Traditional and Modern Medicine Research Directorate

Introduction

Plants have been used as a source of medicine in Ethiopia from time immemorial to treat different ailments. This is often linked to ethnic and cultural diversity coupled with an array of unique flora and fauna that are employed as the prime-tools in the fight against numerous health problems. Even with the advent of modern medicine, this indigenous health care delivery system is the major source of care for an estimated 80% of the population. More than 95% of traditional medical preparations are of plant origin The Ethiopian flora is estimated to contain between 6500 and 7000 species of higher plants of which about 12% are endemic. The Directorate of Traditional and Modern Medicine (TMMRD) within EPHI conducting operational and basic research on the quality, efficacy and safety of traditional and modern medicine including the factors affecting the rational utilization and factors determine drug resistance for the major health problems of the country.

Vision, Mission and Core Values

Vision:

To be centres of excellence in Traditional and Modern Medicine research in Africa.

Mission:

Developing validated traditional medicine products and providing evidence based information on diseases of public health importance through research on traditional medicine as well as modern medicine to promote the health of the public.

Values:

The values of the TMMRD, and the keywords relating to each value, are:

- **Communication**: Transparency, Freedom to Challenge.
- **Accountability**: Responsibility, Teamwork, Leadership, Participation.
- **Respect**: Dignity, Honesty, Fairness, Integrity.
- **Excellence and innovation**.
- **Capacity development**: Reward and Recognition.
- **Efficiency**: Human, Facility, and Financial Resources
- **Collaboration**: Strong link with University, Industry and Traditional Healer
- **Equity**
- **Relevance**
- **Rule of law**
Strategic Themes of the Directorate

1. Enhance innovation and production of standardized plant based medicine products,
2. Generate evidence based research on traditional and modern medicine
3. Raise awareness of the community through appropriate mechanisms

Strategic Results

1. Validated traditional medicine production packages for public use;
2. Evidence on safety, efficacy and quality of traditional and Modern medicine for policy and programs implementers;
3. Community awareness, guidelines, manuals, pharmacopoeias and data base;

Research Areas of the Directorate

The Traditional and Modern Medicine Research Directorate has been conduct research on TM thereby develop plant based medicinal products for human and veterinary use as well as on Modern Medicine. The major scopes of the Directorate are:

- Document ethno-medical information of medicinal plants/practice,
  - Ethnobotanical survey of Medicinal Plants
  - Scientific review of publications and
  - prepare pharmacopeias, monographs and data base on traditional medicine

- Research On communicable diseases - Assessing the Efficacy, Safety and Quality of traditional medicine
  - Antimicrobial activity (Antibacterial, Antifungal, Antiviral, Antimycobacterial, wound healing, …)
  - Antiparasitic (Malaria, Helmenthic leshmaniasis, trypanosomiasis
  - disease of priority public health problems of communicable and Non-communicable Diseases

- Research On non-communicable diseases - Assessing the Efficacy, Safety and Quality of traditional medicine
  - Hypertension
  - Diabetics,
  - Mental Health
  - Cancer
  -

- Research On Insect control - Assessing the Efficacy, Safety and Quality of traditional medicine
  - Larvicidal activity
  - Repellant activity

- Research veterinary health:
- Antimicrobial activity,
- Hlmementics
- Ectoparasite

- Preparation of production package for scientifically standardized traditional medicine products
- Conducting Clinical Trial
- Conducting Quality versus efficacy and rational utilization of modern medicine
- Providing Information, Education, Communication and Training to the community and the researchers.
- Disseminate research outputs to the scientific community, policy makers and Community through technical report, publication, policy briefing, workshops and media forums.
- Survey surveillance of modern and Traditional Medicine
- Pharmacokinetic, pharmacodynamic and pharmacovigillane study on Modern and Traditional medicine
- To collaborate with drug development and production companies in the promotion and production of established effective traditional medicines.

**Deliverables of the Directorate**

1. Evidence to scientific community through publication, mass media or workshops
   1.1 Ethno-botanical information
   1.2 Safety, efficacy, and phytochemical
2 Production packages of herbal medicines.
3 Education – communication to the community on the safety, efficacy and rational utilization of traditional and modern medicine
4 Conserved medicinal plants.
5 Pharmacopoea and Medicinal Data base ~ through documented ethno-medical use and scientific reports.
6 Herbarium and botanical garden.
7 Data about the therapeutic efficacy, quality and other aspects of pharmaceuticals.
8 Data on health seeking behavior of the community for traditional healers and Modern medicine professional services

**Monitoring and evaluation mechanisms**

1. Strategic planning for Five years based
2. Periodically research review meetings to discuss the implementation of planned activities.
3. Annual activity plan output base evaluation
4. Individual BSC performance reviews.
5. Building strong Drug research army
6. Review of projects periodically and at the end of project life in terms of timelines, outcome, impact, sustainability and effectiveness
Publications of

Traditional and Modern Medicine Research Directorate

Books:

