

## Research Projects:

### Project 1

1. Title of the project: **Herbal Garden for Medicinal Plants of the Western Ghats region**
2. Principal Investigator: Dr. S.D. Kholkute, Scientist 'G', Officer-in-Charge, RMRC, Belgaum
3. Co-Investigator: Dr. K.N. Kattimani, Professor, Dept. of Medicinal and Aromatic Plants, KRC College of Horticulture, Arabhavi
4. Subject Key words: Herbal Garden, Western Ghats, Medicinal Plants
5. Objectives:
  - Conservation of medicinal plants of Western Ghats.
  - Popularizing use of local medicinal plants and Indian system of medicine.
  - Establishment of sustainable medicinal plants resource base and dissemination of information.
  - Developing the protocol for propagation techniques for important medicinal plants.
  - Developing a gene-pool of indigenous and exotic plant species.
6. Introduction:

The Western Ghats of India covers an area of 1,60,000 Sq. Km., which is among the ecologically richest regions and considered as one of the eight 'hottest' biodiversity hotspots of the 34 identified biodiversity hotspots worldwide. Of the 15,000 plant species recorded so far, 4,000 are endemic to the region.

As the region boasts of a tremendous diversity of plant and animal life, the forests are source of herbal medicine for many of the local ethnic communities. This indigenous system of medicine thrives on naturally occurring floral diversity, collectively referred to as medicinal plants. However, interest in Ayurveda and traditional medicine, which has a known history of treating and curing mankind across five millennia, has increased globally, it is becoming homeless in its own birthplace. Many of the herbal remedies, which are evolved over generations of experience and practice, are not well documented and are unknown or least known to the modern world. Meantime, it is evident that the forests in the Western Ghats region are under increasing stress due to over exploitation, degradation and habitat destruction

affecting the very existence of medicinal plant flora. Already 586 species of the plants from the region are endangered and feature in the 'Red Data' book. Thus, there is an urgent need of conservation priorities, primarily for the medicinal plants which are facing the maximum stress and are in the verge of extinction.

Thus, there is a need to create awareness among the public about the importance of our traditional heritage of herbal healing and importance of medicinal plants and their conservation.

#### 7. Methodology:

The methodology for establishment of herbal garden involved following procedures:

- Preparation of land and landscaping
- Collection and planting of medicinal plants
- Development of irrigation and lighting facilities
- Development of propagation protocols
- Development of IEC system

#### 8. Results:

In all 364 medicinal plants have been planted in the garden so far. The basic information about the plants is made available on spot. The IEC system is well developed and People belonging to various backgrounds (Ayurveda, traditional practice, pharmaceuticals, herbal research), professions (Teachers, Students, Researchers, Herbal healer) and age groups are visiting the garden.

#### 9. Conclusions:

The garden is helping in conservation and creating awareness among the visitors.

### **Project 2**

1. Title of the project: **Museum of Ethnomedicinal Plants of Western Ghats**
2. Investigator: Dr. S.D. Kholkute, Scientist 'G' & Officer-in-Charge, RMRC, Belgaum
3. Co-Investigator: NIL
4. Subject Key words: Museum, Western Ghats, Medicinal Plants, Crude drugs
5. Objectives:
  - To provide scientific information on medicinal plants of Western Ghats and their usages

- To create awareness on role of medicinal plants/ ethnomedicobotany in health care and drug development
- To improve knowledge on importance of Western Ghats as a biodiversity hot spot and conservation of medicinal plants
- To disseminate scientific information on ethno-medicinal plants of Western Ghats

#### 6. Introduction:

Over the centuries, people in India have had a fascination and respect for the natural heritage, traditional plant ethics and herbal medicine has become a part of its culture. This wealth of traditional herbal knowledge is diminishing with the advancement of modern medicine. However, these valuable traditional practices are still followed in deep woods and interior tribal areas of India. One such area is the Western Ghats, which runs majestically parallel to the west coast of India covering an area approximately equal to 160,000 sq.km. It is amongst the 32 biodiversity hot-spots identified in the world, due to its rich and unique assemblage of flora and fauna. Among approximately 4000 flowering plant species of Western Ghats, more than 2000 plants are reported to be of medicinal value. This wealth of medicinal plants as well as their information resources is diminishing day by day due to over exploitation and lack of interest in herbal medicine. Mean time the complete information on medicinal plants of the Western Ghats is not available in one place. The establishment of museum dedicated to the medicinal plant wealth of Western Ghats is a step towards fulfilling this lacuna.

