. The lower doses were not as effective in combating A. flavus, A. parasiticus, and H. oryzae as higher quantities were. At the highest dosage of 10.0%, the aqueous flower extract demonstrated a 100% suppression of H.

Caralluma umbellata

At a concentration of 10%, the aqueous leaf extract of the medicinal plant Caralluma umbellata (Asclepediaceae) inhibited fungal growth by a factor of 100% for Aspergillus parasiticus, Fusarium oxysporum, and Hericium oryzae, but only by a factor of 50% for Aspergillus flavus. Even at the lowest concentration, none of the four fungi were affected. At a concentration of 10%, the ethanolic leaf extract demonstrated a suppression of fungal

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growth that was 100% effective against F. oxysporum and H. oryzae, 75% effective against A. flavus, and 50% effective against A. parasiticus. Even at the lowest concentration of 2.5%, the growth of all four fungus was unaffected by the substance. At a concentration of 10%, the aqueous flower extract completely inhibited the growth of Aspergillus flavus, Aspergillus parasiticus, and Fusarium oxysporum; however, it only inhibited the growth of Histoplasma oryzae by 50%.

DETERMINATION OF MINIMUM INHIBITORY CONCENTRATION (MIC)

Fusarium oxysporum

When Fusariuin oxysporum was given an aqueous extract of Annona squamosa's leaves and flowers, the results were positive. The levels of amylase enzyme in Cassia alata and Lepidagathis cristata were reduced by more than 90 percent compared to the control. When Fusarium oxysporum was treated with aqueous leaf and flower extracts of Argemone mexicana, Caralluma umbellata, and Euphorbia splendens, the cellulase enzyme was reduced by more than 90 percent compared to the control. After treatment with aqueous extracts of the leaves and flowers of Annona squamosa, Argemone mexicana, Euphorbia splendens, and Plumeria rubra on Fusarium oxysporum, the protease enzyme level dropped by more than 80 percent compared to the control.

Table 4. 1 Antifungal activity of Annona squamosa

Plant part	Fungal species	Control a	Control b	Fungal growth inhibition					
				Aqueous extract (%)			Ethanolic extract (%)		
				2.5	5.0	10.0	2.5	5.0	10.0
Leaf	*Aspergillus flavus*	+++	-	+++	+++	++	+++	++	-
	Aspergillus parasiticus	+++	-	+++	++	-	++	+	-
	Fusarium oxysporum	+++	-	+++	++	++	+++	+++	+
	Helminthosporium oryzae	+++	-	+++	+++	+++	+++	++	-
Flower	*Aspergillus flavus*	+++	-	+++	+++	+	+++	++	-
	Aspergillus parasiticus	+++	-	+++	+++	+++	+++	+++	++
	Fusarium oxysporum	+++	-	+++	+++	++	+++	++	-
	Helminthosporium oryzae	+++	-	+++	++	-	+++	++	-

Table 4. 2 Antibacterial activity of Annona squamosa

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Plant part	Bacterial species	Control a	Control b	Diameter of bacterial inhibition zone (mm)					
				Aqueous extract (%)			Ethanolic extract (%)		
				2.5	5.0	10.0	2.5.0	5.0	10.0
Leaf	*Bacillus subtilis*	*	3.0 mm	3.17±0.15	6.27±0.25	10.27±0.25	*	4.23±0.21	7.43±0.40
	Escherichia coli	*	3.0 mm	2.57±0.60	5.27±0.25	10.30±0.30	2.53±0.25	6.43±0.40	13.43±0.40
	Enterobacter aerogens	*	3.0 mm	2.10±0.10	4.17±0.15	8.23±0.21	*	3.53±0.06	7.10±0.10
	Staphylococcus aureus	*	3.0 mm	*	*	3.23±0.25	*	4.17±0.15	6.43±0.06
Flower	*Bacillus subtilis*	*	3.0 mm	2.17±0.29	5.20±0.17	10.17±0.15	*	7.27±0.25	15.10±0.10
	Escherichia coli	*	3.0 mm	4.07±0.06	12.10±0.10	18.13±0.12	*	5.27±0.25	10.30±0.30
	Enterobacter aerogens	*	3.0 mm	*	3.70±0.06	6.17±0.15	2.10±0.10	4.10±0.10	8.50±0.44
	Staphylococcus aureus	*	3.0 mm	*	2.13±0.15	6.23±0.25	*	*	2.13±0.15

