Introduction

Herbs are nature's gift and include root, stem, leaf, flower, fruit, seed and bark. Our ancestors have used herbs successfully for many years, and we too are using them today. Herbal medicine is the most ancient form of heath care known to man. Herbs have been used in all cultures ever since historical records were kept. From the last few decades Their is excessive use of allopathic medicine , and it can cause adverse effect on human body; even they can imbalance the physical and physiological activity .So, that to solve this problem we can use the herbs directly, after the screening on human pathogenic bacteria. The use of herbs and medicinal plants as the first medicines is a universal phenomenon. Every culture on earth, through written or oral tradition, has relied on the vast variety of natural chemistry found in healing plants for their therapeutic properties**.**

Throughout the ages human have relied on nature for their basic needs for the production of foodstuff, shelters, clothing, means of transportation, fertilizers, flavors and fragrance and not least, medicines. Plants have formed the basis of sophisticated traditional system of medicines .The first records, written on clay tablets in cuneiform are form Mesopotamia and date from about 2600 BC. Among the substance which they used were oils of *Cedars* species (cedar), *Cupressus sempervirens (*cypress), *Glycyrrihza glabra* (licorice), *Commiphora* sps *(*myrrh) and *Papaver somniferum* (Poppy juice), all of which are still used for the treatment of ailment ranging from cough and cold to parasitic infections and inflammation. Egyptian pharmaceutical record is the "*Ebers papyrus*" dating from 1500 BC. This document has 700 drugs and their formula, such as gargles snuffs, poultices, infusions, pills and ointment with beer, milk, wine and honey being commonly used. The Chinese' 'Materia medica' has been extensively documented over the centuries with the first record dating from about 1100 BC (Wa Shi Bing Fang containing 52 prescriptions) followed by works such as the Shennong Herbal (100 BC: 365 drugs) and the Tang Herbal (659 AD; 850 drugs)

In India **Dhanvantari** is considered as the God of medicine (the Ayurvedic branch) in the Hindu mythology. Lord Vishnu told at the time of the churning that **Dhanvantari** would also teach the science of Ayurveda in India.

Thus in present investigation some important desert medicinal plants was selected and was screened for their antimicrobial activities on human pathogenic bacteria. The purpose of this investigation is to detect the preliminary investigation of antibacterial activity which can be easily observed as they produce zone of inhibition on a lawn of bacteria

- **Introduction of Test microorganism**:

For testing antimicrobial activities of medicinal plants three pathogenic bacteria are selected. The bacteria was procured form microbial type culture collection (MTCC), and gene bank, Institute of Microbial Technology, (IMTECH), and Chandigarh. The selected Bacteria are:

1. *Escherichia coli*

Escherich who was the first to describe the colon bacillus under the name *Bacterium coli* communae (1885). Based on minor differences in biochemical characteristics, mutability of the biochemical properties in this group, they have all been included in *Escherichia coli*, which is further subdivided into biotypes and serotypes. *Escherichia coli* is usually motile with peritrichous flagella and often fimbriate. They are lactose fermenter and produces pink colonies on MacConkeyAgar.

Cultural characteristics

Pathogenesis and pathogenicity

The virulence factors of pathogenesis strains of *E. coli* include capsules, endotoxin, and structures responsible for colonization, enterotoxins and other secreted substances.

Capsular polysaccharides

These are produced from *E coli* strains. Capsular material, which is weakly antigenic, also interferes with the antibacterial effectiveness of the complement system.

Endotoxin- a lipopolysaccharie (LPS) components of the cell wall of Gram-negative organism, is released on death of the bacteria. It is composed of a lipid moiety. The role of the LPS in disease production includes pyrogenic activity, endothelial damage leading to disseminate intravascular coagulation and endotoxic shock. These effects are of greatest significance in speticamemic disease.

- **Fimbrial adhensis**- these are present on many enterotoxigenic strains of *E coli* which allow attachment to muscosal surface in the small intestine and in lower urinary tract.
- **Verotoxin,** (VT) are similar structurally, functionally and antigenically to the Shiga toxin of Shigella dysenteriae.
- **Two types of cytotoxic necrotizing factors**, CNF1 strains of *E coli* isolated from case of diarrhoea, specticaeman and urinary tract infections in animal and man.
- **Alpha-haemolysin,** although often a useful marker for virulence in certain strains of *E coli.* , does not appear to contribute directly to their virulence but is closely linked with the expression of other virulence factors.

Drug susceptibility

E coli *commonly sourced multiple drug resistance to test antibiotic sensitivity Chloramphenicol showed highest inhibitory zone against this bacteria.*

2. *Pseudomonas aeruginosa*

Classification

Cultural characteristics

Infection

Pseudomonas aeruginosa causes a wide range of opportunistic infection. Although predisposing factors are associated with the occurrence of many of these infections, some species such as farmed mink appear to be

particularly, susceptible to be organism (Long *et.al.* 1980). *Pseudomonas aeruginosa* occurs sporadically in ranched mink with mortality rates up to 50% in some outbreaks.

Some pigments produced by *Pseudomonas aeruginosa*

-Pycocyanin (blue green)

-Pyoverdin (greenish – yellow)

-Pyroubin (red)

-Pyomelanin (brownish-black)

Pathogenesis and pathogenicity-

Pathogenic strain of *Pseudomonas aeruginosa* produce a variety of toxins and enzymes which promote tissue invasions and damage. Attachment to host cells is mediated by fimbriae. Tissue damage is caused by toxins such as exotoxin A, phospholipase C and proteases. Exotoxins A are a bipartite toxin with binding and active components. The host defense mechanism against *Pseudomonas aeruginosa* include opsonizing antibiodies and phagocytosis by macrophages.

Drug scesseptbility

Pseudomonas aeruginosa exhibit resistanct to many antibiotic and can develope new resistance after exposer to antimicrobial agents. However, combination of Gentamycin and Carboncillin can be very effective.

3**. *Salmonella typhi***

Classification

In 1880, Eberth described *Typhoid bacillus* and Gaffky isolated the bacteria in 1884. It came to know as Eberth Gaffky or *Eberthella typhi*. Salmon and Smit (1885) discovered causative agent of hog chlorea (*Salmonella cholereasis*) it is known as *Salmonella typhi*. The genus name was name as proposed by Theobald smit and accepted by international committee (Deb.1982)

Cultural characteristics

Pathogencity

They are strict parasites of man. The infection takes place through water, contaminated food etc. The infected person passes the organism through urine and stool. Typhoid fever is an infection of the lymphatic system and tissue. The disease begins with the invasion of the mucosal epithelium and rapid movement of the pathogens to lymphoid tissues associated with the gastro-intestinal tract. The invading pathogen multiply in lymphoid tissue, move to blood and spread through the body. Blood culture remains positive for only a

short period as the bacilli become localized in various types of tissue. The typical “Typhoid symptoms of headache, fever, malaise, spleen enlargement and constipetation results from necrosis of lymphoid tissue and liver”

Drug susceptibility

The *Salmonella* is susceptible to Ampicillin and Chloramphenicol .In 1972 in Mexico it was seen that some strains of *Salmonella typhi* are resistant to Ampicillin.

