



**MINISTRY OF SCIENCE AND TECHNOLOGY**

**PROGRESS REPORT FORMAT FOR  
GRANTED APPLIED RESEARCH**



## Progress Report Format for granted Applied Research

### 1. Project Information

Project Title	<b>Herbal Medicine Preparation and Plant Biodiversity Conservation in North Shewa Zone, Amhara Region, Ethiopia</b>
Name & Address of Principal Investigator	<b>Ermias Lulekal (PhD)</b> <b>Debre Berhan University</b> <b>Tel. 0911571806</b> <b>Email. zeaklog@gmail.com</b>
Amount of funding	<b>4, 150, 000 Birr</b>
Expected date of completion	<b>30 DECEMBER 2018</b>
Period covered by this report	<b>From: <u>2 June</u> to <u>30 Oct 2016</u></b>



Institution administering the grant	<b>Name of the Institution: <u>Debre Berhan University</u></b> <b>Address: Debre Berhan</b> <b>P.O.Box: 445</b> <b>Tel: 0118900345</b> <b>Email: dbu@ethionet.et</b> <b>Website: www.dbu.edu.et</b>
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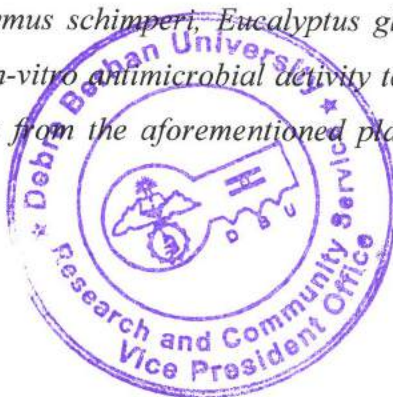
## 2. Project Overview

- a) List the planned activities and expected outputs to be implemented in the reporting period?

Activities planned for execution in the reporting period were conducting part of the documentation of indigenous knowledge, identifying endemic human and livestock diseases in the study area, training to the community and traditional healers on conservation and utilization of medicinal plants, conducting national symposium on biodiversity conservation, extracting desired components from different parts of the elite medicinal plants, carrying out *in-vitro* antimicrobial tests of the crude extracts in comparison with synthetic drugs and internationally certified herbal drugs, training to the University's pharmaceutical professionals on extraction, *in vitro* and *in vivo* testing, organizing and consulting farmers, small and medium enterprise and pharmaceutical industries to be involved in the traditional medicine development process. The outputs expected for the reporting period were to run part of the indigenous knowledge documentation on medicinal plants; strengthening conservation activities to medicinal plants, delivering a training to traditional healers of the study area, and running part of the *in vitro* tests on elite herbal medicines of the area.

- b) Summary of the project activities

*Essential oil analysis of extracts, identification of their physico-chemical characterization and in-vitro antimicrobial activity tests are effectively carried out. The key plants which are under serious investigation are Thymus schimperii, Eucalyptus globulus, Matricaria chamomilla and Rosmarinus officinalis. The in-vitro antimicrobial activity testing and safety analysis of extracts and primary herbal products from the aforementioned plants is 95% completed. Training for*



health professionals of the project staff was delivered at AAU, school of pharmacy in collaboration with Prof Eyasu of the latter University. Moreover, the project gears to an overall ethnomedicinal research on other potential medicinal plants of high informant consensus factor (ICF) in North Shewa Zone. Taking in to account the existing efforts linked to medicinal plants in the Zone, the contributions of outputs of this research to primary healthcare services, and the direction of the government towards traditional medicine, the project is also running activities related to *ex situ* conservation of more than 110 traditional medicinal plants and associated indigenous knowledge.

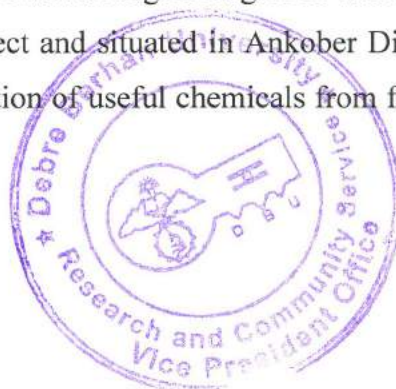
c) Provide a timeline and milestones for the entire project

The major milestones and corresponding timelines for the entire project are summarized below:

- Having well-documented list of medicinal plants and associated indigenous knowledge of the study area.....December 2016
- Running extraction and subsequent phytochemical screening of components of medicinal plants with high informant's consensus..... March 2016 - October 2018
- Carrying out *in-vitro* antimicrobial tests of extracts in comparison with synthetic drugs and internationally certified herbal drugs.....October 2016- October 2018
- Conducting *in-vivo* tests following standard procedures.....January 2017 - October 2018
- Formulation and standardization of herbal drugs, medicinal soap and latrine detergent from the crude extracts/essential oils of medicinal plants..... March 2017 - October 2018
- Organizing and consulting farmers, small and medium enterprise and pharmaceutical industries to be involved in the traditional medicine development process..... October 2017 - October 2018

d) Describe the main activities performed and discuss whether the performed activities are in agreement with the objectives of the study.

