

Abstract

Possibility of *in vitro* cross breeding of cucumber, a monoecious plant were examined. Tissue culture procedure were used with cucumber varieties Malai 759 and Satsukimidori for flower induction. From initial studied, male flower was easy to induce. In this studied, female flower induction and blooming were examined by decreasing humidity in bottle with using membrane filter in bottle's cap or using liquid paraffin to cover the medium. The result showed that using membrane filter in 3 week after subculture was the most effective to induce female flower in varieties Malai 759 and Satsukimidori (6.2 and 7.2 respectively) and also induce blooming of female flower of variety Malai 759 (2.2 flower/plant). Covering the medium with 10 ml liquid paraffin induced female flower (3.3 flower/plant), but did not significantly induced flower blooming *in vitro*. In addition, the effect of some plant hormone on female flower induction and female flower blooming were studied. Only gibberellins at 10 ppm was most effective to induce female flower (6.7 flowers/plant). Kinetin, ethephon and sucrose did not induce both female flower induction and blooming.

The result of viability testing of varieties Malai 759 and Satsukimidori's pollen from both *in vitro* and field condition showed similar rate at 49-56%. In field condition, cross breeding test among 2 varieties gave the hybrid fruits either variety Malai 759 or Satsukimidori was used as mother line. However *in vitro* condition, cross breeding test gave the hybrid fruits only when using variety Malai 759 as mother line (26.2%).