The combination of the trimethoprim-sulphamethoxazole proved effective against *Salmonella*. Ampicillin, not Chlramphenicol is the drug of choice in treatment of chronic *Salmonella typhi* carriers without gall bladder disease (Gutpa, 1986).

4. *Streptococcus mutans*

Classification

Test	**Result**
Colony c Colony characters	Circular pin head,convex,entire, translusant,colorless on nutrient agar
Flagella stain	Negative
Gram stain	Positive
Motility	Negative

Pigment production	Negative

Clark (1924) , first describe *Streptococcus mutans* isolated from carious lesions , but later on Fitz gearld and keyes (1960) isolated *S.mutans* and showed that this bacterium initiate carries.

Cultural characters

Pathogencity

The human oral cavity is initiated by bacteria dental caries which are the most common form of harm caused by oral pathogen, *S.mutans* is the leading cause of dental caries, causing gum diseases due to rapid metabolism of bacteria *S.mutans* producing substantial amount of organic acid such as lactic acid, The acid degrade the enamel of teeth causing lesions which eventually lead to caries, the acid produces will attack the surrounding tissues, causing gum diseases, such as periodontal disease (Gingivities).

Drug susceptibility

Fluoride treatment is way to stop the dental caries. Fluoride ion from the solution on toothpaste becomes incorporated into enamel of each tooth making the tooth more resistant to erosion of acid and low pH. Oxytetracycline is very effective in treating these bacteria.

5. *Staphylococcus aureus*

Classification

Cultural characters

Pathogenesis and pathogenicity-

Staphylococcus are pyogenic bacteria, they cause supportive lesions.

Coagulate - conversion of fibrinogen to fibrin. Fibrin deposition may shield staphylococci from phagocytic cells.

Lipase, esterage etc. - enzymes that contribute to virulence.

Protein A - surface component, which binds Fc portion of IgG and inhibits opsonization.

Leukocidin- Cytolytic destruction of phagocytes of some animal species

Alpha-toxin - The major toxin in gangrenous mastitis. It causes spasm of smooth muscle and is necrotizing and potentially lethal.

Beta-toxin-Heat-stable toxins associated with staphylococcus food poisoning in man

Toxic shock syndrome-induce excessive lymphocyte production, resulting in tissue damage. Bovine and human strains of *S.aureus produce TSST-1*.

Drug susceptibility

Staphylococcus is originally sensitive to sulphonamide, penicillin and other antibiotics but they developed drug resistance. *Staphylococcus* is resistance to penicillin is due to production of an inducible enzymes Penicillninase which inactivates penicillin. Important antibiotic, which inhibit the growth of bacteria, is Oxy tetracycline.

Review of Research

International and National status

Gehlot & Bohra,'(2000) reported toxic effect of various plant part extracts on the casual organism of typhoid fever. Causal organism of candidiasis in human beings 'has also been controlled by plant extract Gehlot & Bohra 1999, 2000). Antifungal and antibacterial substances have been found in a number of plants, and it is possible that in some cases such compounds present in tissues, provide protection against certain pathogenic organisms. Leaf extracts of several plant species have been reported in controlling Salmonella typhi by Gehlot & Bohra (2000). Sepncer et.al., (1979) reported antifungal substance from the stem of young seedings of Vicia feba variety, green windser, which inhibited the growth of Aspergillus niger and Botrytis cinerea seeded over the surface of nutrient in petridishes, while the extract prepared from leaves showed no inhibition (Shekhawat& Prasad, 1971). Gehlot & Bohra (1999) reported some root extracts in controlling the plant pathogen Macrophomina phaseolina. Fagonia cretica. Tribulus terrestris, Ocimum americannum, Calotropis procera and Euphorbia antiquorum were among few effective plants. Similarly the stem extracts of twenty-five arid zone plants against leaf blight pathogen of moth bean were also reported for their antifungal properties by Gehlot & Bohra (1999). Extracts of Halophytic plant species Tamarix aphylla, , Haloxylon species and Atriplex lentiformis in controlling the fungal pathogen Alternaria solani was reported by Gehlot & Bhora (1997).

Development of body resistance or immunity against infection has also been reported after the treatment with Abutilon indicum and Sida cordifolia, as evidenced by enhanced production of anti S. typhi “0” antibody and protection against tissue damage by Brekhman and Dordymon, (1969). Ocimum sanctum and Withania somnifera were reported to posses healing potential against external afflictions. To promote the union of fractured bony fragments a number of vitamins minerals and hormones have been employed with ungrantifying results. When *Ocimum sanclum and Withania somnifera* were tried the period of immobilization was sustainally reduced. Radiological union was observed around 4 week with *Ocimum sanctum* and *Withania somnifera* (4.1 ± 0.21 and 4.2 ±0.05 respectively) as compared to control value of 6.5 ± 0.22 weeks (Saxena, *et.al.*, 1989). A study was conducted on male healthy rabbits by Dixit, *el al.* (1979) to asess the immunological response of *Abutilon indicum, Sida*

rhombifolia, S. cordifolia and S. veronicaefolia. The study showed that the most effective drug in prolonging the life span and preventing the tissue damage of the animals against virulent *Staphylococcus aureus* was Abitulon indicum & than *Sida cordifolia* and *Sida rhombifolia,* while *Sida veronicaefolia* was least effective in this respect. Antistress activity of *Ocimum sanctum* plant dried powder in rats and mice has reported by Bhargave & Singh (1981).

Hepatoprotective activity of *Boerhaevia diffusa* has been reported by Dey (1993). Similarly root powder of *Boerhavia repends* showed 100 percent and 90 percent therapeutic efficacy against leucorrhoea and spermatorrhea respectively, fed at 500 mg dose twice/day for 15 days.

