

A COMPARATIVE STUDY OF GENETIC DIVERSITY OF FOUR MAJOR CROPS MANAGED OF ETHIOPIA

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Ethiopia is a center of origin and diversity for many cultivated crops and their wild relatives. The country is located near Equator, but due to altitudinal variation it experiences a temperate climate, especially at altitudes of more than 2000 meters above sea level. Altitude ranges from 120 meters below sea level at Dalol depression to 4620 meters above sea level at the top of mount Ras Dashen. In addition, soil variation, ecological diversity, substantial temperature and rainfall variations, and diverse social and cultural conditions have produced suitable environments for genetic variation of crop varieties. The objectives of this study was to compare the genetic diversity among four crops in Ethiopia of which two crops have Ethiopia as their center of origin (sorghum and tef) and two crops have Ethiopia as a secondary center of diversity (barley and wheat). The study focuses on comparing (1) whether the amount of variation in these different crops varies with population size or not and (2) whether farmers are consistent in naming and describing their varieties for these four crops. Diversity was measured by number of farmers varieties grown for each crop and their distribution across the regions by applying diversity indices of Simpson and Shanon-Weaver across altitudinal ranges, latitudes, longitudes and ecological regions. It was found that there was equal amounts of diversity for the crop plants of Ethiopian origin and for the crops where Ethiopia is a secondary gene center in diversity.