

Danrongwoot Onwimol 2010: Varietal Identification of Cucumber Using Seed Protein Analysis via Ultrathin Layer Isoelectric Focusing Technique. Master of Science (Agriculture), Major Field: Horticulture, Department of Horticulture. Thesis Advisor: Assistant Professor Thammasak Thongket, Ph.D. 113 pages.

The suitable solvent and gel pH-gradient for varietal identification of cucumber *via* Ultrathin-layer isoelectric focusing (UTLIEF) technique was studied using 4 commercial cultivars of F-1 hybrids namely; Micro C, Big C, Chokedee and Bussaba2005. Four different solvents; water, phosphate buffer, Disodium ethylenediamine tetraacetate (Na₂EDTA) and Sodium chloride (NaCl) and two different gel pH of 2-11 and pH 4-5/3-10 forming 8 treatment combinations were compared. The results demonstrated that only the treatment combination between water as protein extract solvent and gel pH 2-11 gave the protein band markers that could differentiate all four cucumber cultivars from each other. Therefore, this finding protocol was used to identify other 8 commercial cultivars (3 commercial cultivars and 5 cucumber accessions) and found that it could differentiate 25 out of 28 cultivars pairs in pairwise comparison. In hybrid purity test, it could detect F-1 hybrid purity of 8 out of 10 F-1 hybrid lines.

Student's signature

Thesis Advisor's signature