

## **A primary study on seed dormancy mechanism and breaking technique of *Leymus chinensis***

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### **Abstract**

*Leymus chinensis*, commonly known as alkali-grass, is an ecologically and economically important fodder grass due to its high nutritional value, palatability, high-yield and high tolerance of drought, salinity and low fertility (Huang *et al.*, 2002). It mainly was found in the eastern region of the Eurasian steppes, the northern and eastern parts of the People's Republic of Mongolia. In China, it is mainly distributed in the Northeast China Plain, the Northern China Plain, and the Inner Mongolia Plateau of China (Zhang *et al.*, 2007). Seed dormancy of *L.chinensis* is one of the most important factors limiting its culture and utilization. The present study investigated the seed dormancy mechanism and dormancy breaking technique of *L.chinensis* and the results showed that: Piercing naked seed compared with intact seed the germination rate, water absorption rate, viability by contrast, 6%, 63%, 0% significantly increased to 60%, 86%, 94%; Water soaking one day, 30% NaOH soaking 80min, soaking in 30% NaOH for 60 min after soaking with water for one day could increase germination rate of *L.chinensis* intact seeds significantly from 6% to 36%, 60%, 84%, while the different concentration of gibberellin treatment to intact seeds had no significant changes compared with the control; Seeds soaked with 30% NaOH by 60 min after soaked with water one day, and then imposed 200  $\mu\text{g/g}$  GA<sub>3</sub>, could germinate to 91%, close to the seed viability 94%. This study showed that glume and seed coat did not affect seed imbibition, but affected absorption of macromolecular substances such as GA<sub>3</sub>, and also some germination inhibitors leakage which led to seed dormancy. These results implied that palea, seed coat, and germination inhibitors contained in the seeds may play an important role in controlling seed dormancy of *L. chinensis*.

### **References**

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