Genetic diversity analysis of barley landraces and cultivars in the Shanghai region of China


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ABSTRACT. We analyzed the genetic diversity of 115 barley germplasms, including 112 landraces and three new barley cultivars grown in the Shanghai region, using a set of 11 SSR markers. Sixty-six alleles were observed at the 11 SSR loci, ranged from three to ten, with a mean of six alleles per locus. The polymorphism information content ranged from 0.568 to 0.853, with a mean of 0.732, indicating considerable genetic variation in barley in the Shanghai area. Clustering analysis indicated that these barley accessions could be divided into two categories (A and B). Ninety-seven six-rowed barley cultivars were classified in the A category; sixteen two-rowed and two six-rowed barley cultivars were classified in the B category. This demonstrated genetic differences between two-rowed and six-rowed barley varieties. In addition, we found that the three new barley cultivars are closely related.

Key words: Barley landraces; Hordeum vulgare; Genetic diversity; SSR markers; PIC