#### 7. Methodology:

The methodology followed for the establishment of the museum is as follows:

##### Infrastructure Development:

- Preparation and Display of Photographs, Herbaria, Charts etc.
- Collection of plant parts of medicinal value
- Development of Herbaria and crude drug depository
- Digitalization of Information
- IEC activities

#### 8. Results:

The required infrastructure is developed in the Centre. More than 710 photographs of 265 species of medicinal plants were collected during the process, of which 113 laminated colour photographs are displayed in the museum. A total of 384 herbaria of 188 species were prepared. Illustrative scientific charts of various

branches of traditional medicine like Ayurveda and Siddha (Indian systems of medicine), modern medicine, pharmacology, pharmacognosy etc. were prepared and are displayed in the museum. A total of 200 crude drug samples are collected so far, of which 128 are dry preserved specimens and 72 are wet preserved specimen samples. Most of the collected information is stored in digital format. The photographs of the plants were stored electronically to develop Digital Image Library of the medicinal plants. All the prepared herbaria are scanned and stored in the computer system, which is serving as Digital Herbaria. Training programs and workshops were conducted as a part of IEC activity. The people from various backgrounds and profession are regularly visiting the museum.

9. Conclusions:

The museum is serving as the IEC centre for medicinal plants and traditional medicine system in the region. It is expected that, this will prove a important societal activity and provide scientific information once it is fully established.

### Project 3

1. Title of the project: **Grant-in-aid for Revitalization of Local Health Traditions**
2. Investigator: Dr. Harsha Hegde, Scientist B, RMRC (ICMR), Belgaum
3. Co-Investigators:
  - i. Mr. S. M. Jirlimath (Program Coordinator), Belgaum Integrated Rural Development Society (BIRDS) –Naganur
  - ii. Dr B. S. Prasad, Principal, B M K Ayurveda Mahavidyalaya, Shahapur, Belgaum
4. Project Co-ordinator: Mr. Shripad Bhat , RA, RMRC (ICMR), Belgaum
5. Subject Key words: Traditional medicine, PRA, Toxicology, Clinical assessment
6. Objectives:
  - Systematic participatory documentation of Local Health Traditions (LHT) related to primary healthcare conditions
  - Rapid assessment of selected health practices, prioritized by local communities, based on literature review.
  - Pre-clinical (Pharmacological/ toxicological) and clinical studies on high priority local health practices.
    - for already identified diseases and formulations based on previously conducted studies.(Gastro Intestinal and Joint disorders)

- for newly emerging diseases and formulations out of PRA exercises in the present study.

- To support and encourage local health traditions by strengthening local self help groups, home remedies to meet the primary healthcare needs of community and orientation training for traditional practitioners.

#### 7. Introduction:

Traditional system of medicine has been practiced since historical times and traces its roots to ancient civilizations. The World Health Organization (WHO) has recently defined traditional medicine (including herbal drugs) as comprising therapeutic practices that have been in existence, often for hundreds of years, before the development and spread of modern medicine and are still in use today. This traditional medicine is still the mainstay of about 75–80% of the world population, mainly in the developing countries, for primary health care because of better cultural acceptability, better compatibility with the human body and lesser side effects.

India has a long history of healing tradition, in fact from pre-historic era. It is estimated that over 6000 plants in India are in use in traditional, folk and herbal medicine, representing about 75% of the medicinal needs of the Third World countries. More than 80% of the population, especially the rural folk are still dependent on traditional herbal remedies for their primary healthcare. However the rich tradition of herbal healing, which has the potential to tackle primary healthcare problems of millions and enable them health security, is eroding fast due to lack of social and policy support. Therefore there is an urgent need of revitalization of these traditional medical systems for their conservation through which the whole mankind can be benefited.

#### 8. Methodology:

- PRA of primary healthcare conditions in the study area
- Documentation of available traditional practices for the treatment of prioritized conditions
- Rapid assessment of selected practices
- Pre-clinical (Toxicological and pharmacological) assessment of selected practices
- Clinical assessment of selected practices
- Propagation of validated practices in the community

#### 9. Results:

The preclinical evaluation of practices for two conditions namely arthritis and pain in abdomen is completed so far. None of the formulations are found to be toxic and the results are encouraging. However, the experiments are still on their way as the project completed only first year.

