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8th World Congress on Agriculture & Horticulture

and

16th Euro Global Summit on FOOD & Beverages

March 02-04, 2017 Amsterdam, Netherlands

Analysis of yield and yield attributing traits of maize genotypes in Chitwan, Nepal

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4 maize genotypes were evaluated at National Maize Research Program (NMRP), Rampur, Chitwan, Nepal with objective to explore genetic variability and investigate yield and yield attributing traits from 22nd October, 2014 to 12th April, 2015. The experiment was designed in randomized complete block with three replications. Phenotypic observation was taken for important quantitative traits viz. Soil Plant Analysis Development (SPAD) reading, days to 50% tasseling, days to 50% silking, ear height, plant height, days to physiological maturity, ear length, ear girth, ear weight, number of kernel row ear-1, number of kernel row-1 and five hundred kernel weight. The result showed that traits plant height, ear height, ear length, ear girth, ear weight, no. of kernel row per ear, no. of kernel per row exhibited positive and highly significant correlation with grain yield per hectare while SPAD readings and 500 kernel weight given significant correlation. The analysis also indicated that days to 50% tasseling and days to 50% silking explained negative and highly significant correlation with grain yield per hectare. Similarly, days to maturity showed negative and non-significant correlation with grain yield per hectare. The result also reflected that genotype ARUN-1EV has been found comparatively superior to ARUN-2 for major yield components. The genetic study revealed that days to silking, days to tasseling and grain yield per hectare were highly heritable (>0.6). Higher GCV and high GAM indicated efficient indirect selection for higher grain yield per hectare based on these traits. Thus, high GAM and GCV was observed in ear weight, grain yield per hectare and ear height. Correlation analysis revealed that the traits plant height, ear length, ear girth, number of kernel per row, ear weight were most yield determinative traits and hence, simultaneous selection for these traits might bring an improvement in grain yield. The research gave the finding that use of ARUN-1EV can be reliable for further research and breeding programs.

Biography

Bikal Ghimire is an Erasmus Mundus Scholar, pursuing his Master's degree in Erasmus Mundus Joint Master Degree in Plant Health in Sustainable Cropping System. Currently, he is pursuing his first year of degree at University of Goettingen, Germany and will study his second year at University of Italy, Padova. This work was from his Bachelor's study research program where he studied about the yield attributing traits in maize as his major.

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