Table 4. 3 Antifungal activity of argemone mexicana

Plant part	Fungal species	Control a	Control b	Fungal growth inhibition					
				Aqueous extract (%)			Ethanolic extract (%)		
				2.5	5.0	10.0	2.5	5.0	10.0
Leaf	*Aspergillus flavus*	++++	-	+++	++	-	++++	++++	+
	Aspergillus parasiticus	++++	-	++++	+++	+	++++	+++	++
	Fusarium oxysporum	++++	-	++++	++++	++	+++	++	+
	Helminthosporium oryzae	++++	-	++++	+++	+	++++	++++	++
Flower	*Aspergillus flavus*	++++	-	++++	+++	++	+++	++	-
	Aspergillus parasiticus	++++	-	++++	+++	+	++++	++++	+
	Fusarium oxysporum	++++	-	++++	++++	++++	+++	++	-
	Helminthosporium oryzae	++++	-	+++	++	-	++++	+++	+

Table 4. 4 Antibacterial activity of argemone mexicana

Plant part	Bacterial species	Control a	Control b	Diameter of bacterial inhibition zone (mm)					
				Aqueous extract (%)			Ethanolic extract (%)		
				2.5	5.0	10.0	2.5	5.0	10.0
Leaf	*Bacillus subtilis*	*	3.0 mm	4.33±0.58	8.33±0.58	16.00±1.00	1.67±0.58	10.83±0.76	15.50±0.50
	Escherichia coli	*	3.0 mm	3.43±0.40	7.00±0.87	14.33±1.26	2.17±0.29	3.50±0.70	7.97±0.47
	Enterobacter aerogens	*	3.0 mm	3.43±0.40	9.50±0.50	19.33±058	6.50±0.50	14.67±0.58	18.00±050
	Staphylococcus aureus	*	3.0 mm	*	2.50±0.87	4.67±0.29	1.33±0.58	4.33±0.29	7.83±0.47
Flower	*Bacillus subtilis*	*	3.0 mm	2.50±0.50	6.80±1.33	11.67±0.58	3.60±0.53	10.00±1.00	13.50±0.50
	Escherichia coli	*	3.0 mm	*	2.83±0.76	4.17±0.76	*	5.50±0.50	11.33±0.58
	Enterobacter aerogens	*	3.0 mm	*	2.63±0.15	5.63±0.57	2.20±0.44	4.60±0.66	8.27±0.64
	Staphylococcus aureus	*	3.0 mm	*	3.87±0.23	8.40±0.72	2.33±0.15	3.60±0.53	7.87±0.40

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Table 4. 5 Antifungal activity of azadirachta indica

Plant part	Fungal species	Control a	Control b	Fungal growth inhibition					
				Aqueous extract (%)			Ethanolic extract (%)		
				2.5	5.0	10.0	2.5	5.0	10.0
Leaf	*Aspergillus flavus*	++++	-	+++	++	-	++	+	-
	Aspergillus parasiticus	++++	-	++++	+++	+	++	+	-
	Fusarium oxysporum	++++	-	++++	++	+	+++	++	-
	Helminthosporium oryzae	++++	-	+++	++	-	++	+	-
Flower	*Aspergillus flavus*	++++	-	+++	+	-	++	+	-
	Aspergillus parasiticus	++++	-	++++	+++	+	++	+	-
	Fusarium oxysporum	++++	-	++	++	+	++++	+	+
	Helminthosporium oryzae	++++	-	++	++	+	+++	+	-

DISCUSSION

It has been established by the World Health Organization that traditional medicines, which are mostly derived from a variety of plant species, are meeting the medical requirements of a significant number of people living in the rural regions of developing countries (Chan, 2003 and Kong et al, 2003). Numerous plant extracts can act as antibacterial agents, in addition to serving the needs of the health industry.