10. Conclusions: Project initiated from 2008, once successfully completed, the results may help in revitalization of local health practices.

#### **Project 4**

1. Title of the project: An ICMR Task- Force study to understand Community and the Health care providers perspective on male controlled biological option in India.
2. Investigator: Dr. Seema Sahay (Social and Behavioral Scientist) NARI, Pune.
3. Co-Investigator: Dr. S.M. Mehendale (Epidemiologist ), Dr. Sheela Godabole (Skin & STD Specialist), Mr. Amit Nirmalkar (Statistician), Mrs. Neelam Joglekar (Consultant)  
ICMR – Investigator: Dr. Nomita Chandhiok (Sr. Scientific Advisor) , Dr. Anju Sinha (Co-principal Investigator)  
Study Site Co-Investigator: Dr. Sanjiva Kholkute – Scientist ‘G’ & OIC, RMRC, Belgaum, Mr. Shripad Bhatt (Co-investigator), Dr. Sibnath Deb – Co-Investigator, Dr. Rukma Idanani (Co-investigator) LLRM Medical College, Meerut.  
Coordinating /Study site co-investigator:  
Dr. Shalini Bharat (co-investigator), Dean, Tata Institute of Social Science, Mumbai  
Dr. Vinay Kulkarni (Co-investigator), Medical Director, Prayas
4. Subject Key words: HIV, Male controlled biological options, circumcision.
5. Objectives:
  - (i) To study the knowledge, attitudes, beliefs and practices of male condom and circumcision in circumcising and non circumcising population groups.
  - (ii) To understand the health care providers knowledge, views, attitudes towards male controlled prevention options including male circumcision.
  - (iii) To identify the barriers and concerns expressed by health care providers on male circumcision as a potential method of HIV prevention and masses their willingness to provide male circumcision services
  - (iv) To explore strategies to offer the services as part of prevention program by exploring the views of community and formulate messages for creating awareness in the community regarding male circumcision as an intervention for HIV prevention in target groups.

#### 4. Introduction :

Compelling scientific evidence exists of utility of male circumcision as HIV prevention strategy. The early termination of two randomized controlled trials of male circumcision—in Kenya and Uganda—on the basis of interim evidence that male circumcision provided a protective benefit against HIV infection of 53% among the 2784 Kenyan men and 51% among the 4996 Ugandan men enrolled (Gray et al, 2007). The Kenya and Uganda trials replicated the landmark findings of the South African Orange Farm study, the first randomized controlled trial to report a greater than 50% protective benefit of male circumcision (Auvert et al, 2005).

In India, male circumcision is traditionally and commonly practiced in certain minority community/ies and majority of the male Indian population is non-circumcised. Hence male circumcision as HIV prevention strategy may not be accepted at general community level. The issue of male circumcision has to be explored from socio-cultural, religious perspective at community level in order to decide about the policy regarding MC as a possible HIV prevention option in India. The WHO and UNAIDS guidelines emphasize and recommend male circumcision as a potential HIV prevention clinical option within health delivery settings. There has been no study to understand health care providers' perspective of male circumcision in India. If male circumcision is to be adopted in India as a HIV prevention strategy, we need to fill in existing gaps like how to improve quality and access to traditional and medical circumcision, how to determine the age of circumcision, identifying support services and extent of capacity building necessary at infrastructure and personnel level.

In order to understand male circumcision in a health care setting within the religious and cultural framework of India, a classical study design has been proposed with a qualitative study initially. The findings of the qualitative study would help in understanding the providers' concerns as well as strategies for integrating male circumcision in overall health care delivery. Considering the religious and regional differences, a survey tool will be developed which will be tested on the representative samples of health care providers in different parts of the country.

## 7. Methodology :

### Study Tools

In depth interviews will be used for data collection

### Study Design

The proposed study is qualitative study. The study will have two components, namely Health care providers and community.