The root powder also showed curative efficacy against helminthes cases in children and adults at doses of 250 mg and 500 mg/day for 5 day respectively. The efficiency was 90 percent in children and 100 percent in adults (Singh, 1991). *Curcuma longa* and its derivative curcumin besies lowering the serum cholesterol and blood sugar level, also acts as antioxidant to scavenge serum peroxide to prevent atherosclerotic changes (Handa, *etal.* 1992). Ethyl ether and ethanol extracts of different parts of arid zone plants viz. *Citrulus colcocynthis, Corchonis depresses, Fagonia cretica* and *Lycium harharum* were tested for their antimicrobial activity against *Staphylococcus aureus. Escherichia coli* and *Candida albicans* by *Harsh, el. al* (1982). Antibacterial effect of *Leptadenia pyrotechnica* and fern leaves was also reported by Gehlot & Bohra (1995). Al-Ismail & Talal-Aburjai 2003 reported effect of water and alcohol extracts of some plants as antioxidants and antimicrobial on long-term storage of anhydrous butterfat. Evaluation of the antiviral and antimicrobial activities of triterpenes isolated from Euphorbia segetalis by Madureira et.al. (2003). Mustafa 2003 studied Antimicrobial activities of stinging nettle and fenugreek seeds extracts (in vitro). Nwafo (2003) reported In vivo interaction between ciprofloxacin hydrochloride and the pulp of unripe plantain (Musa paradisiaca), Antidiarrheal and antimicrobial activities of bark and leaf extracts of Xylocarpus granatum

Significance of the study:

Medicinal products of plant could prove useful in minimizing the adverse effects of various chemotherapeutic agents as well as in prolonging longevity and attaining positive general health . The increasing global interest in the medicinal potential of plants during the last few decades is therefore quite logical. Global attention has been shiftedtowards finding new chemicals, specifically herbals, for the development of new drugs. These natural products can provide unique elements of molecular diversity and biological functionality, which is indispensable for novel drug discovery

.The increasing prevalence of multidrug resistant strains of bacteria and the recent appearance of strains with reduced susceptibility to antibiotics raises the spectre of untreatable bacterial infections and adds urgency to the search for new infection-fighting strategies.

Introduction of Plants

1. *Abutilon indicum*
2. *Aloe vera*
3. *Amaranthus hybrdisa*
4. *Asparagus Racemosus*
5. *Barleria prionitis*
6. *Boerhavia diffusa L.*
7. *Datura Stramonium*
8. *Euphorbia hirta*
9. *Tephrosia purpurea*
10. *Tribulus terrestris*

1. Aloe vera

Family Name : Liliaceae

Botanical Name : *Aloe Vera*

Common Name : Aloe, Barbados Aloe, Curacao Aloe, Indian Aloe, Ghi Kunvar

Part Used : Flowers, Roots

Habitat : South and South Western India.

Uses :It is useful for X ray burns, Dermatitis, Cutaneous and disorders of skin. Drug from juice is tonic and is used in jaundice, ameneorrhoea, atonic and piles. Aloe Vera Gel has the remarkable ability to heal wounds, ulcer and burns.

2. Asparagus Racemosus

Family Name : Liliaceae

Botanical Name : *Asparagus Racemosus*

Common Name : Asparagus, Wild Asparagus, Asparagus Root, Satavari

Part Used : Tuberous Roots

Uses : The roots are bitter, sweet, emollient, cooling, nervine, tonic, constipating, opthalimic, anobyne, aphrodisiac. They are useful in nervous disorders, dyspepsia, tumours, scalding of urine, throat infections, tuberclosis, cough bronchitis and general debility.

3. Abutilon indicum

Family Name: Malvaceae

Botanical Name: *Abutilon indicum*

Common Name : , Indian Mallow , *Atibalaa (Sanskrit)*

Part Used: whole plant

Habitat: Is present trophical and sub-trophical region , also found in western Rajasthan

Uses: In traditional medicine, *A. indicum* various parts of the plant are used as a demulcent, aphrodisiac, laxative, diuretic, sedative, astringent, expectorant, tonic, anti-inflammatory, anthelmintic, and analgesic and to treat leprosy, ulcers, headaches, gonorrhea, and bladder infection.[4] The whole plant is uprooted, dried and is powdered. In ancient days, maidens were made to consume a spoonful of this powder with a spoonful of honey, once in a day, for 6 months until the day of marriage, for safe and quick pregnancy.The plant is very much used in Siddha medicines. The root, bark, flowers, leaves and seeds are all used for medicinal purposes by Tamils] The leaves are used as adjunct to medicines used for pile complaints. The flowers are used to increase semen in men. β-Sitosterol is present in *A. indicum*

3 . Datura Stramonium

Family Name : Salanaceae

Botanical Name : *Datura Stramonium*

Common Name : Datura, Jimson Weed, Stink Weed, Mad Apple, Thorn Apple Stramonium, Apple Thorn, Datura Tatula, Datura Seeds

Part Used : Seeds, Flowers, Leaves

Habitat : Common in north western Himalayas and foot hills on dry slopes upto 1800 m altitude.

Uses : It is Narcotic, Anti Spasmodic, Anodyne, Ache Reliever. Helps in relieving the spasm of the Bronchitis in Asthma. It is used in treatment of Parkinsonism and Haemorrhoids. Young fruits are sedative and intoxicating. Leaves applied after roasting are useful in relieving pain.

4. Tribulus terrestris

Tribulus Terrestris Family Name : Zygophyllaceae

Botanical Name : *Tribulus terrestris*

Common Name : Land Caltrops, Puncture Vine, Gokhru

Part Used : Whole Plant, Seeds

Uses : The roots and fruits are sweet, coling, emollient, appetizer, alternate, laxative, cardiotonic, styptic, lithontriptic and tonic. They are useful in strangury, dysuria, vitiated conditions of vat and pitta, renal and vesical calculi, anorexia, dyspepsia, helminthiasis, cough, asthama. The seeds are astringent, strengthening and are useful in epistaxis, hemorrhages and ulcerative stomatitis. The ash of the whole plant is good for external application in rheumarthritis.

6. Barleria prionitis

Family Name: Acanthaceae

Botanical Name: *Barleria prionitis*

Common Name: (Sanskrit *kuranta*; Marathi *vjradanti* (**वज्रदंती**), Tamil: **Part**

also known as the porcupine flower.

Used: It is used for various medicinal purposes in Ayurvedic medicine Its leaves are known to contain 6-Hydroxyflavone, one of the chemical compounds that is a noncompetitive inhibitor of the protein cytochrome

Habitat: native to India and present in trophical and sub-trophical region, also found in western Rajasthan

Uses: The juice of the leaves is applied to feet to prevent maceration and cracking in the monsoon season

***7 . Boerhavia diffusa** L.*

Family Name Nyctaginaceae

Botanical Name: *Boerhavia diffusa L.*

Common Name:*Punarnava*

Used: Whole plant

Habitat: *Boerhavia diffusa* has a pantropical distribution in western Rajasthan and northern part of the India

Uses: In India *Boerhavia diffusa* is a very popular medicinal plant, called 'Punarnava'; especially the roots, leaves and seeds are used and the root is listed in the Indian Pharmacopoeia. Plant parts are applied as a stomachic, cardiotonic, hepatoprotective, laxative, diuretic, anthelmintic, febrifuge, expectorant and, in higher doses, as an emetic and purgative. As a diuretic it is useful in strangury, jaundice, enlarged spleen, gonorrhoea and other internal inflammations. In moderate doses it is successful in asthma. A decoction of the roots is also applied to corneal ulcers and to treat night blindness.

