STUDY OF BALANGOU (LALEMANTHIA ROYLEANA L.)
GERMINATION ATTRIBUTES AND SEED VIGOR UNDER SALINITY STRESS

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Balangou (Lalemanthia royleana L.) seed is a good source of polysaccharides, fibre, oil and protein and has some medicinal, nutritional and human health properties is an annual plant of the Lamiaceae family. This seed adsorbs water quickly when soaked because of high mucilage content and produces a sticky, turbid and tasteless liquid, which can be used as a novel food hydrocolloid in food formulations. Soil and water salinity in arid and semi-arid regions, is one of the most important stresses, can severely limit crop production. This study was conducted to evaluate the effects of saline stress on seed germination base a completely randomized design (CRD) with three replications. The salinity stress were including: (0, 40, 80, 120 and 150 mM) and treated by applies of NaCl. The results showed that saline stress had a significant effect (p≤0.01) on quality and quantity of seedling parameters. Among pretreatment, 120 mM had the most positive effect on germination coefficient (GC), seed vigor and mean germination time (MGT). In order hand, these seeds at the minimum time had the most germination rate. The most and least rate of germination was obtained by control and 120 mM respectively. So under different level of saline stress, 80 mM had useful effect on radical length, more lateral roots and higher proportion of root to plumule, and the most root and plumule fresh weight was obtain by 120 mM treatments. In this research, Nutrient concentrations for Na\(^+\), K\(^+\), Ca\(^{2+}\), Mg\(^{2+}\) and Cl\(^-\) were determined. So pretreatment of 120 mM reduced number of abnormal seedlings. Overall, application of 80 mM salinity on seed suggested for obtain uppermost germination characters.

References