8. Results: Project initiated from 2009, It is still under progress.

9. Conclusions: Project initiated from 2009, It is still under progress.

## **Project 5**

1. Title of the project: Understanding delivery, access and utilization of HIV services in Goa and Belgaum
2. Investigator: Dr. R.R. Gangakhedkar – Deputy Director, NARI, Pune
3. Co-Investigator: Dr. Sanjiva Kholkute – Scientist ‘G’ & OiC, RMRC, Belgaum,  
Dr. Pradeep Padwal, Project Director, Goa State AIDS Control Society, Goa  
Dr. Seema Sahay – Assistant Director, NARI, Pune.
4. Subject Key words: HIV, services, healthcare
5. Objectives:
  - To map available HIV services and relationship amongst the health care components in Goa and Belgaum
  - To document HIV services and management practices
  - To identify barriers and facilitators of HIV/AIDS services use.
  - To identify patients pathways to care.

### 5. Introduction:

India has the second highest number of HIV infected people in any single country next to South Africa. The total number of HIV infection in the country is estimated to be 2.47 million (2.0-3.1 million). The highest number of HIV infected individuals are in Andhra Pradesh and Maharashtra, with nearly 0.5 million each. Andhra Pradesh, Tamilnadu, Karnataka and Maharashtra, the four south Indian states contribute 63%

of all the PLHA in the country. Based on recent estimates by NACO, the adult HIV prevalence is estimated to be 0.36% (0.27% to 0.47%). Estimated HIV prevalence is greater among males (0.43%) than among females (0.29%). Equally challenging is that this prevalence masks a significant heterogeneity in the epidemic throughout the country and between districts within each State.

The National AIDS Control Programme (NACP) of India has launched its third five year plan on the first of April 2007. The primary goal of NACP –III is to halt and reverse the epidemic in India over the next 5 years by integrating programmes for prevention, care, support and treatment.

#### Migration Dynamics and HIV health care in Goa and Northern Karnataka

In India, Goa and Belgaum exemplify some of the factors that make HIV service delivery such a challenge within the Indian context. Goa, a small state on the western coast of India, has a population of 1.12 million and a large, unknown number of seasonally migrant people. It is a medium prevalent State with antenatal prevalence that has remained under 1% despite an established epidemic in high risk groups such as sex workers and male STI clinic attendees. Ten to eleven thousand people are tested annually for HIV through the public sector of which around 9% are found to have HIV. The number of private testing laboratories is unknown. There are an estimated 12000 people who have HIV and over 1000 estimated to need ART of which almost half are receiving disease and are Goans. Public sector health care is provided through the Directorate of Health Services which runs primary health care Centres, cottage hospital and two district hospitals in the North and the South. Tertiary referral services are provided by the Goa Medical College. The vertical programmes of Revised National Tuberculosis Control Programme (RNTCP), the National AIDS Control Programme (NACP), and the Vector Borne Disease Control programmes (VBDC) and the maternal child health programmes (MCH) are all under the auspices of the DHS. Tertiary referral specialist services as well as medical training are provided by the Goa Medical College that is independent from the DHS. In addition to the public sector there are a large not for profit sector that includes more than ten non governmental organizations, two PLHIV groups and three residential care homes which are funded by a variety of sources including the National AIDS Control Organization and international agencies such as HIVOS and USAID. Currently Goa has four voluntary counseling and testing

sites ran by Goa State AIDS Control Society (GSACS) in Goa medical college and the three DHS hospitals.

Northern Karnataka is one of the “hot spots” of India’s HIV epidemics, wherein sex work is common and seasonal migration for work is a norm amongst the rural population (8). Two districts of Karnataka i.e. Belgaum and Hassan have reported antenatal clinic HIV prevalence persistently of 3-4%. Belgaum has a population of about 4.2 million (Census, 2001) with the 3/4<sup>th</sup> population residing in rural area and the rest in the urban area. In Belgaum, the public health services are provided by Directorate of health services. There is one district hospital. The District hospital is public sector tertiary care centre. The rural population avail the health services through 134 Primary Health Centres and 10 Community Health Centres. The free ART centre is available at District Hospital in Belgaum. Total of 31 functioning ICTC/VCTC Centres are available in Belgaum. Last year around 35000 individuals were tested in these Centres of which 11.4% were found positive for HIV (14). In addition, there are around 10 numbers of NGOs working in this area. The private sector provides the diagnostic and treatment facility but it is difficult to estimate the exact number of test performed and cases treated by them.

6. Methodology:

- Mapping and listing of available services by survey methods.
- Qualitative research methods: Key informant interviews, Clients Exit interview and Structural Observation
- Cross sectional survey of health care providers
- Record Reviews.

7. Results: Project initiated from 2009, it is still under progress.

8. Conclusion: Project initiated from 2009, it is still under progress.