8. *Tephrosia purpurea*

Family Name: Fabaceae

Botanical Name: *Tephrosia purpurea*

Common Name: *Sarphonk, Sharpunkha, Masa*

Used: whole plant

Habitat: *Tephrosia purpurea* is a species of flowering plant in the pea family, Fabaceae, that has a pantropical distribution. It is a common wasteland weed. In many parts it is under cultivation as green manure crop. It is found throughout India

Uses: Used as a fish poison; the leaves and seeds contain tephrosin, which paralyzes fish. Larger doses are lethal to fish, but mammals and amphibians are unaffected. It is also used traditionally as folk medicine. According to Ayurveda, the plant is anthelmintic, alexiteric, alterative, and antipyretic; it is used in the treatment of leprosy, ulcers, asthma, and tumors, as well as diseases of the liver, spleen, heart, and blood. A decoction of the roots is given indyspepsia, diarrhea, rheumatism, asthma and urinary disorders.

9 . Euphorbia hirta

Family Name: Euphorbeaceae

Botanical Name: *Euphorbia hirta*

Common Name: baridhudi, dudh ghas, dudhi

Used: whole plant

Habitat: *Euphorbia hirta* is a pantropical weed, possibly native to India. It is a hairy herb that grows in open grasslands, roadsides and pathways. It is widely used as a medicinal herb in most places it grows.

Uses: *Euphorbia Hirta* has been known to keep the body temperature under control and helps to keep the body cool. It cures the thirsty feeling often faced by people and increases body resistance. It also keeps the body strong. The herb has the potential to cure dengue.

10. Amaranthus

Family :*Amaranthaceae*

Botanical name : *Amaranthus hybridus,*

Common name : commonly called smooth amaranth, smooth pigweed, red amaranth, or slim amaranth,

Habitat : It is a species of annual flowering plant. It is a weedy species found now over much of Rajasthan and its surrounding areas. It is extremely variable, and many other *Amaranthus* species are believed to be natural hybridizations or derive from *A. hybridus*

Research Methodology

Collections and identification of Plant materials

The herbs was collected from various areas from different cities and their identity was confirmed through literature as well as from herbarium sheets and voucher specimen in the Department of Botany, Jai Narain Vyas University, and Jodhpur.

Preparation of Plant Extracts:

(a) From fresh plant parts:

10 g of fresh plant parts viz. Root, Stem, Leaves, and Flowers will blended 3-4 times under tap water and distilled water, then surface sterilization was done by 90% alcohol. After sterilization the plant material was crushed in 100 ml of distilled water and ethanol separately for aqueous and alcoholic extracts, respectively. The alcoholic macerates was kept for 24 h at room temperature to evaporate the alcohol. In the remaining residue, 100ml of distilled water will also be added. Macerates was squeezed through double-layered muslin cloth and filtered through filter paper. After filtration, aliquot was centrifuged at 10,000 rpm for 20 min. The suspended was filtered through Whatmanno.1 filter paper and then sterilized by passing through 0.2-micron disposable filters. The extracts (10%) thus obtained was used for the *in vitro* studies. To reduce the dose of antibiotic combined effect of plant extract and antibiotics, 1:1 solution was also prepared.

(b) From dry plant parts:

The various plants was collected and the soil was removed from surface. Then, the plant parts was oven dried at 800C for 24 hrs. Pandeya et.al. (1968). After drying plant parts they was crushed and powder separately and 25 ml of distilled water and ethanol was added separately to 10 g of dried powder of various plant parts to make aqueous and alcoholic extracts, respectively. The alcoholic was macerates and aqueous macerates was kept for 24 hrs at room temperature to evaporate alcohol. The macerates was squeezed through double-layered muslin cloth and filtered

through filter paper. After filtration aliquot was centrifuge at 10,000 rpm for 20 min. The supernatant was filtered through What man's No.1 filter paper and then sterilized by passing through 0.2 micron disposable filtron .

Preparation of Inoculum: The gram positive (*Streptococcus mutans* and *Staphylococcus aureus*) and gram negative bacteria (*Escherichia coli, Pseudomonas aeruginosa*) was obtain from IMTEC and will grow in nutrient broth overnight in a rotary shaker at 37°C, centrifuged at 10,000 rpm for 5 min.

Anti-bacterial Activity: The disc diffusion method was used. Different concentration of the extracts (100 µg mlg) was prepared by reconstituting with methanol.The test microorganisms will seeded into respective medium by spread plate method 10µl (10 cells/ml) bacteria was seeded in nutrient medium. After solidification the filter paper discs (5 mm in diameter) was impregnated with the extracts was placed on test organism-seeded plates. *Then bacterial will* used for antibacterial test. Streptomycin sulphate (10 g mlG) will used as positive control and methanol 1solvent (100 µg mlG1) was used as negative control The antibacterial assay plates will incubated at 37°C for 24h. The diameters of the inhibition zones were measured in mm.

EXPERIMENTAL OBSERVATION

ANTIMICROBIAL ACTIVITIES OF SELCETED PLANTS

1. Abutilon indicum (Antibacterial activity of fresh and dry plant part extracts)

Table showing following results

Staphylococcus aureus: Fresh aqueous stem and leaf, alcoholic root and leaf extract showed inhibition. In dried plant parts extract aqueous leaf and alcoholic stem extract showed inhibition.

Streptococcus mutans Fresh root, stem and leaf aqueous extract, fresh stem and flower alcoholic extract showed moderate inhibition. Dried plant parts did not show any inhibition. Dried alcoholic stem extract showed better inhibition.

Escherichia coli. Fresh aqueous stem, leaf and flower, alcoholic stem and flower extract showed moderate inhibition. In dried plant parts stem alcoholic extract showed maximum inhibition.

Pseudomonas aeruginosa: Fresh aqueous extract of stem, leaf and flower showed moderate inhibition whereas little inhibition was found lac flower extract. *In dried plant parts only aqueous flower extract showed little inhibition.*

***Salmonella typhi* :** Fresh aqueous stem and flower extract showed moderate inhibition whereas little inhibition was observed in alcoholic root and flower extract. Dried plant parts did not showed any inhibition.

