

INTRODUCTION

The vegetative organs of many fruit trees have the capacity for regeneration. Stem cuttings have the ability to form adventitious roots. A stem and a root can be grafted together to form a continuous vascular connection when properly combined as a graft. Such asexual processes are particularly important in fruit production because the genotype of most of the valuable fruit cultivars is highly heterozygous, and the unique characteristic of such plants are immediately lost if they are propagated by seeds.

Moreover, propagation by cuttings is quite preferable for fruit plants because of its merits as a rapid, inexpensive and simple method and does not require the special techniques necessary in grafting or budding. Stem cuttings are the easiest tool to propagate many fruit plants, such as grapes, figs and pomegranates. However, some other fruit species seem to be difficult to propagate by cuttings such as apples, pears, pecans, peaches and mangoes.

Cuttings of hard-to-root fruit cultivars can be rooted satisfactorily if various influencing factors are taken into consideration and maintained at the optimum conditions.

We are dealing in the major part of this study with auxin-like growth substance treatments for hardwood cuttings prepared from the middle part of one-year-old twigs with the hope of success in propagating, by such cuttings, of two varieties of both peaches and pears. Such study covered cuttings survival, growth, and chemical constituent. Success in propagating both crops by cuttings will be beneficial in producing medium size trees which save much of production costs.

Furthermore, apple culture in A.R.E. started to spread recently after the introduction of some good summer apple varieties. The commonly used rootstock is the Balady apple rootstock. However, this specific rootstock as well as many other apple rootstocks are infested heavily by wooly aphids. Thus, a part of this study was conducted to study the success and growth of buddlings of a local variety of apple namely "Bircher" apple on Balady apple compared to three strains of quince ;A,B and C as rootstocks. A detailed study was done concerning budding success, compatability between scion and stock, growth of budded plants and the chemical contents of both stocks and scion. It is hoped that such study will be beneficial academically as well as in practice.