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## Efficient Plant Regeneration through Somatic Embryogenesis from Seed in Zoysiagrass

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### Objectives

Zoysiagrass is one of the most important warm-season grass in Korea. Recently, genetic transformation has been used to improve turfgrass varieties, because conventional breeding showed slow progress and low efficiency. Unfortunately, however, few reliable regeneration system in zoysiagrass has been reported so far. Therefore, we describe here more efficient and fast regeneration system in zoysiagrass.

### Materials and Methods

1. Plant materials : caryopsis, sprout, stolon (node and internode) of *Zoysia japonica*, S94, *Commom sinica*
2. Methods: callus culture, somatic embryogenesis

### Results and Discussion

The available of an efficient regeneration system through somatic embryogenesis is a requirement for transformation approach. In this study, calluses were initiated mainly from the cut end or cutting surface area of explants contacting with medium following 3-4 wk of culture. The embryogenic calli (EC) were induced at 45-65% within 6 wk from caryopsis which were cultured on N6 medium, supplemented with 1-1.5 mg of BA (Fig. 1. left). Further, once embryogenic calli were induced, they were proliferated well using MMS (modified MS medium) containing several vitamins. The majority of proliferated EC culture (ca. 60-70%) were developed into somatic embryos and they were germinated in a month on MS medium containing 0.5 mg BA, 35g/l sucrose and 5.5g/l plant agar (Fig. 1. right). All regenerated plants have shown normal morphological features compared to control plants. An optimized regeneration protocol here can be used for the development of transgenic turfgrass in the future.

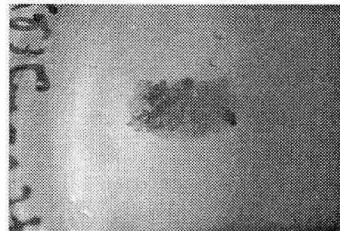
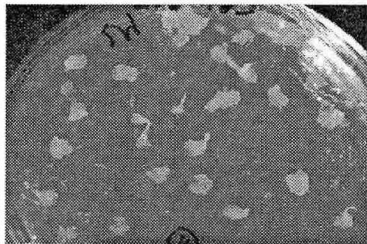


Fig. 1. Embryogenic callus formation (left) and regeneration of somatic embryos (right) in *Z. japonica*