Antimicrobial activity of medicinal plants

Aspergillus flaviis

The antifungal activity of plant extracts was investigated in this particular study, as was the response of fungi to the extracts in terms of their growth. At a concentration of 10 mg/ml, it was discovered that the growth of A. flavus was completely stopped by the following substances: Annona squamosa ethanolic leaf extract, Argemone mexicana aqueous leaf extract and ethanolic flower extract, Azadirachta indica aqueous leaf and flower extract and ethanolic leaf and flower extract, Caralluma umbellata aqueous flower extract, Cassia alata Gloriosa superba aqueous flower and ethanolic flower extracts, Leonotis napetaefolia aqueous leaf and flower extracts, Euphorbia splendens aqueous leaf and flower extracts, and ethanolic leaf and flower extracts are all included in this mixture. Extracts of the aqueous flower and ethanolic leaves of the Lepidagathis cristata plant, extracts of the aqueous flower and ethanolic leaves of the Piper longum plant, and extracts of the aqueous leaves and

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flowers of the Plumeria rubra plant. It has been reported that an extract of the leaves of Andrographis paniculata at a concentration of 10 mg/ml was able to suppress the growth of Aspergillus flavus (Kumar and Prasad, 1992).

Aspergillus parasiticus

At a concentration of 10 mg/ml, the growth of A. parasiticus was completely inhibited by the aqueous leaf extract of Annona squamosa, the ethanolic flower extract of Azadirachta indica, the aqueous leaf and flower extract and the ethanolic flower extract of Caralluma umbellata, the ethanolic flower extract of Cassia alata, the aqueous leaf and ethanolic flower extracts of Euphor It has been observed that the flower extracts of the plants Euphorbia splendens and Leonotis nepetaefolia have anti-fungal effect against A. parasiticus. In the instance of Euphorbia splendens and Leonotis nepetaefolia, A. parasiticus showed a growth suppression of 75% at a dosage of 15 mg/ml (Abubacker and Ramanathan, 2003). Cugcnol, an antioxidant, was found by Jayashree and Subramanyan (2000) to limit aflatoxin production. This was accomplished by reducing lipid peroxidation as well as phases in the aflatoxin manufacturing process that involve the mycelial development of A.

Fusarium oxysporum

At a concentration of 10 mg/ml, an ethanolic flower extract of Annona squamosa and Argemone mexicana, an ethanolic leaf extract of Azadirachta indica, an aqueous leaf, flower extract and an ethanolic leaf extract of Caralluma umbellata, an ethanolic flower extract of Cassia alata, and an ethanolic leaf extract of Caralluma umbellata all inhibited the extract of the leaves, made from ethanol, of the Cestrum nocturnum plant ethanolic flower extract of L. cristata, as well as aqueous and ethanolic leaf extracts of Piper longum and Plunieria nibra, and ethanolic flower extract of L. cristata. There are various publications concerning the anti-flingal impact of plant extracts Allium sativum 25 mg/ml, which decreased spore development in Fusarium oxysporum, Fusarium lini, Fusarium semitectum, and Fusarium udum. According to Singh et al. (1990) and Garg and Jain (1998), applying a 1:50 dilution of Curcuma caesia extract to F. psidi has an anti-fungal effect. Benkeblia (2004) found that the essential oil from onion and garlic has anti-fungal effect against F.oxysporum at concentrations ranging from 300 to 500 millilitres per one.

Helminthophobia oryzae

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At a concentration of 10 mg/ml, the growth of Helminthophobia oryzae was completely inhibited by aqueous leaf extracts of Azadirachta indica, Caralluma umbellata, and ethanolic leaf extracts of Annona squamosa and Azadirachta indica. Cassia alata, Caralluma umbellata, Gloriosa superba, L. cristata, aqueous floral extracts of Annona squamosa, Argemone mexicana. Gloriosa superba, ethanolic flower extract oi Annona squamosa, Azadirachta indica. It has been reported that Madhuca butryracea oil, which contains saponins as a by-product, had anti-fungal activity against Helminthosporium oryzae at concentrations ranging from 500 to 2000 ppm (Lalitha and Venkataraman, 1991). At a dilution of 80 percent, Srivastava and Sirvastava (1998) found that Helminthosporium sanctum and Tageter erecta were both inhibited. According to the findings of this study, aqueous and ethanolic floral extracts, as well as ethanolic leaf extracts, both at a concentration of 10% are efficient anti-flingal agents against Helminthosporium oryzae.

