

ABSTRACT**POTENTIAL OF SOAKING TREATMENTS FOR DETERMINING SEED VIGOUR OF
SOYBEAN (*Glycine max* (L.) Merrill)**

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Laboratory techniques for easy, rapid, inexpensive and accurate seed vigour determination are still needed to be developed. Soaking treatments causing injury to low vigour seed lots have been well documented in large legume seeds. The objectives of this study were 1) to examine the potential of different soaking techniques in detecting differences in vigour of soybean seed lots and 2) to evaluate the correlation between plant numbers/area and yield/rai when seed lots were sown in dry (1999) and wet (2000) seasons. Fifty four soybean seed lots cv. Chiangmai 60 were evaluated for their vigour using recommended tests and soaking treatments. Seed lots of 8, 10, and 12% moisture contents were soaked in 10, 15, 20, and 25⁰C water for 30 minutes and 2 hours. Soaking for 2 hours resulted in severely damage to the seed lots tested and showed no relation to field emergence in wet (2000) season. The correlations between 8 and 10% seed moisture soaked for 30 minutes in 20 and 25⁰C water and field emergence at different sowing dates were not consistent, compared to accelerated ageing and conductivity results, due to variation among seed lots and field conditions. However, the results after soaking the seed lots of 8% seed moisture in 25⁰C water for 30 minutes were strongly correlated with germination performance after storage for 2, 4, 5, 6, and 8 months at ambient condition. The highest correlation coefficients ($r = 0.82 \text{ } \square \text{ } 0.9$) between these results suggest that soaking technique is possibly more accurate than the recommended tests for determining seed storability. Plant numbers/area was highly correlated with yield/rai in both seasons ($r = 0.90$ and 0.97),

indicating that plant numbers/area was an important component of grain yield prediction in this study.