PLANT REGENERATION OF CREEPING BLUESTEM (*SCHIZACHYRIUM SCOPARIUM* (MICHX.) NASH VAR. *STOLONIFERUM* (NASH) J. WIPFF) VIA SOMATIC EMBRYOGENESIS[1]

by

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Abstract. Currently, most phosphate mine reclamation work (excluding colloidal phosphate settling ponds and gypsum stacks) involves reshaping the landscape and returning overburden, followed by establishment and management of *introduced forage crops* for pasture. Herbaceous native plants have never been used, except on a small experimental basis. Use of native grasses has been further limited because establishment is frequently poor due to the inferior quality of plant material, and seedlings lack vigor and compete poorly with weeds. One objective of our research has been to develop methods for increasing the quantities of suitable propagules for use in mine reclamation. Embryogenic callus growing on solid medium was induced to form pre-embryos in cell suspension culture, with subsequent maturation (~18 weeks) of the embryos on solid medium. Shoots and roots were initiated on solid medium without growth regulators in 2 to 3 weeks. The optimal medium for further development of the plantlets was on MS + 2,4-D (3 mg/l) + BA (1 mg /L) + GA_3 (1 mg/L) + NAA (0.5 mg/L) + casein hydrolysate (500 mg/L) + 10% (by vol.) coconut milk. Rooted plantlets were transplanted into soilless medium (pine bark: Canadian sphagnum peat:sand, 3:1:1, by vol.) and acclimatized to greenhouse (4 weeks) and outdoor conditions. With this protocol, over 90% of the tissue-cultured plantlets have survived transplanting and acclimatization. Initial growth of the tissue-culture plantlets appeared to be faster than those propagated by division. Tissue-cultured plantlets flowered normally.

Additional Key Words: reclamation, tissue culture, native grass

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