Medicinal & Aromatic Plants
ISSN: 2167-0412

Banjaw et al., Med Aromat Plants (Los Angel) 2016, 5:6
DOI: 10.4172/2167-0412.1000278

Research Article Open Access

Aromatic and Medicinal Plants in Wondogenet Agricultural Research Center Botanical Garden, South Ethiopia

Dejene Tadesse Banjaw*, Wondimkun Dikir, Aynalem Gebre, Woldemariam Geja, Damtew Tsegaye and Yigermal Molla

Wondogenet Agricultural Research Center, Department of Crop Research, Ethiopia

Abstract

WondoGenet Agricultural Research Center is one of the national research centers in Ethiopia administered under Ethiopian Institute of Agricultural Research (EIAR). It is located about 267 km south of Addis Ababa with altitude ranges between 1760 and 1920 masl. Its mean annual rainfall and temperature 1372 mm and 19°C respectively. The center was established in 2009 being center of excellence in Aromatic, Medicinal and Biodiesel crops research. The main focus of the center is conducting and coordinating problem solving researches in the country on aromatic, medicinal and bio-diesel crops. Due to the varied topography and climate, Ethiopia is home to different plant species that grow on its highlands and rift valley. It was reported that 70-80% of the population and 80-90% of the animals uses traditional herbal medicine for their health care in Ethiopia.

Keywords: Medicinal aromatic; Herbal teas; Lamiaceae; Asteraceae

Introduction

WondoGenet Agricultural Research Center is one of the national research centers in Ethiopia administered under Ethiopian Institute of Agricultural Research (EIAR). It is located about 267 km south of Addis Ababa with altitude ranges between 1760 and 1920 masl. Its mean annual rainfall and temperature 1372 mm and 19°C respectively. The center was established in 2009 being center of excellence in Aromatic, Medicinal and Biodiesel crops research. The main focus of the center is conducting and coordinating problem solving researches in the country on aromatic, medicinal and bio-diesel crops. Plants have always been used extensively by humans for food, fuel, construction, clothing, medicine, decoration, cleaning, perfuming, lubricating and for aromatic purpose. Of these aromatic and medicinal plants are of high importance as they play a valuable and important role in economic, social, cultural and ecological aspects of local communities.

Due to the varied topography and climate, Ethiopia is home to different plant species that grow on its highlands and rift valley. It was reported that 70-80% of the population and 80-90% of the animals uses traditional herbal medicine for their health care in Ethiopia [1-5]. However, many plant species are facing threats of extinction due to over and improper exploitation, habitat loss, and fragmentation and urbanization pressure. Any misuse and threat to these valuable resources will not only jeopardize the health of millions of people in Ethiopia, but will also affect the livelihoods of resource poor farmers and communities that depend on them. On the other hand, the increasing global demand for aromatic and medicinal products accelerated conservation cultivation, and marketing of the plants. Thus great attention was given to collection, maintenance, production, and processing and utilization technologies of those endemic and exotic aromatic plants.

The collection and recording of Aromatic and medicinal plants list is important for the categorizing and understanding of these plants that are freely available to users. Therefore, this study provides an overview and discussion of aromatic and medicinal plants collected and maintained at woondogenet agricultural research center.

Methods

Wondogenet agricultural research center botanical garden is about 1.5 hectare of land and newly established for the purpose of conservation, maintenance, research and education of endemic and introduced plants species. It contributes a lot in adapting, developing, diversifying and promoting the production, processing, and marketing and utilization technologies.

Twenty six aromatic and medicinal plant varieties registered in Ethiopian were being maintained in this botanical garden. The botanical garden provides plants for research, education and for conservation purposes. Local small scale farmers, commercial farms, local NGOs engaged in distillation works, universities and traditional herbalists are the main beneficiaries.

Available proceedings, research journals, books and cultivation guide lines were used to gather available information about aromatic medicinal plants. In addition, 15 years strategic plan of the sector was consulted for information.

Very experienced and familiar people were participated in conducting this work in order to provide valuable information to the users. Great care was given to identify and record each plant. Traditional healers were participated in identification of plants and their parts used to emphasize economic importance.

Information about the plants and the properties attributed to each plant, the plant part, life form, habitat and propagation technique was compiled. The information also included very important economical plants used as spice, health care, food, insecticide, conservation, beverages, and herbal teas. Priority crops of the research center critically identified and registered.

***Corresponding author:** Dejene Tadesse Banjaw, Wondogenet Agricultural Research Center, Department of Crop Research, Ethiopia, Tel: +251461190702; E-mail: dejenebanjaw@gmail.com

Received November 21, 2016; **Accepted** December 05, 2016; **Published** December 12, 2016

Citation: Banjaw DT, Dikir W, Gebre A, Geja W, Tsegaye D, et al. (2016) Aromatic and Medicinal Plants in Wondogenet Agricultural Research Center Botanical Garden, South Ethiopia. Med Aromat Plants (Los Angel) 5: 278. doi: 10.4172/2167-0412.1000278

Results and Discussion

Twenty seven plant families having sixty one plant species were identified. Species that belong to Lamiaceae family hold greater number of species and followed by Asteraceae family. Most widely used aromatic and medicinal plants and their parts used were identified. Leaves are the most widely used plants part for aromatic as well as medicinal purposes. Besides, roots, fruits, flower and bark are some important parts of plants used in fresh and dry forms. Essential oil can be obtained from such parts and used in different industries. Lemon grass, citronella, eucalyptus, geranium and mint are some among the most widely used plants for oil production. Leaves, roots and flowers are the three most frequently used parts of aromatic and medicinal plants. Cultivation techniques such as plowing, planting, watering, fertilizing, hoeing, weeding extra, of these plants directed to increase their economical parts. Different parts of aromatic and medicinal plants used for primary human and animal health care. Such plants parts harvested and prepared in different herbal fresh, dry and essential oil form for local and industrial consumption of the plants (Figures 1-3).

