

1. FIRST NAME: **DABA ETANA**, LAST NAME: **RAGO**, SEX: **MALE**

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2. Bio data

1. Curriculum vitae



Personal information

First name(s) / **Daba Etana Rago**

Surname(s)

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E-mail dabaetana2018@gmail.com
originalformed@gmail.com

Nationality Ethiopian

Date of birth June 01, 1992

Gender Male (M)

Education **BSC degree in plant science** from Adama Science and Technology
University, June /2013G.C

Desired employment M.Sc Students at Jimma University School of Veterinary Medicine doing
/ Occupational field Research granted by Mobreed at University of Kwuzulu_Noatal, South
Work experience April 16, 2015 on wards

Occupation or position Assistance Researcher II. Served Muggi sub- centre of Jimma Research
held center as a director under Ethiopian Institute of Agricultural research
(EIAR)

Name and address of Ethiopian Institute of Agricultural Research (EIAR), based at Jimma
employer Agricultural Research Center (JARC), P.O.Box 192, Jimma, Ethiopia.

Type of business or Government Organization (Ethiopian Institute of Agricultural Research)

sector

Principal subjects covered at university ➤ **Graduation Paper:** Effect Euphorbia Abyssinica latex and IBA on stem cutting of *Arabica coffee*.

➤ **Senior seminar:** Management System of Stem borers on sorghum and maize in north eastern Ethiopia.

➤ Plant Breeding, Plant biotechnology, principles of design and analysis of agricultural research, Plant morphology, anatomy and taxonomy, soil fertility and plant nutrition, principles of plant genetics, plant pathology, agricultural entomology, Plant physiology, Plant Entomology, Weeds and etc.

Occupational skills

Designing and analysis of agricultural research, survey and data collection plant tissue culture techniques

Raw data by SAS, and R software

Name and type of organization providing education and training Jimma Agricultural research centre, Jimma, Ethiopia

Mother tongue(s) **Afan Oromo**

Other language(s)

Self-assessment

European level ()*

Understanding

Speaking

Writing

Listening

Reading

Spoken

Spoken

interaction

production

English

C1 Proficient B2 Independent

user user

C1 Proficient

user

C1 Proficient

user

B2 Independent

user

Amharic

C2 Proficient C2 Proficient

user user

C2 Proficient

user

C2 Proficient

user

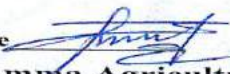


C2 Proficient

user

Organisational skills and competences ➤ Identification, prioritization and developing research question of problem associated with agriculture.

Awarded and certification ➤ Certificate of Academic Excellence at Adama Science and University, 2012.

Trainings	<ul style="list-style-type: none"> ➤ Participation on Ethics and anti corruption at Adama science Technology University March / 2013. ➤ Certified on participation of TEEAL and AGORA, at JARC, June/2016 offered by ITOCA. ➤ Certified participated on Training for Junior Researchers by EIAR at Debrezeit Institute of management, from 20 January to Feb 10/2017. ➤ Certified on participation of advanced honor training on coffee science organized by International Institute of coffee Research and Moyee Coffee Jimma University, Ethiopia, November/2017 and 2018. ➤ Legume Diversity Project Training from Jun2-23/2018 and Febr 23-march 15/2019.
Computer skills and competences	Competent with most Microsoft office programs (Ms-word, Ms-Excel, PowerPoint and others) and good experience in internet utilization.
Participations	<ul style="list-style-type: none"> ❖ Member of Plant Protection Society of Ethiopia (PPSE) ❖ Monthly Center level scientific forum. ❖ Daba Etana 2016. Progressive report on identification of molecular marker gene conferring CBD Coffee ❖ Research a Review in Coffee Arabica The 18th scientific forum of Jimma Agricultural Research Centre.
Presentation/s	

<p>References</p>	<p>Ashenafi Ayano Associate Researcher/ Coffee Breeder and Center Director EIAR, Jimma Research Center, P.O.Box 192 (office), Jimma, Ethiopia Tel +251-471-128020 & +251-471-110206(office) <u>+251-917808486</u> (cell phone) Fax +251-471-111999 Office E-mail: <u>jarcMelko@gmail.com</u> Website: <u>www.ciar.gov.et</u></p> <p>Abebie Megersa (PhD) Adama science and Technology University, Asella campus Tel: +251-221-110400 Fax: +251-221-100038 Email: <u>abebbe20megersa@gmail.com</u> Website: <u>www.astu.edu.et</u> P.O.Box: 1888 Adama Ethiopia</p> <p>I have assured all this information's are true Name <u>DABA ETANNA KAGO</u> signature </p> <p style="text-align: center;"><u>Endorsment And Authentication By Jimmma Agricultural Research Center Director</u></p> <p>I certify that the information provided by the researcher is true and correct. Name: Ashenafi Ayano Center Director Signature </p> <div style="text-align: center;">  </div>
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3. Major publications

