

REFERENCES

- Anonymous. 1999. Economic Crops. Bangkok : Department of Agronomy, Faculty of Agriculture, Kasetsart University.
- Anonymous. 2004. Soybean. Bangkok : Department of Agriculture, Ministry of Agriculture and Co-operatives.
- AOSA. 2001. Rules for Testing Seeds. The Association of Official Seed Analysts.
- AOSA. 2002. Seed Vigor Testing Handbook. Contribution No.32 to the Handbook on Seed Testing.
- Arayangkool, T. 1998. Discrimination : Decreasing of Soybean Production Cost. Chiang Mai : Chiang Mai Research Center, Ministry of Agriculture and Co-operatives.
- Blake, G. R. and Hartge, K. H. 1986a. Bulk density. *In* Methods of Soil Analysis. Part1 : Physical and Mineralogical Methods. 2nd edition. (ed. Klute, A.), pp. 363-375. Madison : Soil Science Society of America, Inc.
- Blake, G. R. and Hartge, K. H. 1986b. Particle density. *In* Methods of Soil Analysis. Part1 : Physical and Mineralogical Methods. 2nd edition. (ed. Klute, A.), pp. 377-382. Madison : Soil Science Society of America, Inc.
- Boonpradab, S. and Kaewmeechai, S. 2000. Soybean in Irrigated Area. Bangkok : Field Crops Research Institute, Ministry of Agriculture and Co-operatives.
- Burton, J. W. 1997. Soyabean (*Glycine max* (L.) Merr.). *Field Crop Res.* 53 : 171-186.
- Cassel, D. K. and Nielsen, D. R. 1986. Plant available water. *In* Methods of Soil Analysis. Part1 : Physical and Mineralogical Methods. 2nd edition. (ed. Klute, A.), pp. 901-926. Madison : Soil Science Society of America, Inc.
- Danielson, R. E. and Sutherland, P. L. 1986. Soil Porosity. *In* Methods of Soil Analysis. Part1 : Physical and Mineralogical Methods. 2nd edition. (ed. Klute, A.), pp. 443-461. Madison : Soil Science Society of America, Inc.
- Delouche, J. C. and Baskin, C. C. 1973. Accelerated aging techniques for predicting the relative storability of seed lots. *Seed Sci. and Technol.* 1 : 427-452.
- Department of Land Development. 1973. Soil map of Sonkhla province. Soil Survey Division, Department of Land Development.

- De Souza, P. I., Egli, D. B. and Bruening, W. P. 1997. Water stress during seed filling and leaf senescence in soybean. *Agron. J.* 89 : 807-812.
- Dharmasena, C. D. 1986. Agronomic requirements for wet and dry season soybean. *In Soybean in Tropical and Subtropical Cropping System. Proceedings of the Symposium 26 September – 1 October 1983 Tsukuba, Japan, pp. 203-208. Taiwan : The Asian Vegetable Research and Development Center.*
- Dias, D. C. F. S., Marcos-Filho, J. and Carmello, Q. A. C. 1996. Potassium leakage test for the evaluation of vigour in soybean seeds. *Seed Sci. and Technol.* 25 : 7-18.
- Edje, O. T. and Burris, J. S. 1971. Effects of soybean seed vigor on field performance. *Agron. J.* 63 : 536-538.
- Egli, D. B. and TeKrony, D. M. 1995. Soybean seed germination, vigor and field emergence. *Seed Sci. and Technol.* 23 : 595-607.
- Egli, D. B. and TeKrony, D. M. 1996. Seedbed conditions and prediction of field emergence of soybean seed. *J. Prod. Agric.* 9 : 365-370.
- Evers, G. W. and Parsons, M. J. 2003. Soil type and moisture level influence on Alamo switchgrass emergence and seedling growth. *Crop Sci.* 43 : 288-294.
- FAO. 1982. Soybean Production in the Tropics. Rome : Food and Agriculture Organization of the United Nations.
- FAO. 1994. Tropical Soybean : Improvement and Production. Rome : Food and Agriculture Organization of the United Nations.
- FCRI. 2001. A Guide Book for Field Crops Production in Thailand. 2nd edition. Bangkok : Field Crops Research Institute, Ministry of Agriculture and Co-operatives.
- Fehr, W. R., Burris, J. S. and Gilman, D. F. 1973. Soybean emergence under field conditions. *Agron. J.* 65 : 740-742.
- Ferriss, R. S. and Baker, J. M. 1990. Relationships between soybean seed quality and performance in soil. *Seed Sci. and Technol.* 18 : 51-73.
- Gee, G. W. and Bauder, J. W. 1986. Partical size analysis. *In Methods of Soil Analysis. Part1 : Physical and Mineralogical Methods. 2nd edition. (ed. Klute, A.), pp. 383-411. Madison : Soil Science Society of America, Inc.*

