

Introduction

Ethiopia, being the center of origin and diversification for *Coffea arabica* L., is believed to have immense possibilities to improve the crop for desirable traits of agronomic and breeding interest than any other countries. In Ethiopia, comprehensive coffee breeding program started in 1971 (Bayetta and Labouse, 2006) under the coordination of Jimma Agricultural Research Center (JARC). Since then, several breeding and genetics research initiatives have been carried out, among which collection and characterization of coffee genetic resources and generation of superior coffee varieties through selection and hybridization program being the most significant ones.

Materials/Methods

- The database of the ex-situ conserved coffee genetic resource at the main center, Melko, and its sub-centers was used to summarize the germplasm that has been collected and preserved so far.
- The number of released coffee varieties were compiled from breeding database and previously published literatures (Tadesse et al., 2017)

Conclusion/Perspectives

Currently, climate change increases the frequency and intensity of some disasters such as drought, incidence of pests and diseases. Collection of coffee genetic resource from unaddressed areas, application of modern breeding techniques such as marker assisted selection and breeding for stress tolerance, among others, would be the main focus areas of future coffee breeding program.

References:

- Bayetta B. and Labouisse JP., 2006. Arabica coffee (*Coffea arabica* L.) local landrace development strategy in its center of origin and diversity in 21th international scientific colloquium on Coffee. 11-15 September 2006.
- Tadesse, B. 2017. Progress in arabica coffee breeding in Ethiopia: Achievements, challenges and prospects. *International Journals of Sciences: Basic and Applied Research (IJSBAR)* 33 (2): 15-25.

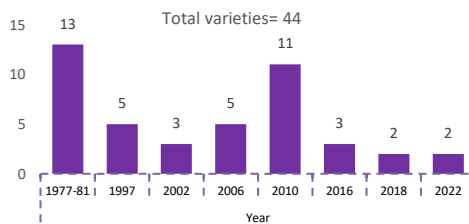


Figure 1: Improved coffee varieties

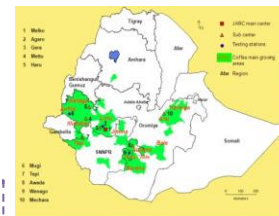


Figure 2. Germplasm Conservation site

Table 1: Summary of germplasm collection

Program/Type	Year of collection	Number of accessions
National Collection	1966-1990	1633
Exotic Collection	1968-1984	190
CBD Selection	1973-1987	868
Local Landrace	1994-2020	4376
Total		7067

Variety development

Pure line selection and hybridization are commonly used breeding approaches in variety development program. Since the beginning of the coffee breeding program, about 44 coffee varieties developed; among which nine are hybrids and 35 are pure line varieties (Fig 1).

Germplasm collection and utilization

Keeping in mind the availability of genetic diversity of coffee and using them for various breeding interests, efforts have been made to collect and preserve coffee genetic resource from different coffee growing areas in the country. Outstanding achievements have been recorded in collecting more than 7000 germplasm accessions (Table 1). These genetic resources conserved in field genebanks at the Jimma, Melko center and its sub-centres (Fig 2). In addition, currently more than 150 promising selections were identified and promoted to advanced breeding stages for variety development .