- Not yet publication

4. Crops of interest:

- Spider plant (*Gynandropsis gynandra. L.*)

5. Summary of proposal

Title: The Combining Ability and Heterosis of Yield, Yield related and growth characteristics in Spider Plant (*Gynandropsis gynandra (L.) Briq.*) Genotypes

The Spider Plant (*Gynandropsis gynandra* (L.) Briq.) is one of most important African leafy vegetables. It plays an important role in food security in different African countries. Beyond this, it is also used for different purposes, such as medicinal values, income generation, and sometimes as a means of biological insect pest control. Spider Plants have adapted to wide varieties of agro climate, short life span and their growth is preferable in areas where there are short rainfall seasons due to their ability to resist water stress through high water use efficiency. Therefore, the Spider Plant is a single species used for multi-purposes in communities. However, scientific studies to collect samples, characterize and improve their genotypes are very low throughout wide areas under production. Specifically, Spider Plant breeding and studies on its genetic importance is limited. The benchmark work in improving any plant species should be based on its potential to combine and produce vigorous progeny. This is called combining abilities. Users often request improved varieties of the Spider Plant. To answer users' questions, studying genotype combining abilities, genes which govern the character of traits and performance of heterosis are most important breeding issues. This work takes this need into account to try to answer the question based on the following objectives:

General objective

- To generate information on Heterosis and Combining ability in the Spider Plant from different African countries genotypes

Specific objective/s

- To estimate spider plant heterosis mid-parent, and high-parent for yield, yield related and growth characteristics performances.
- To determine GCA and SCA of parental line and heterosis in all parameters of the study and recommend the superior ones to be advanced further towards study and release.
- To determine the relative magnitude of gene action (additive and non-additive) involved in controlling yield, yield related and growth characteristics.

Material and Methods

Study area: Experiments will be done in the field and in the green house at University of KwaZulu-Natal, South Africa

Materials: Twenty parental line and 100 F1 hybrids of these will be planted in the green house and transplanted to both the field and green house.

Experimental Design and Field Management: The experiment will utilize incomplete block design with two replications in the field and in beds in the green house.

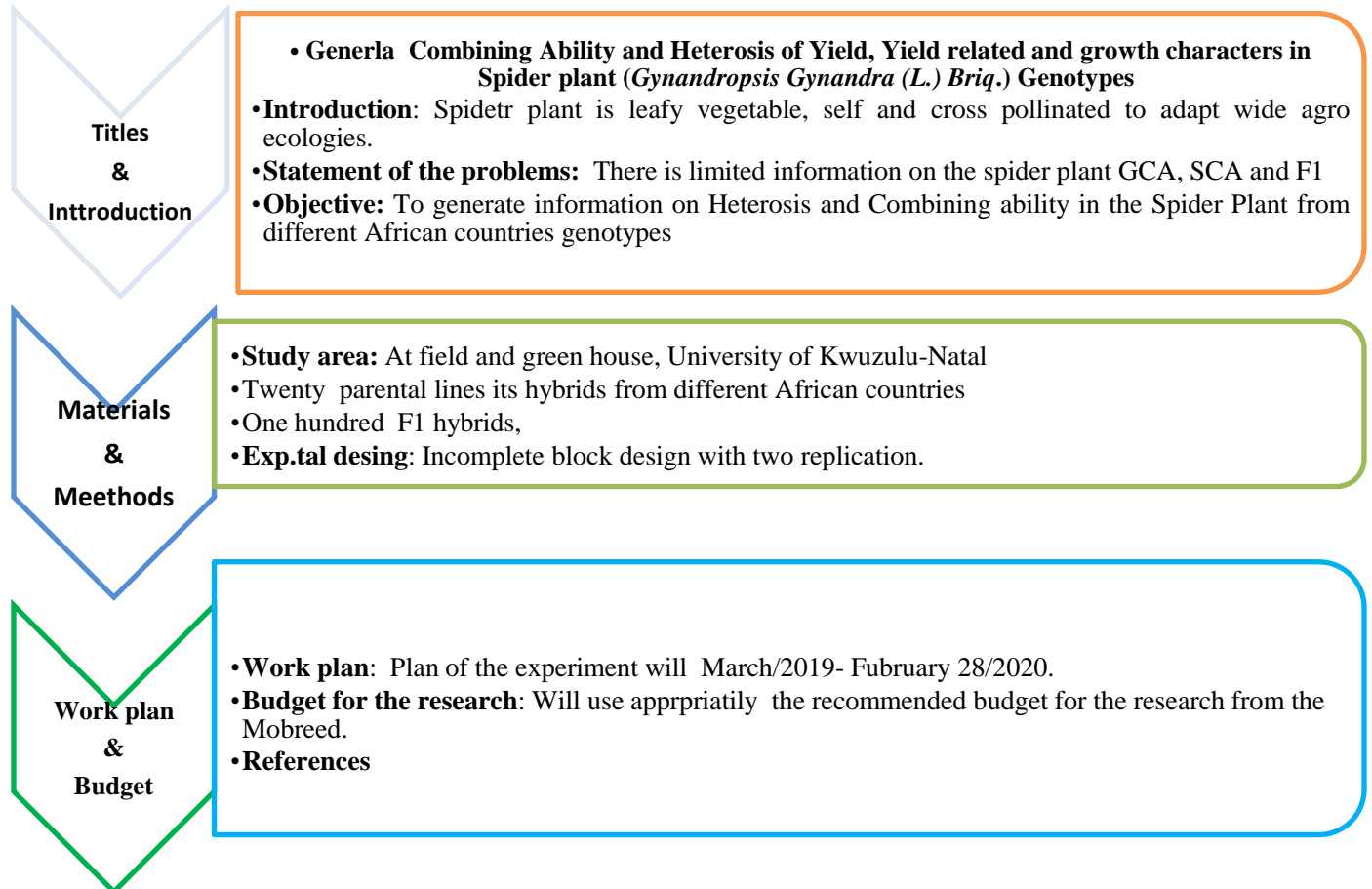
Data collected: Data will be collected from five randomly selected plants at middle. The 50% flowering, growth, yield and yield component data will be collected.