Thus it was concluded that dried alcoholic stem extract showed better inhibition in *Streptococcus mutans.* When antibiotic was mixed with fresh plant parts alcoholic root extract showed maximum inhibition in ***Streptococcus mutans*** whereas in dried aqueous stem extract showed better inhibition in case of ***Escherichia coli.***

2. *Aloe vera (* Antibacterial activity of fresh and dry plant part extracts)

Table showing following observations against selected bacteria.

Staphylococcus aureus*:* fresh plant parts i.e. root, stem and flowers did not show any inhibition, where as extract of fresh leaves showed better inhibition. In dry plant parts aqueous root and stem showed little inhibition, where as leaf and flower did not show inhibition.

Streptococcus mutans*:* In fresh plant parts only aqueous root extract showed little inhibition, where in dry plant parts alcoholic stem and flower extract show inhibition, but aqueous dry extract of root showed better inhibition.

Escherichia coli*:* fresh Aqueous and alcoholic extract root extract showed little inhibition, where as fresh leaf and flower didn't showed any inhibition. In dry plant parts only alcoholic extract of stem and flower showed inhibition.

Pseudomonas aeruginosa*:*

Aqueous root, stem and leaf showed inhibition but no inhibition was observed in fresh alcoholic extract. Aqueous dry extract also showed better inhibition in root, stem and leaf and maximum in stem, where as dry alcoholic extract of leaf showed inhibition. Fresh and dry flower did not show any inhibition.

***Salmonella typhi**:* No inhibition was observed in fresh alcoholic and aqueous extract, where as in dry aqueous and alcoholic extracts of root and stem showed little inhibition.

Thus it is concluded that aqueous stem dry extract of *Achyranthes aspera* showed its maximum inhibition in case of *Pseudomondas aeruginosa.* When combination of antibiotic with aqueous. It shows maximum inhibition, in fresh stem extract against *Staphylococcus aures.* When antibiotic was mixed with alcohol maximum inhibition was found in alcoholic flower extract against *Streptococcus mutans.* Where as In dried aqueous extract of flower and alcoholic root, stem and leaf extract showed maximum inhibition against *Streptococcus mutans.*

3. Asparagas racemosus (Antibacterial activity of fresh and dry plant part extracts

Table showing following results

Staphylococcus aureus: fresh and dried aqueous extract of root and leaf did not show any inhibition, where as alcoholic root extract of fresh and dry part showed inhibition. In stem and flower fresh and dried plant part showed inhibition. Maximum inhibition was found in fresh aqueous stem extract

Streptococcus mutans: Fresh flower aqueous and alcoholic extract showed inhibition and maximum was found in flower. Dried alcoholic extract of all parts showed inhibition.

Escherichia coli. Aqueous dried and fresh parts showed no inhibition, Where as alcoholic fresh and dried of root, stem and flowers showed inhibition. Maximum was found in stem alcoholic dried extract

Pseudomonas aeruginosa. Fresh and dried aqueous and alcoholic extract didn't show any inhibition where as leaf and flower dried aqueous. And alcoholic. Showed inhibition.

Salmonella typhi . Fresh aqueous extract did not show any inhibition where as fresh alcoholic and dried aqueous and alcoholic showed inhibition. Maximum inhibition was found in dried aqueous leaf extract,

Thus it was concluded that maximum inhibition was found in fresh aqueous flower extract in case of *Streptococcus mutans* and aqueous fresh extract of stem in *Staphylococcus aureus.* When antibiotics was mixed in fresh and dried extracts, maximum inhibition was against fresh alcoholic stem extract against *Streptococcus mutans*

4. Boerhavia diffusa L. (Antibacterial activity of fresh and dry plant part extracts)

Table showing following results

Staphylococcus aureus : Fresh aqueous root, stem and fruit extract and alcoholic root, stem and fruit extract showed better inhibition. In dried aqueous extract of root showed maximum inhibition. Where as little inhibition was observed in leaf extract .

Streptococcus mutans: Fresh aqueous root and leaf extract showed little inhibition whereas alcoholic extract doesnot showed any inhibition. Dried aqueous leaf extract and alcoholic root extract showed little inhibition.

Escherichia coli: Fresh aqueous extract did not show any significant result whereas alcoholic leaf extract showed better inhibition. Stem dried aqueous extract showed maximum inhibition whereas little inhibition was found in aqueous alcoholic fruit extract.

Pseudomonas aeruginosa: In fresh plant parts only aqueous and alcoholic fruit extract showed better inhibition whereas dried plant parts did not show any inhibition.

Salmonella typhi: Fresh aqueous, root and stem, fresh alcoholic root and stem extract showed better results. Dried alcoholic stem extract as well as dried fruit extract showed better inhibition zone.

Thus it was concluded that maximum inhibition was observed in dried alcoholic fruit extract against *Salmonella typhi.*

5. *Cymbopogon jawarncosa* (Antibacterial activity of fresh and dry plant part extracts)

Table showing following results

Staphylococcus aureus: Fresh leaf and flower aqueous extract, fresh alcoholic stem and leaf extract showed moderate inhibition. A little inhibition was observed in dried alcoholic leaf extract as well as modrate inhibition was observed in alcoholic root extract.

Streptococcus mutans: Fresh aqueous and alcoholic leaf extract showed little inhibition. Inhibition was observed in dried plant parts

Escherichia coli : Fresh aqueous extract of stem and leaf, alcoholic extract of root and leaf showed better inhibition. Dried plant parts showed little inhibition.

Pseudomonas aeruginosa: Aqueous fresh leaf extract and alcoholic stem and leaf extract showed moderate inhibition. Aqueous and alcoholic dried leaf extract showed moderate inhibition.

Salmonella typhi: Fresh root and leaf and alcoholic root and stem showed better inhibition. Dried aqueous stem and leaf and alcoholic stem and flower showed little inhibition.

Thus it was concluded that Fresh alcoholic root and stem extract showed better inhibition in case of *Escherichia coli* When antibiotic was mixed with fresh plant parts maximum

inhibition was observed in alcoholic stem extract against ***Escherichia coli.*** When antibiotic was mixed with dried plant parts aqueous stem extract showed better inhibition against ***Streptococcus mutans.***

6 .Datura Stramonium **(Antibacterial activity of fresh and dry plant part extracts)**

Table showing following results

Staphylococcus aureus: only fresh aqueous and alcoholic stem extract showed inhibition, rest fresh parts as well as dried parts did not showed any inhibition.

Streptococcus mutans: *No* inhibition was found in fresh and dried plant parts

Escherichia coli. Only fresh extract of stem showed little inhibition, no other fresh and dried plant showed any inhibition.

