Poster Session | Crop Genetics and Physiology | P4: Poster Session

# [P4] Crop Genetics and Physiology
2021年9月9日(木) 12:15 ～ 14:00 Room 4 (Poster) (Crop Genetics and Physiology)

13:15 ～ 14:00

[P4-10]Genetic Diversity of Foxtail Millet (*Setaria italica*) Landraces of Taiwan

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Foxtail millet (*Setaria italica*), a symbolic crop for indigenous peoples in Taiwan, has been cultivated for more than 5,000 years. Through a long term of adaptation to various environments of different altitudes and latitudes and of preferences for food and cultural applications, the landraces preserved by in indigenous peoples exhibit great diversity revealed by plant morphology and grain quality. The aim of this study is to understand the genetic diversity of Taiwan landraces revealed by molecular markers. A diversity panel of 211 foxtail millet accessions, including 154 Taiwan landraces, 8 Taiwan cultivars, and 49 India landraces, were sequenced by the genotype-by-sequencing (GBS) method, and 13,720 high-quality SNPs were obtained. After eliminating high genetic similarity because of repeated collection, a core population of 153 accessions was further selected for genetic diversity analysis. Taiwan landraces exhibited high levels of genetic diversity and moderate population structures, while Indian accessions were much differentiated from Taiwan landraces. Three major genetic subpopulations were constructed which were in concordance with geographical regions and the accessible breeding histories. An obvious phylogeographic relationship and gene flow could be observed in our study, for which the samples collected from boundary regions were admixed. This study revealed the genetic diversity of foxtail millet landraces of Taiwan is highly diverse, providing good germplasm for foxtail millet breeding.