Conclusion

This study was conducted to identify available aromatic and medicinal plants at wondogenet agricultural research center, south Ethiopia and so as to generate information for users. It listed plants that can be used for traditional medicine, traditional spice, modern medicines, cosmetics, pesticides, conservation purposes, ornamental, herbal tea, and beverage and food industries.

These available plants should be maintained and serve as source for planting material that can be used by local farmers, governmental and nongovernmental commercial farms, and others users. Consequently, additional economically important and endangered plants from whole country should be collected and conserved so as to increase diversity and to reduce plants erosion.

Further study should be done for variety development and management practices so as to enhance production, processing and utilization technologies of aromatic and medicinal plants.

Acknowledgements

We would like to acknowledge Wondo Genet Agricultural Research Center for giving necessary supports for the experiment. Our heartfelt thanks also go to Medihanit Yisihak for her active participation.

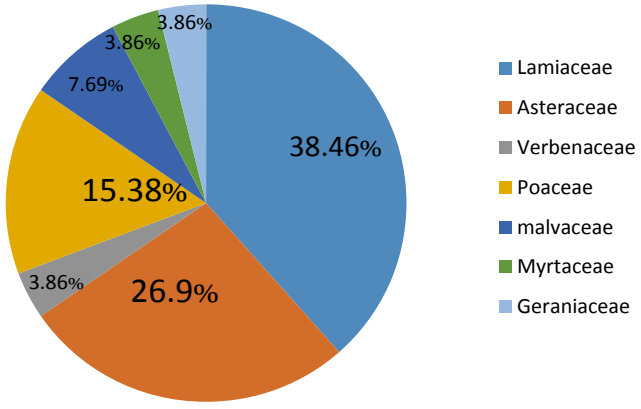

Figure 1: Shows distribution of crop varieties developed, evaluated and registered and being maintained at wondogenet agricultural research center botanical garden. Lamiaceae family constitutes 38.46% and Asteraceae family 29.6%.

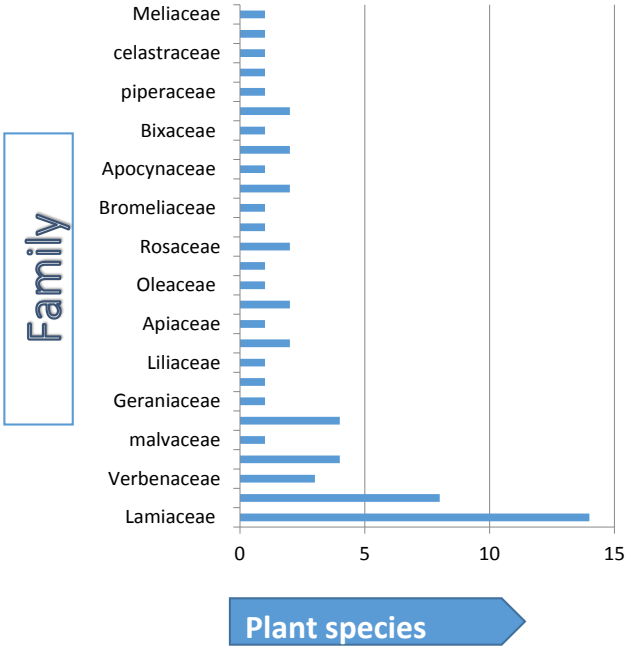

Figure 2: Graphical representation of plant species and their families.

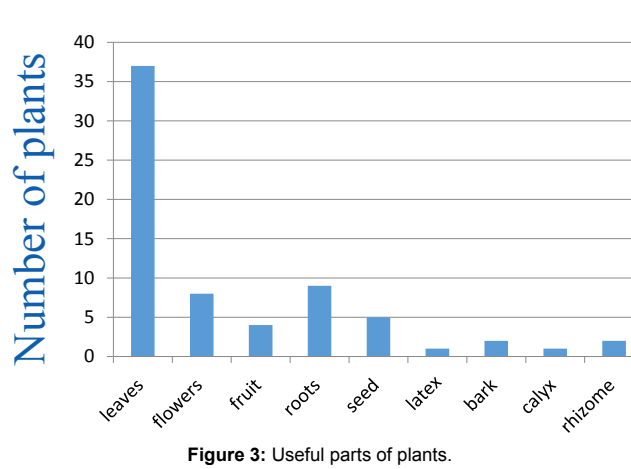

Figure 3: Useful parts of plants.

References

1. Kebedea S, Travia Y, Alemayehub T, Marc V (2006) Water balance of Lake Tana and its sensitivity to fluctuations in rainfall, Blue Nile basin, Ethiopia. J Hydrology 316: 233-247.
2. Bekele E (2007) Study on Actual Situation of Medicinal Plants in Ethiopia.
3. Kassahun BM, Tilahun S, Zigene ZD, Teferi Z, Mekonnen M, et al. (2014) Morpho-agronomic Characteristics, Essential Oil Content and Essential Oil Yield of Oregano (*Origanum vulgare L.*) in Ethiopia. Scholarly Journal of Agricultural Science 4: 565-571.
4. FAO (2012) Health and from medicinal aromatic plants. Rome.
5. Sujarwo W and Arinasa IBK (2014) Journal of Indonesian Natural History. Aromatic Plants in Bali Botanic Garden Indonesia 1: 35-39.