- Gleason, M. L. and Ferriss, R. S. 1985. Influence of soil water potential on performance of soybean seeds infected by *Phomopsis* sp. *Phytopathology* 75 : 1236-1241.
- Hadas, A. and Russo, D. 1974. Water uptake by seeds as affected by water stress, capillary conductivity and seed-soil water contact. I. Experimental study. *Agron. J.* 66 : 643-647.
- Hamman, B., Egli, D. B. and Koning, G. 2002. Seed vigor, soilborne pathogens, preemergent growth, and soybean seedling emergence. *Crop Sci.* 42 : 451-457.
- Hampton, J. G. and TeKrony, D. M. 1995. *Handbook of Vigour Test Methods*. 3rd edition. Zurich : International Seed Testing Association.
- Hawle, D. S. and Caviness, C. E. 1988. Influence of cultivar and seed characteristics on vertical weight displacement by soybean seedlings. *Crop Sci.* 28 : 321-324.
- Helms, T. C., Deckard, E. L., Goos, R. J. and Enz, J. W. 1996a. Soil moisture, temperature, and drying influence on soybean emergence. *Agron. J.* 88 : 662-667.
- Helms, T. C., Deckard, E., Goos, R. J. and Enz, J. W. 1996b. Soybean seedling emergence influenced by days of soil water stress and soil temperature. *Agron. J.* 88 : 657-661.
- Helms, T. C., Deckard, E. L. and Gregoire, P. A. 1997. Corn, sunflower, and soybean emergence influenced by soil temperature and soil water content. *Agron. J.* 89 : 59-63.
- ISTA. 1999. *International Rules for Seed Testing : Rules 1999*. Zurich : International Seed Testing Association.
- Jittham, O. 2002. Germination test under water stress conditions for sweet corn seed vigor evaluation. Master of Science Thesis. Prince of Songkla University.
- Johnson, R. R. and Wax, L. M. 1978. Relationship of soybean germination and vigor tests to field performance. *Agron. J.* 70 : 273-278.
- Kho Hong Agri-Meteorological Station. 2001. Daily weather report in 2001. Kho Hong Agri-Meteorological Station, Department of Meteorology.
- Kho Hong Agri-Meteorological Station. 2002. Daily weather report in 2002. Kho Hong Agri-Meteorological Station, Department of Meteorology.
- Kho Hong Agri-Meteorological Station. 2003. Daily weather report in 2003. Kho Hong Agri-Meteorological Station, Department of Meteorology.