So the main activities addressed include documentation of part of the indigenous knowledge on medicinal plants, nursery expansion and strengthening of *ex situ* conservation of medicinal plants in the nursery (owned by the project and situated in Ankober District 42 Kms away from Debre Berhan University); and identification of useful chemicals from four major elite medicinal plants.



In-vitro antimicrobial testing of extracts from four medicinal plants is completed. Training for health professionals of the project staff was delivered at AAU, School of Pharmacy. All the activities carried out so far go in line with the project's objectives.

### 3. Progress Summary

a) Describe the main achievement during the progress of the report period?

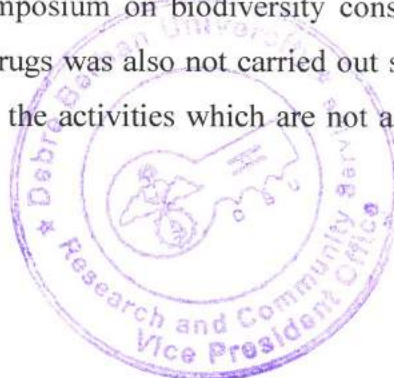
Among the major activities set to be implemented in the reporting period the activities achieved include, conducting part of the documentation of indigenous knowledge, extracting desired components from different parts of the elite medicinal plants, carrying out *in-vitro* antimicrobial tests of the crude extracts, running toxicity testing of crude extracts on experimental animals; training to the University's pharmaceutical professionals on extraction, *in vitro* and *in vivo* testing, nursery expansion and strengthening *ex situ* conservation of medicinal plants, and running website development for the project.

b) Describe preliminary results

Chemical constituents of *Thymus schemperi*, *Eucalyptus globulus*, *Matricaria chamomilla* and *Rosmarinus officinalis* were fully identified. Part of the results of toxicity study of crude extracts is completed in collaboration with AAU, School of Pharmacy. In addition, more than 110 medicinal plants are on *ex-situ* conservation practices. A trained project staff to run independent toxicity testing of extracts from medicinal plants is produced through a capacity building training and made ready for further actions.

c) If you did not achieve some of your stated planned activities in time reference, please explain the reasons and describe any problems that may exist about the project's progress

An activity planned to run a training to the community and traditional healers was not carried out due to busy schedule of the host institution and stakeholders under consideration. The same was true of conducting a national symposium on biodiversity conservation. Comparison of active extracts with effective synthetic drugs was also not carried out since the toxicity testing activity took too long for completion. All the activities which are not addressed in the reporting period



will be carried out in the coming month to catch up the time and activities and go on time as planned.

- d) Have any changes occurred in relation to the general project conditions/ project Set-up in the concerned reporting period? (e.g key persons, schedules, budget)

There is a change in the schedule since activities which should be addressed in the reporting period and not addressed as planned were pushed to the next quarter of the new year 2009 EC.

#### 4. Progress Status

Research work which remains to be done under the project

In the coming period the following project components will be addressed: further documentation of medicinal plants from representative districts of North Shewa Zone, running *ex situ* and *in situ* conservation of additional 6 important medicinal plants based on informants consensus and degree of threat, chemical screening and toxicity study of the additional 6 elite medicinal plants, developing herbal products (soaps, detergents, herbal creams and essential oils).



**5. Detail Project Expenses description for this reporting period**

(Please complete the final budget report. The budget should clearly reflect the activities conducted during the study period)

No.	Items	Utilized money in ETB		Amount of money Released in ETB		Remaining Balance	
		Birr	Ce.	Birr	Ce.	Birr	Ce.
	Nursery expansion for standard <i>ex situ</i> conservation of medicinal plants, and preparation of room for large scale essential oil extraction from medicinal plants	33,500	00	1,452, 500		1,419,000	
	<b>Total Expenses</b>	<b>33,500**</b>					
	NOTE***						

\*\* Shows the amount of money utilized from MOST's grant only during the first reporting period.

\*\*\* All the activities carried out during this (the second) reporting period were carried out by the co-fund obtained from the Research Directorate of Debre Berhan University allotted for the stated activities proposed earlier. Hence the remaining balance of the MOST's grant is yet the same i.e 1,419,000 for this reporting period too.

The institution certifies that all the information provided in the report is true and correct.

Name of the institution **Debre Berhan University**

Head of the institution

Name: Seife Getaneh (Ed.D.)

Signature: [Signature]

Date: 18/11/16

Vice President for Research and Community Service