Data analysis: Data will be subjected to ANOVA using R software, version 3.6.0

Work plan

No	Work description	Period (2019/2020)	Status
1	Seedling and field preparation in Green house	March 2019	Complete
2	Transplanting to the field and green house beds and agronomic management	April	Complete
3	Data collection	May to June	Complete
4	Data entry and management	July to August	Ongoing
5	Data analysis and report writing	September	Forthcoming
6	First report and correction according to comments	October	Forthcoming
7	Final Report	November- December	Forthcoming
8	Thesis defense at home University (Jimma)	Jan-February/2020	Forthcoming

6. A graphic abstract of the research proposal



7. Personal comment about the Mobreed opportunity

- Mobreed works on multi dimensional projects in African countries. Those are:
 1. Searching for, identifying and collecting orphan crops which play important roles in the community
 2. Supporting students financially to develop the art and science of plant breeding potential for further improvements.
 3. Addressing the gap in African indigenous crops which play a crucial role in the work of majorities of rural and small scale farmers.

Comments: a. Research funding could be increased to allow for better research outputs.

- b. Time allowed for M.Sc work is somewhat limited. It would be reasonable to allow 12 to 15 months for the process.
- c. Training on software use and in other areas would be of benefit in the future.

8. Progress report

In 2019 cropping season, 120 genotypes have been evaluated in field and green house conditions at the University of KwaZulu-Natal, School of Agriculture, Earth and Environmental Science. The genotypes include: 20 parental lines and 100 F1 hybrids of them. The seedlings of all the genotypes were prepared in the green house in trays filled with vermin compost commercial soil (Fig 1). Transplantation was accomplished after three weeks of germination. The trial in green house and field conditions has been conducted by using incomplete block design using 2 replications. Each plot has been planted in 4 rows with 5 plants in each of the rows. The intra and inter row spacing was adjusted to be 20cm for both. Data on phenological, growth, physiological, yield and yield components has been collected from plants in both green house and field conditions (Table 1).

Similarly, the same number of genotypes has been evaluated at green house condition by using five beds each built from bricks, measuring 1.20 x 12m. In the greenhouse condition, a single row of 5 plants has been planted per plot. However, the same design as the field experiment has been used to evaluate this trial.

The performance of the trial was good and some promising hybrids and parental lines have been identified during field evaluation. The data entry is in progress and lines with high GCA and hybrids with high SCA are expected to be identified.

Table 1: Parameters of spider plants to be collected in the study

No	Parameters of the study	Measuring tools
1	50% Flowering date	Strictly follow the experiment and registration
2	Plant Height	Small Meter Tape (m)
3	Stem diameter	Automatic digital Caliper (mm)
4	Branching number	Count
5	Petiole length	Ruler (cm)
6	Central leaf length	Ruler (cm)
7	Central leaf width	Ruler (cm)
8	Leaf width	Ruler (cm)
9	Chlorophyll contents	SPAD
10	Harvested yield	Sensitive balance (g)

11	Edible Yield	Sensitive balance (g)
12	Photosynthetic efficiency	LICOR, 6400, USA
13	Transpiration rate	LICOR, 6400, USA

9. Useful pictures

1. Seedling on tray in green house



2. Seedling on tray



3. Field preparation and lay out



4. Green house well prepared beds and transplanted



5. Transplanted seedling on the beds in green house



Seedling on the beds in green house



Field performances

6. On field performance and data collecting

On field spider plant performances and data collecting



7. In Green house Performance



8. When physiological data collection with LICOR

Physiological data collection by LICOR



9. Harvestable and edible data collection on sensitive balance



Harvesting and measuring it is harvest and edible yields