- Kulik, M. M. and Yaklich, R. W. 1982. Evaluation of vigor tests in soybean seeds : Relationship of accelerated aging, cold test, sand bench, and speed of germination tests to field performance. *Crop Sci.* 22 : 766-770.
- Liu, H., Copeland, L. O., Schabenberger, O. and Jamieson, D. 1999. Variability of germination tests of corn and soybeans. *Seed Technol.* 21 : 25-33.
- Makkawi, M., El Balla, M., Bishaw, Z. and Van Gastel, A. J. G. 1999. The relationship between seed vigour tests and field emergence in lentil (*Lens culinaris* Medikus). *Seed Sci. and Technol.* 27 : 657-668.
- Muthiah, S., Longer, D. E. and Harris, W. M. 1994. Staging soybean seedling growth from germination to emergence. *Crop Sci.* 34 : 289-291.
- OAE. 2002. Soybean. [Online]. Available:<http://oae.go.th/statistic/yearbook/2000-01/> [19 April 20002].
- Ouprasitwong, N. 1994. The Occurrence of Droughts in Thailand. Bangkok : Department of Meteorology.
- Sawatdikarn, S. 2002. Germination test of corn seed under water stress conditions. Master of Science Thesis. Prince of Songkla University.
- Sung, J. M. 1995. The effect of sub-optimal O₂ on seedling emergence of soybean seeds of different size. *Seed Sci. and Technol.* 23 : 807-814.
- Tanavud, C., Yongchalermchai, C., Bennui, A. and Densrisereekul, O. 2001. The expansion of inland shrimp farming and its environmental impacts in Songkla lake basin. *Kasetsart J. (Nat. Sci.)* 35 : 326-343.
- TeKrony, D. M. and Egli, D. B. 1977. Relationship between laboratory indices of soybean seed vigor and field emergence. *Crop Sci.* 17 : 573-577.
- Topp, G. C. 1993. Soil water content. *In* *Soil Sampling and Methods of Analysis*. (ed. Carton, M. R.), pp. 542-543. Boca Raton : Lewis.
- Trawatha, S. E., Steiner, J. J. and Bradford, K. J. 1990. Laboratory vigor tests used to predict pepper seedling field emergence performance. *Crop Sci.* 30 : 713-717.
- Tully, T. J., McDonald, M. B., Jr. and Beuerlein, J. E. 1986. Seed quality effects on soybean plant performance under conventional and ridge tillage. *Seed Sci. and Technol.* 14 : 657-668.

- Vieira, R. D., Paiva-Aguero, J. A. and Perecin, D. 1999a. Electrical conductivity and field performance of soybean seeds. *Seed Technol.* 21 : 15-24.
- Vieira, R. D., Paiva-Aguero, J. A., Perecin, D. and Bittencourt, S. R. M. 1999b. Correlation of electrical conductivity and other vigor tests with field emergence of soybean seedlings. *Seed Sci. and Technol.* 27 : 67-75.
- Vieira, R. D., TeKrony, D. M. and Egli, D. B. 1992. Effect of drought and defoliation stress in the field on soybean seed germination and vigor. *Crop Sci.* 32 : 471-475.
- Werakul, S. 2003. Germination test under water stress conditions for cucumber seed vigor evaluation. Master of Science Thesis. Prince of Songkla University.
- Wilson, D. O., Jr. and McDonald, M. B., Jr. 1986. A convenient volatile aldehyde assay for measuring soybean seed vigor. *Seed Sci. and Technol.* 14 : 259-268.
- Wuebker, E. F., Mullen, R. E. and Koehler, K. 2001. Flooding and temperature effects on soybean germination. *Crop Sci.* : 41 : 1857-1861.
- Yaklich, R. W. and Kulik, M. M. 1979. Evaluation of vigor tests in soybean seeds: Relationship of the standard germination test, seedling vigor classification, seedling length and tetrazolium staining to field performance. *Crop Sci.* 19 : 247-252.
- Yaklich, R. W., Kulik, M. M. and Anderson, J. D. 1979. Evaluation of vigor tests in soybean seeds : relationship of ATP, conductivity, and radioactive tracer multiple criteria laboratory tests to field performance. *Crop Sci.* 19 : 806-810.
- Youngs, E. G. 1991. Hydraulic conductivity of saturated soils. *In Soil Analysis : Physical Method.* (eds. Smith, K. A. and Mullins, C. E.), pp. 174-175. New York : Marcel Dekker, Inc.