Bacillus siibtilis

With the aqueous and ethanolic leaf extracts of the Azadirachta indica plant, Bacillus subtilis growth was suppressed to a maximum of 20.40 0.46 (mm) and 18.53 0.21 (mm) respectively. This was measured in millimetres. It was found that the aqueous flower extract of Lepidagathis cristata measured 15.07 0.06 millimetres, while the ethanoHc flower extract of Amiona squamosa measured 15.10 0.10 millimetres. It was discovered that a 1:50 dilution of the essential oil extracted from the rhizome of the Curcuma caesia plant was able to suppress the growth of Bacillus subtilis to a size of 15 mm (Garg and Jain, 1998). The chloroform and methanoHc extracts of dried leaves of Acalypha indica revealed an inhibitory zone of 0.7 cm and 1.2 cm respectively for Bacillus subtilis for chloroform leaf extract and for methanolic leaf extract, respectively (Gopalakrishnan et al, 2000).

CONCLUSION

Since the beginning of civilization, people have recognised the potential of some plants to treat illness and have used those plants for medical purposes. India is home to one of the world's most significant, extensive, and varied cultural traditions that is connected to the utilisation of medicinal herbs. The growth of the industry was further hampered by the lack of disclosure and secrecy that surrounded many of the herbal and medicinal concoctions that were used traditionally and have healing capabilities. There has been a significant uptick in people's curiosity with herbal remedies and remedies made from plants all over the world.

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According to estimates provided by the World Health Organization (WHO), over 80 percent of the population in underdeveloped nations relies on traditional medicines, the majority of which are derived from plants, to meet their primary healthcare requirements. Growing understanding of the benefits of natural products—including their non-narcotic nature, absence of harmful side effects, and easy accessibility at reasonable prices—is driving an uptick in the market for medicinal plants in both developing countries and industrialised nations.

REFERENCES

1. Allen, O. N. 1953. Experiments in Soil Bacteriology, Burgess Publishing Co., Minneapolis, Minn., USA, pp. 65-70.
2. Arya, A. 1991. Production of pectolytic and cellulolytic enzymes by four pathogenic species of Phomopsis. Adv. Plant Sci. 4 (2): 304-309.
3. Ashwani koul, Subhash, C. G and Vandana, S. 2005. Pitfalls in journey from traditional to modem medicine. Nat. Prod. Rad. 4(1): 6-13.
4. Balandrin, M. F., Klocke, J. A., Wurtele, E. S and Bollinger, W. H. 1985. Natural plant chemicals: Sources of industrial and medicinal materials. Science, 228: 1154-1160.
5. Basha, S and Ulaganathan, K. 2002. Antagonism of Bacillus species (Strain BC 121) towards Curvularia htnata. Curr. Sci. 82 (12): 1457- 1463.
6. Benkeblia, N. 2004. Antimicrobial activity of essential oil extracts of various onions {Allium cepa) and gariic (Allium sativum).' Lebensm.Wiss.Technol.37:263-268.
7. Bonjar, S. 2004. Evaluation of antibacterial properties of some medicinal plants used in Iran. Journal of Ethnopharamacology, 94: 301-305.
8. Bothast, R.J and Hesseltine, C.W. 1975. Bright greenish yellow fluorescence and aflatoxin in agricultural commodities. Appl. Microbiol. 30: 337-338.
9. Castello, M. C, Phatak, A., Chandra, N and Sharon, M. 2002. Antimicrobial activity of crude extracts from plant parts and corresponding calli of Bixa orellana L. Ind. J. Exp. Biol. 40: 1387-1381.

10. Cavangh, F. 1963. Analytical microbiology. Academic Press Inc. New York.

11. Chan, K. 2003. Some aspects of toxic contaminants in herbal medicine. Chemosphere, 52: 1361-1371.

12. Chatterjee, T., Ghosh, C and Raychaudary, P. 1991. Aromatic plants of medicinal use. Indian Drugs, 28(1): 430-432.