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Correlation and path coefficient analysis of yield and its component traits in quality protein maize (*Zea mays* L.)

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ABSTRACT : The investigation was carried out at T.C.A., Dholi Farm of Rajendra Agricultural University, Pusa during rabi, 2010-11 and kharif, 2011 using 08 Quality Protein Maize (*Zea mays* L.) inbred and their 28F_1's with two checks to determine the association of grain yield with yield components and with quality traits and the extent of direct and indirect effects of various traits. The F_1's were made in half diallel mating design during rabi, 2010-11. The data were recorded for days to 50% silk, days to 50% maturity, plant height, ear height, ear length, ear girth, number of kernel rows per ear, 1000-grain weight, tryptophan percentage in kernel protein, protein percentage in kernel, and grain yield. Positive and significant correlation were found for days to 50% maturity, plant height, ear height, ear length, ear girth, number of kernel rows per ear, 1000-grain weight with grain yield. Negative and significant correlation was found for days to 50% silk with grain yield. Quality traits like protein percentage in kernel and tryptophan % in kernel protein had non significant correlation with grain yield. Phenotypic path coefficient analysis revealed that the direct effect on grain yield was high and positive for 1000-grain weight (0.6302) and low and positive for ear girth (0.1921) and plant height (0.1028). Indirect effect revealed that ear girth (0.5315), ear length (0.5021), plant height (0.4548) and ear height (0.3990) had positive and high indirect effect on grain yield via 1000-grain weight and low and positive indirect effect on grain yield via ear girth. Similarly, number of kernel rows per ear (0.2766) and days to 50% maturity (0.2772) showed moderate and positive indirect effect on grain yield via 1000-grain weight.

Key Words: *Zea mays* L., correlation coefficient, path analysis, Quality Protein Maize (QPM).