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Genetic improvement of soybean in Ethiopia: implications for the countries agricultural growth and development

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Introducing leguminous crops, like soybean, into the cropping system, which is dominated by mono-cropping of maize, has strategic significance in reducing malnutrition, sustainable soil fertility management and raw material for oil, food and feed processing industries in Ethiopia. Hence, various governmental and non-governmental organizations made concerted efforts to scale up its production, and the total production of soybean reached 70,000MT in the year 2013, which was nil in the years 1999-2001. However, the national average productivity of the crop is very low ( $1.9 \text{ t ha}^{-1}$ ), compared to its productive potential in the research stations and other countries. Several factors contributed to the low productivity of the crop, although very weak marketing system, low productive potential of the improved varieties and weak seed system are the most important ones. The low productive potential of the improved varieties is mainly due to lack of resistance to existing and emerging diseases and insect pests, tolerance to abiotic stresses. Consequently, variety development efforts are underway by the breeding programs in the country, and currently over 23 soybean varieties were released, and nineteen of these varieties were re-evaluated for their performance in Jimma Research Center for three years (2014-2016) and four varieties i.e., Nyala, Cocker 240, Williams and Afgat showed superior performance with respective productivity of 4.2, 3.9, 3.7 and  $3.2 \text{ t ha}^{-1}$ . Besides, rust has been the major production constraint in the country, and large number of germplasm were screened for two years in two locations, and more than 15 genotypes showed resistance. Insufficient availability of germplasm was also the major limitation of soybean breeding in the country, and hence, introduction and development of inbred lines from segregating populations has been underway every year. Modified single seed descent method was identified as the appropriate procedure to evaluate segregating populations and develop inbred lines.