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Effects of seed priming methods on germination and seedling development of winter maize (*Zea mays* L.)

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ABSTRACT : Successful establishment of plants largely depends on successful germination. This study examined the effects of different methods of seed priming on germination percentage, germination index, time of 50 per cent emergence, mean germination time, root and shoot length, dry weight of seedling and vigour index of maize. The experiment was conducted in the laboratory of Department of Agronomy, Indira Gandhi Krishi Vishwavidyalaya, Raipur (Chhattisgarh) during 2013-14 using Completely Randomized Design with three replications. All growth and developmental parameters of maize seed were positively responded with seed priming in comparison to unprimed treatment. Bio-priming of maize seed for 24 hours showed the highest positive effect on all the parameters and recorded significantly highest values of germination percentage (93.11), germination index (29.84), root length (22.73 cm), shoot length (19.67), seedling dry weight (1.56 g) as well as seedling vigour index (3947.49). The level of T_{50} (1.51 days) and MGT (2.14 days) were the lowest due to bio-priming for 24 hours in comparison to other priming treatments.

KEY WORDS : Methods of seed priming, Winter maize, Germination, Root and shoot length-vigour index

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