Aim and Objectives
2. AIM AND OBJECTIVES

Many infectious microorganisms are resistant to various available antibiotics, hence alternative therapeutic agents are very much needed (Aliero and Afolayan, 2006). So, the Plant drugs are of great importance to the health of individuals and communities. The medicinal value of these plants lies in chemical substances that produce a definite physiological action on the human body (Edeoga, et al., 2005).

Three different plant sources were used for our work, includes *Acorus calamus* (L.), *Tridax procumbens* (L.) and *Pisum sativum* (L.). The rhizome of *Acorus calamus* (L.) is used in the treatment of nephropathy, cough, bronchitis, inflammation, dysentery, skin diseases and snake bite. The whole shrub of *Tridax procumbens* (L.) is used to treat skin disorders, stomach troubles, diarrhoea and dysentery. The seed of *Pisum sativum* (L.) is used as contraceptive and fungistatic. The dried and powdered seed has been used as a poultice on the skin where it has an appreciable affect on many types of skin complaints including acne (http://en.wikipedia.org/wiki/Sweet_Flag/Tridax_procumbens/Pea).

The present study approaches the following objectives:

- **Isolation & Identification of *Staphylococcus aureus* from clinical specimens like Wound swab, Pus and Sputum**
- **Detection of Methicillin - Resistant *Staphylococcus aureus* (MRSA) through MeReSa Agar Medium and HiChrome MeReSa Agar medium**
- **Isolation & Identification of Genomic DNA from MTCC-96 (*Staphylococcus aureus* - Methicillin Sensitive Reference Strain), Methicillin Resistant and Methicillin Sensitive Staphylococcal isolates through Modified DNA extraction method and Agarose Gel Electrophoresis**
- Molecular confirmation of Methicillin Resistance by the amplification of mecA gene through Polymerase Chain Reaction (PCR)

- Antibacterial activity against MTCC-96, Methicillin Resistant and Methicillin Sensitive Staphylococcal isolates by selective standard antibiotics through Kirby-Bauer Method (Disc Diffusion Method)

- Separation of Crude extract from Rhizomes of Acorus calamus (L.), Whole shrub of Tridax procumbens (L.) and Seeds of Pisum sativum (L.) using different solvents like Acetone, Chloroform, Isopropanol and Ethanol

- Antibacterial Activity of these three crude extracts and with their combinations through different concentrations (50μg to 250μg) against Methicillin-Resistant Staphylococcus aureus (MRSA) by Disc Diffusion Method

- Identification of Minimal Inhibitory Concentrations (MIC) and Minimal Bactericidal concentrations (MBC) of these three crude extracts against Methicillin-Resistant Staphylococcus aureus (MRSA)

- Preliminary Phytochemical analysis have been made on these three Crude Plant extracts