3) Abebe D, Debella A, Urga K Check list of Medicinal and Other Useful plants of Ethiopia, Camerapix Publishers Pvt. Ltd. Co., Camerapix publishers international; 2003

Proceedings

1) Proceeding of the workshop on Development and utilization of herbal remedies in Ethiopia 1996 Nazareth, Ethiopia
3) Proceeding of the National workshop on Khat habit and other Psychotropic drugs in the spread of HIV/AIDS and their impact on health and Socio-Economic wellbeing, May 23-24, 2005
4) Proceeding of the scientific review forum and technical report on pyrrolizidine alkaloid (PA) induced hepatic veno-occlusive disease (Hepatic VOD) from Northwest and Central zones of Tigray, Ethiopia, April, 2013, Addis Ababa
5) Proceeding of the Scientific Review Workshop on the ongoing efficacy and safety of Traditionally Used Medicinal Plants in Ethiopia November 2013, Ambo, Ethiopia
Publications

2000


2001


3.

2002


2003


2004

2005


3. Aberra Geyid, Dawit Abebe, Asfaw Debella, Zewdneh Makonnen, Frehiwot Aberra, Frehiwot Teka, Tesfaye Kebede, Kelbessa Urga, Kidist Yersaw, Teklele Biza, Bisrat Haile Mariam, Mulugeta Guta Screening of some medicinal plants of Ethiopia for their anti-

4. Hailemeskel Mekonnen. Evaluating bronchodilator, anti-respiratory distress effects and LD50 determination of hydroalcoholic extract of the leaves of Adhatoda schimperiana in animal model. MSc Thesis 2005


8. 2006


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1) Ashenafi Assefa, Kelbessa Urga, Daniel Melaku, Mulugeta Guta, Walelign Mekonnen: In Vivo Antimalarial Activities Of Nine Plants Used In Ethiopian Traditional Medicine: Jima medical Journal, 2007


5) Tadesse Egule, Getahun Telahun, Asfaw Debella, A. Fleke and Eyasu Makonnen, Haemonchus contortus: In vitro and in vivo anthelmintic activity of aqueous and


12) AmeleworkEshetu. Diuretic Efficacy and Safety Evaluation of the Crude extracts and Fractions of Thymus Serrulatus on mice. MSc Thesis 2007


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1) Ashenif Tadele, Kaleab Asres, Daniel Melaku and Walleligen Mekonnen In vivo Anti-inflammatory and Antinociceptive Activities of the Leaf Extracts of Clematis simensis Fresen Ethiop Pharm J 2009;27, 33-41


4) Temesgen Worku. Investigation of antihyperglycemic and Hypoglycemic activity of ajugaremotaand syzygiumguineense on mice. MSc Thesis 2009

5) GirmayAmare. Chronic effects of the aqueous extract of Syzygium guineense on some blood parameters and histopathology of liver and kidney of mice. MSc Thesis 2009

6) Ahmed Yasmine. In vitro and in vivo acaricidal efficacy of some medicinal plants against mange mites of sheep and goats in oromia zone of amahra regional state. MSc Thesis 2009


2010


2) Hirut Basha. In-vitro Anthelmintic Efficacy of Hydro-alcoholic extract of Embelia schimperi (enkoko) and Myrsine africana (kechemo) on hookworm Larva. MSc Thesis 2010

3) Hailu Wondimu. Major ectoparasites of small ruminants in Arsi zone of oromia region: prevalence, species composition and acaricidal efficacy of medicinal plants against lice of sheep. MSc Thesis 2010

4) Daniel Seifu Melka. Effects of some Ethiopian antidiabetic Medicinal plants on glucose and Insulin levels of type 2 diabetic animal Models. PhD Dissertation 2010

2011


3) Alemayehu Toma Mena Antihyperglycemic effect on chronic administration Of n-butanol fraction of ethanol extract of Moringa stenopetala leaves in alloxan induced diabetic mice. MSc Thesis 2011

4) Asrat Dawit Sub-chronic toxicity study of the crude methanolic fruit extract of Embelia schimperi VATKE on some blood parameters, liver and kidney of mice MSc Thesis 2011

5) Wondim Melkam. In-vivo diuretic activity evaluation of the fractions of Thymus Serrulatus MSc Thesis 2011

6) Tsegaye Negese In vivo acaricidal efficacy of Eucalyptus globulus and Cympobogon citractus against Sarcoptes scabieivarcaprea of goats in Kemise, oromia zone of amhara regional state MSc Thesis 2011
8) Tilahun Alemayehu. Hematological, biochemical and histopathological Effects of Gnidia stenophylla Gilg (thymelaeaceae) root Aqueous crude extract in swiss albino mice. MSc Thesis 2011
9) Sintayehu Kebede Toxicological study of the butanol fractionated root extract of Asparagus africanus LAM. on some blood parameters, liver and kidney of mice. MSc Thesis 2011
10) Effect of crude extracts and fractions of Moringa stenopetala (Baker f) Cufodontis leaves in normoglycemic and alloxan- induced diabetic 2011