Pseudomonas aeruginosa. Little inhibition was found in dried plant parts of aqueous leaf and alcoholic root and leaf extract.

Salmonella typhi . Fresh aqueous stem and leaf as well as dried aqueous stem and leaf extract showed inhibition.

Thus it was concluded that overall this plant did not showed better inhibition against all the five pathogen accept aqueous fresh stem extract showed better inhibition in case of *Salmonella typhi.* When antibiotics were mixed in fresh and dried plant parts, maximum inhibition was observed in alcoholic fresh extract against *Salmonela typhi*, in dried plant parts, where as alcoholic fresh extract flower extract showed inhibition against *Streptococcus mutans*

Euphorbia hirta **(Antibacterial activity of fresh and dry plant part extracts)**

Table showing following results

Staphylococcus aureus: Fresh aqueous flower extract , dried alcoholic leaf extract showed moderate inhibition. Whereas fresh stem and leaf alcoholic extract showed better inhibition.

Streptococcus mutans: Fresh alcoholic leaf and dried alcoholic leaf extract showed better inhibition. No inhibition was observed in rest of the parts.

Escherichia coli: Fresh and dried alcoholic stem, leaf and flower extract showed better inhibition. Whereas fresh and dried aqueous extracts showed no results.

Pseudomonas aeruginosa: Fresh aqueous flower extract showed moderate inhibition whereas fresh alcoholic leaf extract showed maximum inhibition. No inhibition was found in the dried plant parts.

Salmonella typhi: Alcoholic fresh stem and leaf extract showed better inhibition. Aqueous and alcoholic dried plant parts showed little and moderate inhibition.

Thus it was concluded that maximum inhibition was found in fresh alcoholic leaf extract against *Pseudomonas aeruginosa.* When antibiotic was mixed with fresh plant parts alcoholic stem extract showed maximum inhibition whereas antibiotic was mixed with dried plant parts aqueous stem extract showed maximum inhibition.

T*ephrosia purpurea* ***(*****Antibacterial activity of fresh and dry plant part extracts)**

Staphylococcus aureus: Fresh aqueous stem and flower, and alcoholic fresh stem and flower showed moderate inhibition. Dried root and flower aqueous extract as well as dried alcoholic flower extract showed little inhibition.

Streptococcus mutans: In fresh aqueous and alcoholic extract only flower showed little inhibition. Dried stem aqueous extract and dried alcoholic flower extract showed better inhibition.

Escherichia coli. Fresh leaf and flower aqueous extrtact showed moderate inhibition whereas alcoholic flower extract showed maximum inhibition. In dried stem aqueous and alcoholic extract showed little inhibition whereas moderate inhibition was observed in aqueous flower extract.

Pseudomonas aeruginosa: Only fresh flower aqueous extract showed moderate inhibition whereas little inhibition was observed in stem and flower alcoholic extract. In dried extract only alcoholic leaf extract showed little inhibition.

Salmonella typhi **:**Only fresh stem aqueous extract as well as al c flower and stem extract showed little inhibition. Dried leaf aqueous and alcoholic extract also showed a little inhibition.

Thus it was concluded that maximum inhibition was found in fresh alcoholic flower extract against *Escherichia coli.*

T*ribulus terrestris (***Antibacterial activity of fresh and dry plant part extracts of ***)***

Staphylococcus aureus Fresh alcoholic root extract as well as fresh aqueous leaf extract showed inhibition. No dried plant parts showed inhibition.

Streptococcus mutans: Fresh stem extract and fresh alcoholic leaf extract showed little inhibition whereas no other part showed inhibition.

Escherichia coli:Only fresh alcoholic leaf extract showed little inhibition. Rest no inhibition was found in dried plant parts.

Pseudomonas aeruginosa. This plant did not show any inhibition against this pathogen.

Salmonella typhi. In fresh aqueous and dried root parts showed moderate inhibition whereas fresh stem and flower alcoholic extract showed inhibition.

Thus it was concluded that fresh alcoholic root extract showed maximum inhibition in case of *Staphylococcus aureus*. When antibiotic was mixed in fresh alcoholic extract leaf showed maximum inhibition in case of *Salmonella typhi.* When antibiotic was mixed with dried plant parts maximum inhibition was found in aqueous stem extract against *Salmonella typhi.*

Table -1

1. Zone of Inhibition of fresh and dry plant part extracts *Abutilon indicum* *(Zone in mm (-5))*

S.No.	Bactria	Solution	Fresh Extract				Dry Extract			
			Root	Stem	Leaf	Flower	Root	Stem	Leaf	Flower
1.	*S.aureus*	Aq.	14	6	17	8	14	16	4	6
		Alc.	8	7	8	5	6	2	3	8
		Aq.+Anti.	20	12	23	25	26	14	14	16
		Alc.+Anti	19	20	22	21	14	11	11	12
2.	*S.mutans*	Aq.	-	12	7	8	7			

		Alc.	-	5	5	6	6	12		11
		Aq.+Anti.	-	16	15	14	12	12	13	14
		Alc.+Anti		14	15	14	14	15	17	18
3.	*E.coli*	Aq.	15	-	-	11	8	19	7	5
		Alc.	14	-	-	8	9	7	8	5
		Aq.+Anti.	11	12	11	14	14	15	17	17
		Alc.+Anti	12	14	15	17	18	19	14	15
4.	*P.aeruginosa*	Aq.	8	14	19	7	9	4	5	4
		Alc.	7	7	6	9	8	4	4	8
		Aq.+Anti.	11	11	14	14	15	14	16	1
		Alc.+Anti	14	11	10	17	17	10	10	12
5.	*S.typhi*	Aq.	-	-	8	8	9	7	7	4
		Alc.	-	8	7	8	5	12	11	3
		Aq.+Anti.	11	10	11	10	17	18	18	191
		Alc.+Anti	10	14	12	18	14	12	12	10

Table -2

Zone of Inhibition of fresh and dry plant part extracts *Aloe vera* *(Zone in mm (-5))*

S.No.	Bactria	Solution	Fresh Extract				Dry Extract			
			Root	Stem	Leaf	Flower	Root	Stem	Leaf	Flower
1.	*S.aureus*	Aq.	4	6	14	17	14	8	16	6
		Alc.	3	8	8	8	6	5	2	7
		Aq.+Anti.	14	16	20	23	26	25	14	12
		Alc.+Anti	11	12	19	22	14	21	11	20
2.	*S.mutans*	Aq.			-	7	7	8		12
		Alc.		11	-	5	6	6	12	5

