



ABSTRACT

The best seed germination of *Cucurbita moschata* was observed in 15 mL of distilled water at $28 \pm 2^\circ\text{C}$ and sterilization of seeds with 0.1% aqueous mercuric chloride.

Callus development of *Cucurbita moschata* of cotyledon, leaf, hypocotyls and root under auxins (2,4-D, NAA) and cytokinins (BAP, kinetin) different concentrations. It was found that 1.5mg/L BAP+1.5mg/L 2,4-D and 0.5mg/L BAP+1.5mg/L 2,4-D combination was best for callus development from cotyledon, as both gave a callus index of 300 but the time for callusing was 9 and 10 days respectively vs. 2,4-D and BAP (3 mg/L) for callus induction by leaves, 2mg/L BAP+1.5mg/L 2,4-D for callus induction from hypocotyl and from root the combination of 1.5mg/L BAP +3mg/L 2,4-D produced the best results.

GC/MS analysis of *n*-hexane extract of callus and field grown seedling parts identified 53 different secondary metabolites, best % composition compounds identified were 3,7-dioxo-23,24,25,26,27-pentanocucurbit-5-en-22-oic acid (22.33%), 23,24-Dihydrocucurbitacin B (18.92%), Hexanocucurbitacin I (30.71%), Elatericin B (3.21%), 11-Deoxocucurbitacin I (5.91%), 23,24-Dihydrocucurbitacin I (27.45%), 2-*o*- β -D-glucopyranoside (10.92%). As for commercial value, γ -Sitosterol (10.4%), β -Sitosterol (9.32%), 3 β -7 β -methoxycucurbita-5,23-dien-25-ol (1.68%), 3 β -7 β ,25-trihydroxycucurbita-5,23-dien-19-al (3.451%), Cucurbita-5,24-diene-3,7,23-trione (1.14%), Cucurbita-5,6,23-triene-3 β ,25-diol (1.14%) and β -patchoullene (2.562%), α -phellendrene (13.78%), *n*-Eicosanoic acid (10.1%), Squalene (4.92%) were detected.