

OP180
**Breaking Seed Dormancy under *In vitro* Germination of *Indigofera zollingeriana*
Storage**

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Aim of the study: Indonesia is a country consisting of >18000 islands and with third largest area of rainforests in the world is home to 10 percent of the world's known plant species. *Indigofera zollingeriana* is an important forage plant species that grows widely in Indonesia for livestock feeding because of high protein contents. *I. zollingeriana* has small seed and number of seeds is 5-7/pod with 64-82% of pithy seed. Seed germination reduces rapidly with the passage of time. Seeds stored for 2 months has viability of 28-35% only. The aim of this research was to study the factors affecting seed viability under in vitro conditions.

Material and Methods: *I. zollingeriana* seeds were collected from the Department of Nutrition Science and Feed Technology, Bogor Agricultural University, Indonesia. The seeds were stored under ambient conditions of room temperature for one year followed by their treatment with sandpaper. Thereafter, the seeds were scarified within 98% H₂SO₄ for a range of minutes. Subsequently, they were rinsed 3 times for 5 minutes with autoclaved distilled water to remove the traces of H₂SO₄. The sterilized seeds were cultured on paper bridges suspended over liquid media containing a range concentration of GA₃ and sterilized water (control). The germinated seeds were transferred after 3-4 days cultured onto agar solidified sterile MS medium (Murashing and Skoog, 1962), pH 5.6-5.8 medium and incubated in growth cabinet.

Results: The sterilization using H₂SO₄ for 5 minutes, treatment using sandpaper, and 0.1 mg/L GA₃ showed the best result. The germination percentages of *I. zollingeriana* was 90% in liquid medium containing 0.1 mg/L GA₃ and 87% in sterilized water with injured roots. Germination seed of control (no treatment) was 4%. Using MS media after seed germinated, can improved injured roots condition and roots were growing normally. Comparing two, seeds treated with liquid medium containing GA₃ had more plant height and more roots number compared to those germinated in sterilized water.

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Keywords: *Indigofera zollingeriana*, germination, in vitro, propagation, regeneration, seed storage.