Nuchjaree Watcharawongpaiboon 2007: Development and Characterization of Microsatellite Markers in Cucumber (*Cucumis sativus* L.) and A Comparison of Cost-Effectiveness Analysis for Genetic Purity Testing. Doctor of Philosophy (Agricultural Biotechnology), Major Field: Agricultural Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Julapark Chunwongse, Ph.D. 138 pages.

The microsatellite markers in cucumber (*Cucumis sativus* L.) were developed using the enrichment procedure. Fifty-seven primer pairs flanking the microsatellite repeats were used to amplify cucumber DNA. For polymorphism information assessment, 16 *Cucumis sativus* L. were assessed with 45 primer pairs. The average number of alleles per locus was 3.64. The maximum polymorphism information content (PIC) value was 0.78 with an average of 0.47. The cucumber microsatellite makers could be useful for seed purity control. We also found that some cucumber markers were transferable to other cucurbit species such as cantaloupe, watermelon, pumpkin, and bitter gourd. When testing the genetic purity at 21 days, The cost of using GOT was lower than the cost of using SSLP at 12.11 baht/plant and testing at 33 days the cost of using SSLP was lower than the cost of using GOT at 1.70 baht/pant

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