SUMMARY AND CONCLUSION

This investigation was carried out at the Tissue culture laboratory, Department of Horticulture , Faculty of Agriculture , Moshtohor during 1992-1995 . The main objectives of this study is to find out the possibility, of establishing some of new grape and strawberry cultivars and Balady strawberry plants through in vitro propagation. Also, identification of the best ways, for enhancing production of the largest numbers for covering unlimited requirements from these plants. In addition suitable methods for rooting and acclimatization of these plants were involved . Meanwhile, evaluation of some new cultivars of either grape or strawberry and studying the response of these cultivars to different physiological factors as the consequences of light and dark conditions as well as the effect of different growth regulators on growth , development, and rooting of these plants were included. Also, the effect of growth regulators balances on development of tissue cultured plants and at acclimatization stage were studied.

The results can be summerized as follow :

1. Solidified Nitsch and Nitsch medium induced the best explant development and shootlets criteria in case of grape cultivars. However, Murashige and Skoog was preferred in strawberry plants.
2. Anderson medium proved to be unsuitable for both grape and strawberry plants as it increased nicroses and reduced shootlets and chlorophyll.
3. Different cultivars of grape and strawberry showed a slight differences with regard to explant development and shootlets other as different medium types were used.
4. Shoot tips of grape and strawberry plants surpassed one node cuttings in explant development and shootlets characters.

5. Solid medium was superior in growth during establishment stage and chlorophyll while semi-solid medium state was recommended during proliferation stage as it increased proliferation and nicroses. However, liquid medium greatly reduced nicroses and increased growth, chlorophyll and rooting.
6. Different cytokinin types had different effect on growth parameters of either grape or strawberry plants. Since, kinetin and zeatin at 2 mg/l level enhanced greatly growth and chlorophyll. However, 6-benzylaminopurine at the same level increased proliferation. On the other hand, 2 mg/l thidiazuron encouraged the highest nicroses which resulted in inducing adverse effect on all growth parameters.
7. The lower concentration of 6-benzylaminopurine (BAP) (1.0 mg/l) and (2.0 mg/l) for strawberry and grape respectively increased growth and improved chlorophyll however higher concentration of BAP (4 mg/l) encouraged proliferation with great level and increased nicroses.
8. Thidiazuron (TDZ) at 4 mg/l for grape and 2 mg/l for strawberry plants killed the cultured plantlets while lower concentration 0.5 and 1.0 mg/l enhanced good growth, proliferation, and chlorophyll .
9. Indole-3-acetic acid and naphthalene acetic acid were superior in increasing growth and chlorophyll when compared with indole-3-butyric acid at the same level while indole-3-butyric acid and NAA surpassed IAA in increasing callus production, nicroses, and rooting of either grape or strawberry plants.
10. The lower concentration of auxin (1.0 mg/l) reduced callus production and nicroses while increased both growth and chlorophyll. However, higher ones (2.0 or 4.0 mg/l) encouraged rooting.

11. Continuous light and intermittant light increased both callus production and nicroses while they had harmful effect on the other growth parameters. However, long day photoperiod treatment enhanced growth and chlorophyll. On the other hand, rooting was improved greatly by the short day photoperiod treatment.
12. Darkening treatments (surface coverage, outer coverage, and their combination) increased growth, chlorophyll and rooting of grape and strawberry plants.
13. Addition of activated charcoal to the cultured medium exerted an adverse effect on all growth and rooting parameters of the studied plants.
14. Acclimatization treatments for grape and strawberry plants were varried greatly in the resultant rates of survival. The combination of foam, sand, peat-moss, and loam in one treatment produced the highest survivals followed with the combination of sand, peat-moss and loam.

It is concluded from the above that the best medium for establishment, proliferation, and rooting of different grape cultivars was Nitsch and Nitsch while Murashige and Skoog medium was suitable for strawberry plants . Also, shoot tip explant was preferrable in both grape and strawberry plants . In the mean time , solid medium was recommended in establishment stage while semi-solid medium was suitable for proliferation stage and liquid medium induced the best rooting in both grape and strawberry plants . Furthermore, kinetin and zeatin encouraged the best growth and chlorophyll. However, thidiazuron and 6-benzylaminopurine enhanced the highest proliferation in both grape and strawberry plants . Meanwhile, lower concentrations of cytokinin induced better growth and chlorophyll than higher concentrations which encouraged proliferation. In contrast, higher concentr-ations of cytokinin-like

(thidiazuron) up to 4 mg/l in case of grape and 2 mg/L in strawberry plants stimulated domination of nicroses which affect harmfully all growth parameters. The best thidiazuron concentrations for inducing good growth parameters and good proliferation were 0.5-1.0 mg/l. In addition, rooting was increased greatly by using either 2 or 4 mg/L IBA . Also, short day photoperiod light regime increased rooting of both grape and strawberry plants. In the same time , combination of surface and outer coverage treatment enhanced rooting . Meanwhile, combination of foam, sand, peat-moss and loamy produced an excellant survival rates .