2012


5) Asayebirhan Getachew. The Effect of Chronic Treatment with Aqueous Fraction of Gnidia stenophylla Gilg Root on Some Blood Parameters and Histopathology of Liver and Kidney in Mice. MSc Thesis 2013


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1. Ashenif Tadele, Asfaw Debella: Proceeding on “scientific review workshop on the ongoing efficacy and safety investigation of traditionally used medicinal plants in Ethiopia” Ethiopian Public Health Institute, 2013.
2. Abdu Hassen Musa. Acute and sub-chronic toxicity studies of butanol fraction of leaves of Moringa stenopetala in rats. MSc Thesis 2013
3. Freshet Assefa Antidiabetic activity of Ajuga remota BENTH (harmegusa) leaves in streptozotocin induced diabetic rats. MSc Thesis 2013
7. Laboratory investigation of epidemic dropsy in addis ababa, Ethiopia Especial Issue of epidemic Dropsy: Ethiopian Medical Journal 2013
9. Abinet G/Mickael Toxicological study of anti-ectoparasitic formulations comprised of essential oils obtained from C. citrates and E. globules mixed with J. curcas oil on Liver,

10. Ashenif Tadele, Marta Alemye, Negero Gemeda, Hirut Lemma, Christina Haile, Asfaw Debella, Getachew Addis, Berhanu Tesfaye, Yehualashet Belete, Abiy Abebe, Bekesho Geleta; Development of Dermatological Formulations of some Herbal Remedies claimed to have Antifungal Activities *Proceeding of Scientific Review on the Ongoing Efficacy and Safety Investigations of Traditionally Used Medicinal Plants in Ethiopia* Editors: Ashenif Tadele, Asfaw Debela November 15-17, 2013 Ambo, Ethiopia


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14. Berhanu Tesfaye Overview on the studies of some traditionally used medicinal plants against Diabetes mellitus *Proceeding of Scientific Review on the Ongoing Efficacy and Safety Investigations of Traditionally Used Medicinal Plants in Ethiopia* Editors: Ashenif Tadele, Asfaw Debela November 15-17, 2013 Ambo, Ethiopia


18. Christina Haile, Redwan Muzeyin, Melaku Gizaw and Daniel Atera **Dosage optimization and standardization of Moringa stenopetala seeds powder as water purifying agent** *Proceeding of Scientific Review on the Ongoing Efficacy and Safety Investigations of Traditionally Used Medicinal Plants in Ethiopia* Editors: Ashenif Tadele, Asfaw Debella November 15-17, 2013 Ambo, Ethiopia


2014


5) Yehualashet Belete, Yared Debebe, Abiy Abebe, Temesgen Menerbu and Asfaw Debella Quantitative determination and optimization of extraction conditions for embelin in embelia schimperi by uv-vis spectrometry Journal of Drug Delivery & Therapeutics; 2014, 4(4), 10-13


8) Ashenif Tadele, Ashenafi Shumey and Neway Hiruy Survival and Predictors of Mortality among Adult Patients on Highly Active Antiretroviral Therapy at Debre-Markos Referral Hospital, North West Ethiopia; A Retrospective Cohort Study J AIDS Clin Res 2014, 5:2

9) Ashenif Tadele (MSc) Neway Hiruy (MD,MPH) , Ashenafi Shumye (MPH) Adverse Drug Reactions of Highly Active Antiretroviral Therapy on Adult Patients at DebreMarkos Referral Hospital, DebreMarkos; Abstract Book on Ethiopia Ethiopian public Health Association, February 2014

10) Abenet G/Mickel. Toxicity studies of anti-ectoparasitic formulation comprising of oils from Cymbopogon citrates, Eucalyptus globules and Jatropha curcas on some blood parameters and histopathology of liver and kidney in mice. MSc Thesis 2014


14) Kissi Effect of combination therapy of HAART and aqueous extract of Nigella sativa seed on the hematological parameters in rats. *Research;*1:1063
15) Helmut Kloos1, Temesgen Menberu2, Ashenif Tadele2, Tebaber Chanie3, Yared Debebe2, Abiy Abebe2, Kidist Zealiyas2, Getnet Tadele3, Mebruka Mohammed2, Asfaw Debella2 Traditional medicines sold by vendors in Merkato, Addis Ababa: Aspects of their utilization, trade, and changes between 1973 and 2014
20) Abdu HassenToxicological studies of butanol fraction of *Moringa stenopetala* leaves in ratsEditor: Ashenif Tadele, Asfaw Debella Proceeding of Consultative Workshop on Moringa stenopetala to Maximize Its Potential uses Bishoftu, Ethiopia; May 22-23, 2014

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8. Ashenif Tadele , Neway Hiruy, Ashenafi Shumye Adverse Drug Reactions of Highly Active Antiretroviral Therapy on Adult Patients at Debre Markos Referral Hospital, Ethiopia: A Retrospective study Ethio J Pub Hlth Nutr 2016


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