

Ratanakorn Kitsanachandee 2006: The Association between AFLP Markers and Gene Controlling Tolerance to Iron Deficiency in Mungbean (*Vigna radiata* (L.) Wilczek). Master of Science (Agricultural Biotechnology), Major Field: Agricultural Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor: Professor Peerasak Srinives, Ph.D. 66 pages.

A group of 241 mungbean accessions can be divided using the average value of total chlorophyll content between NM10-12 and KPS1, which are tolerant and susceptible to iron deficiency in alkaline soil. There were 196 accessions in the tolerant group and 45 accessions in the susceptible group. Among the tolerant accessions, the primers E-ACC/M-CTG and E-ACT/M-CTA were present in 143 (73%) and 148 (76%) accessions, respectively. Both primers can identify all tolerant accessions in China, England, Indonesia and Pakistan, but only E-ACT/M-CTA linked to all tolerant accessions from Australia, Iraq and Taiwan. Both primers were also found in the susceptible accessions in India and Iran. The primer E-ACT/M-CTA explained more variation in tolerance to iron deficiency than primer E-ACC/M-CTG when tested by multiple regression. Primers E-CAG/M-TAC and E-CGT/M-CTG were reportedly linked to gene conditioning susceptibility to iron deficiency. They were found in 19 (42.2%) and 30 (67%) accessions out of 45 susceptible accessions and in 126 (64%) and 105 (54%) out of 196 tolerance accessions. Thus they were considered unsuitable to use for identifying the susceptible genotypes.

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Thesis Advisor's signature

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