

Artificial Seed Production in *Stipagrostis pennata*

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Abstract : *Stipagrostis pennata* is one of the valuable fodder plants and is very resistant to drought, due to the low capacity of seed production, the use of asexual reproduction methods, including somatic embryogenesis and artificial seed, can increase its reproduction on a large scale. This study was conducted in order to obtain optimal treatments for the production of artificial seeds of this plant through the somatic embryo encapsulating. Embryonic calluses were encapsulated using sodium alginate and calcium chloride and then sowed in a germination medium. The experiment was conducted as a factorial based on a completely randomized design with three replications. The treatments include three concentrations of sodium alginate (1.5, 2.5, and 3.5 percent), two ion exchange times (20 and 30 minutes,) and two artificial seed germination media (hormone free MS and MS containing zeatin riboside and L-proline). Germination percentage and number of days until the beginning of germination were investigated. The highest percentage of artificial seed germination was obtained when 2.5% sodium alginate was used for 30 minutes (ion exchange time) and the seeds were placed on the germination medium containing zeatin riboside and L-proline.

Keywords : somatic embryogenesis, *Stipagrostis pennata*, synthetic seed, tissue culture

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