The study of plant growth regulators on sex expression of cucumber in vitro

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Regulation of sex is very important for fruit and vegetable production. In some species such as cucumber, this has been possible by manipulating environmental and chemical factors. Mainly the effect of environmental factors such as photoperiod and temperature were obtained using intact plants. Therefore in vitro culture technique was found to provide an ideal tool for the investigation of plant growth regulators on the sex expression without interference from leaves or other organs. Flower bud and immature inflorecence culture offer unique opportunities for this type of study.

Three experiments were carried out with view to examine the effect of some growth regulators (IAA and ethrel) on sex expression in selected genotypes of cucumber in culture. The following results were obtained:

1- The effect of hormonal action might be variable, depending on many circumstances such as the hormonal concentration, the method and time of their application, environmental factors, the age and responsiveness of the receiver explants.

2- In different concentrations of IAA there was no sex expression and 100% of the flowers produced were male.

3- Ethrel induced the formation of a small percentage of female flowers.