		Aq.+Anti.	13	14	-	15	12	14	12	16
		Alc.+Anti	17	18		15	14	14	15	14
3.	*E.coli*	Aq.	7	5	15	-	8	11	19	-
		Alc.	8	5	14	-	9	8	7	-
		Aq.+Anti.	17	17	11	11	14	14	15	12
		Alc.+Anti	14	15	12	15	18	17	19	14
4.	*P.aeruginosa*	Aq.	5	4	8	19	9	7	4	14
		Alc.	4	8	7	6	8	9	4	7
		Aq.+Anti.	16	1	11	14	15	14	14	11
		Alc.+Anti	10	12	14	10	17	17	10	11
5.	*S.typhi*	Aq.	7	4	-	8	9	8	7	-
		Alc.	11	3	-	7	5	8	12	8
		Aq.+Anti.	18	191	11	11	17	10	18	10
		Alc.+Anti	12	10	10	12	14	18	12	14

Table -3

Zone of Inhibition of fresh and dry plant part extracts *Asparagus racemosus*
(Zone in mm (-5))

S.No.	**Bactria**	**Solution**	**Fresh Extract**				**Dry Extract**			
			Root	Stem	Leaf	Flower	Root	Stem	Leaf	Flower
1.	*S.aureus*	Aq.	5	6	8	8	8	-	4	8
		Alc.	3	9	6	7	6	-	9	9
		Aq.+Anti.	12	17	15	15	11	10	12	8
		Alc.+Anti	14	18	14	14	12	12	11	7
2.	*S.mutans*	Aq.	5	5	8	8	8	-	7	5

		Alc.	4	6	7	9	8		8	6
		Aq.+Anti.	18	11	12	11	10	21	14	16
		Alc.+Anti	11	12	20	21	10	22	19	19
3.	*E.coli*	Aq.	10	8	5	12	16	8	8	5
		Alc.	5	9	6	16	14	-	7	6
		Aq.+Anti.	15	14	21	14	22		21	21
		Alc.+Anti	16	15	20	15	21	21	17	20
4.	*P.aeruginosa*	Aq.	8	6	5	8	8	20	8	6
		Alc.	6	9	8	9	9	7	9	9
		Aq.+Anti.	10	11	7	15	12	11	11	15
		Alc.+Anti	12	10	12	14	11	10	14	14
5.	*S.typhi*	Aq.	8	8	12	8	9	8	5	5
		Alc.	12	5	5	5	8	9	6	9
		Aq.+Anti.	18	20	18	10	11	12	17	18
		Alc.+Anti	16	12	18	12	10	14	18	11

Table -4

Zone of Inhibition of fresh and dry plant part extracts *Boerrhavia* *(Zone in mm (-5))*

S.No.	Bactria	Solution	Fresh Extract				Dry Extract			
			Root	Stem	Leaf	Flower	Root	Stem	Leaf	Flower
1.	*S.aureus*	Aq.	13	08	12	07	10	11	09	08
		Alc.	09	11	07	08	09	10	13	07
		Aq.+Anti.	23	17	21	22	23	18	20	17
		Alc.+Anti	19	26	24	25	20	18	19	21
2.	*S.mutans*	Aq.	11	07	12	10	13	11	09	07
		Alc.	-	10	13	07	09	08	11	12

		Aq.+Anti.	23	17	19	22	23	21	20	18
		Alc.+Anti	26	25	21	20	19	24	23	22
3.	*E.coli*	Aq.	-	08	11	10	09	07	13	09
		Alc.	-	12	10	11	07	09	08	13
		Aq.+Anti.	19	17	21	22	23	20	22	20
		Alc.+Anti	21	26	25	20	21	24	19	22
4.	*P.aeruginosa*	Aq.	07	09	10	11	-	12	13	09
		Alc.	13	09	12	10	-	07	08	12
		Aq.+Anti.	23	20	17	19	21	22	18	17
		Alc.+Anti	25	18	19	20	22	23	24	26
5.	*S.typhi*	Aq.	07	-	10	11	13	12	10	11
		Alc.	09	-	13	12	09	11	10	08
		Aq.+Anti.	18	23	22	23	19	20	21	22
		Alc.+Anti	25	20	21	26	18	24	19	22

Table -5

Zone of Inhibition of fresh and dry plant part extracts *Cymbopogon* *(Zone in mm (-5))*

S.No.	Bactria	Solution	Fresh Extract				Dry Extract			
			Root	Stem	Leaf	Flower	Root	Stem	Leaf	Flower
1.	*S.aureus*	Aq.	10	08	13	11	08	12	09	07
		Alc.	13	12	07	-	09	11	08	09
		Aq.+Anti.	17	20	19	18	17	21	20	23
		Alc.+Anti	20	18	25	19	22	26	23	21
2.	*S.mutans*	Aq.	09	12	10	08	-	13	11	-
		Alc.	09	11	08	13	12	11	07	12

		Aq.+Anti.	22	21	18	20	19	18	23	21
		Alc.+Anti	18	25	19	23	22	26	21	19
3.	*E.coli*	Aq.	12	08	09	-	11	07	09	10
		Alc.	11	07	08	12	13	09	08	-
		Aq.+Anti.	22	20	21	17	18	23	17	20
		Alc.+Anti	25	19	21	22	23	26	25	18
4.	*P.aeruginosa*	Aq.	11	12	09	11	-	08	07	10
		Alc.	12	07	08	08	09	13	11	-
		Aq.+Anti.	17	20	18	19	22	23	21	20
		Alc.+Anti	20	18	25	21	22	23	26	23
5.	*S.typhi*	Aq.	07	12	09	08	10	-	12	11
		Alc.	09	08	11	12	13	07	-	08
		Aq.+Anti.	21	22	21	23	21	18	17	20
		Alc.+Anti	20	19	25	19	22	23	26	21

Table -6

Zone of Inhibition of fresh and dry plant part extracts *Datura* *(Zone in mm (-5))*

S.No.	Bactria	Solution	Fresh Extract				Dry Extract			
			Root	Stem	Leaf	Flower	Root	Stem	Leaf	Flower
1.	*S.aureus*	Aq.	07	09	12	08	11	13	08	10
		Alc.	09	08	11	09	-	07	12	13
		Aq.+Anti.	17	20	18	19	22	23	21	20
		Alc.+Anti	18	20	25	19	21	22	23	26
2.	*S.mutans*	Aq.	07	09	12	10	08	-	11	13
		Alc.	11	09	-	08	12	13	11	07

