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Combining ability for grain yield and physiological maturity in early generation inbred lines of maize

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An investigation on early generation testing for combining ability in maize was carried out at the Seed and Plant Institute Improvement during years of 2010-2011. The experimental material comprised of 30 crosses generated by crossing 15 S_3 lines derived from different pool and 2 testers in line x tester design. Observations were recorded on days to Physiological maturity and grain yield/hectare. The combining ability analysis showed that mean squared lines is significant for both traits, which indicates that the additive variance is effective in controlling these traits. The ratio of additive to dominance variance was less than one for all the traits, indicating higher non additive than additive variance. Among the 15 lines, 5, 4 and 8 had the best general combiner for grain yield. From the present investigation it is proposed to plan hybrid breeding program with proper choice of promising material. Therefore lines 5, 8, 4 and 14 are more suitable than others for increasing grain yield, and lines 9, 11 and 14 are proper for early maturity.

Biography

Zibandeh Dehghanpour is currently an Assistant Professor and Maize Breeder in Seed and Plant Improvement Institute, Iran

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