ABSTRACT

The experiment was done in the Phycology lab. of GCU, Lahore to study the effect of micro algal liquid fertilizer on the vegetative growth and seedling growth ofcucumber (Cucumis sativus). The experiment contained two categories, one is in vitro and the second is pot experiment. The varieties of Cucumis sativus seeds were obtainedfrom the Federal seed certification department, Lahore. First variety is (Cucumber special) and second one is (KF1 kargil F1). The four concentrations were made excluding the control group. The 25%, 50%, 75% and 100%. The experiment contained the measurement of different parameters. The germination index (GI), germination energy (GE), seedling vigor index (SVI), mean germination time (MGT). The effect of Algal liquid fertilizer was noticed maximum in the 100% concentration seedlings. The seedlings of C. Special have shown the excellent growth at 75% and 100%. The results shown that the germination of seedlings increased from 25% to 100% as compared to control. The maximum seeding vigor index of C. Special variety was shown in 50% concentration (2127.5). The second variety KF1 has shown the best results of germination. The KF1 was shown the best GI at 50% and 75% ALF concentrations. The SVI of KF1 was shown maximum at 75% that was 1846.0067. The root length (cm), shoot length (cm) and fresh weight (g) of the varieties were also measured. The plant seedling length (PSL) of C. Special was measured at 50% ALF concentration that was 23.475cm. the plant seedling length (PSL) of KF1 was measured maximum at 75% ALF concentration that was 9.675cm. The nitrogen, magnesium, chlorophyll, contents, net assimilation rates, plant growth rate, plant photosynthetic efficiency and coleoptile length was also measured of both varieties C. SPECIAL and KF1 at in vitro stage. The vegetative growth of the plants in pot experiment was measured too. The germination index, energy, and percentage was calculated. In C. Special variety of Cucumis sativus the maximum seedling vigor index (SVI) was noticed of 75% ALF concentration that was 2176.3cm. In pot experiment, the mean germination time of KF1 and C. SPECIAL was 30 days. The mean germination time of in vitro seedlings were 15 days and phycochemical tests were also done. the soil texture was confirmed by the soil test. The sandy soil appeared in the result of soil test.