		Aq.+Anti.	18	22	21	20	19	17	23	21
		Alc.+Anti	25	18	20	19	22	23	26	21
3.	*E.coli*	Aq.	09	12	08	-	11	10	07	09
		Alc.	08	11	07	12	-	13	09	08
		Aq.+Anti.	20	19	22	21	20	17	23	18
		Alc.+Anti	20	25	19	21	22	23	26	18
234.	*P.aeruginosa*	Aq.	12	08	-	11	09	07	08	10
		Alc.	11	-	12	07	08	08	09	13
		Aq.+Anti.	19	20	22	18	17	21	18	23
		Alc.+Anti	25	19	21	22	26	23	18	20
5.	*S.typhi*	Aq.	08	-	12	09	11	08	07	10
		Alc.	12	11	08	07	09	10	13	10
		Aq.+Anti.	20	19	22	17	18	18	21	23
		Alc.+Anti	19	22	26	23	20	18	21	22

Table -7

Zone of Inhibition of fresh and dry plant part extracts *Euphorbia hirta* *(Zone in mm (- 5))*

S.No.	Bactria	Solution	Fresh Extract				Dry Extract			
			Root	Stem	Leaf	Flower	Root	Stem	Leaf	Flower
1.	*S.aureus*	Aq.	12	08	13	-	10	11	09	07
		Alc.	13	12	07	09	-	08	11	09
		Aq.+Anti.	20	21	23	22	19	18	20	17
		Alc.+Anti	26	23	22	21	18	19	25	20
2.	*S.mutans*	Aq.	13	11	-	08	10	12	09	07

		Alc.	07	13	11	-	12	08	09	11
		Aq.+Anti.	21	23	17	19	20	21	22	18
		Alc.+Anti	21	26	23	22	19	20	18	25
3.	*E.coli*	Aq.	09	07	10	-	11	08	12	09
		Alc.	08	09	13	12	-	07	11	08
		Aq.+Anti.	18	23	17	20	21	22	19	20
		Alc.+Anti	18	26	23	22	21	19	20	25
4.	*P.aeruginosa*	Aq.	10	07	08	-	11	09	12	08
		Alc.	13	10	09	07	-	08	11	12
		Aq.+Anti.	21	23	18	17	22	19	20	23
		Alc.+Anti	22	21	18	20	23	26	22	19
5.	*S.typhi*	Aq.	10	08	07	09	11	-	08	12
		Alc.	13	09	08	07	08	12	-	11
		Aq.+Anti.	23	18	21	17	18	22	20	19
		Alc.+Anti	25	18	17	21	18	19	22	23

Table -8

Zone of Inhibition of fresh and dry plant part extracts *Tephorosia* *(Zone in mm (-5))*

S.No.	Bactria	Solution	Fresh Extract				Dry Extract			
			Root	Stem	Leaf	Flower	Root	Stem	Leaf	Flower
1.	*S.aureus*	Aq.	08	10	09	09	13	10	11	07
		Alc.	09	07	13	12	08	07	12	13
		Aq.+Anti.	17	18	23	22	21	23	19	21
		Alc.+Anti	18	20	19	22	21	24	26	25
2.	*S.mutans*	Aq.	-	08	10	08	11	13	07	11
		Alc.	07	09	12	08	10	12	10	-

		Aq.+Anti.	18	23	22	21	23	21	22	17
		Alc.+Anti	19	22	21	24	25	26	20	18
3.	*E.coli*	Aq.	08	09	-	11	10	08	09	11
		Alc.	09	07	12	12	09	07	10	-
		Aq.+Anti.	17	22	21	23	22	23	18	22
		Alc.+Anti	22	19	24	21	25	20	26	18
4.	*P.aeruginosa*	Aq.	09	08	11	08	09	-	10	08
		Alc.	-	07	10	12	12	07	09	11
		Aq.+Anti.	22	21	17	22	23	22	17	18
		Alc.+Anti	19	22	21	25	20	26	18	19
5.	*S.typhi*	Aq.	08	11	09	10	-	08	11	09
		Alc.	11	09	07	08	11	13	13	09
		Aq.+Anti.	21	22	17	22	17	18	23	22
		Alc.+Anti	20	25	21	22	19	18	20	22

Table -9

Zone of Inhibition of fresh and dry plant part extracts *Tribulus* *(Zone in mm (-5))*

S.No.	Bactria	Solution	Fresh Extract				Dry Extract			
			Root	Stem	Leaf	Flower	Root	Stem	Leaf	Flower
1.	*S.aureus*	Aq.	10	08	11	13	09	07	12	-
		Alc.	08	11	09	07	-	12	13	09
		Aq.+Anti.	20	18	19	17	23	22	20	21
		Alc.+Anti	26	23	22	25	19	20	18	19
2.	*S.mutans*	Aq.	12	10	08	-	11	13	09	12
		Alc.	09	11	-	12	08	11	13	07

		Aq.+Anti.	21	20	22	18	17	23	21	17
		Alc.+Anti	25	20	18	19	23	22	21	26
3.	*E.coli*	Aq.	09	07	11	10	-	12	08	09
		Alc.	08	-	11	12	07	09	13	08
		Aq.+Anti.	20	21	22	20	21	23	19	21
		Alc.+Anti	25	20	19	21	23	22	18	26
4.	*P.aeruginosa*	Aq.	10	07	08	11	09	12	-	08
		Alc.	13	-	10	09	07	11	08	12
		Aq.+Anti.	23	21	18	17	18	19	20	22
		Alc.+Anti	22	19	23	18	20	22	21	26
5.	*S.typhi*	Aq.	08	-	12	11	10	09	07	08
		Alc.	13	12	10	09	07	08	11	08
		Aq.+Anti.	20	19	18	17	22	20	21	23
		Alc.+Anti	26	20	25	24	23	18	19	20

Table -10

Zone of Inhibition of fresh and dry plant part extracts *Amaranthus* *(Zone in mm (-5))*

S.No.	Bactria	Solution	Fresh Extract				Dry Extract			
			Root	Stem	Leaf	Flower	Root	Stem	Leaf	Flower
1.	*S.aureus*	Aq.	08	09	11	10	07	12	08	13
		Alc.	07	13	10	09	08	07	11	09
		Aq.+Anti.	20	17	18	23	22	21	19	17
		Alc.+Anti	21	18	25	20	19	24	22	23
2.	*S.mutans*	Aq.	07	09	11	13	10	12	07	11
		Alc.	11	07						

		Aq.+Anti.								
		Alc.+Anti								
3.	*E.coli*	Aq.								
		Alc.								
		Aq.+Anti.								
		Alc.+Anti								
4.	*P.aeruginosa*	Aq.								
		Alc.								
		Aq.+Anti.								
		Alc.+Anti								
5.	*S.typhi*	Aq.								
		Alc.								
		Aq.+Anti.								
		Alc.+Anti								