

BIOCHEMICAL STUDIES ON MEDICINAL PLANT TO IMPROVE THE PEAR PRODUCTION

By

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B.Sc. Agric. Sci. (Agric. Biochemistry), Fac. Agric., Ain Shams Univ.,2003

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APPROVAL SHEET

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ABSTRACT

This study was conducted during two successive seasons (2014 and 2015) on Le- Conte pear trees eight years old budded on *Pyrus betuliaefolia* rootstock grown on (HRI) Horticulture Research Institute. The aim of this research is to study the effect of spraying some extracts of natural plants on composition of fruits breaking dormancy, yield, fruit quality and effect of fire blight on trees. The treatments included (garlic water extract , onion water extract and garlic ethanolic extract , onion ethanolic extract and garlic ethanolic extract after hexane extraction at , onion ethanolic extract after hexane extraction all of them at 5, 10 and 15%, garlic hexane extract, onion hexane extract , and garlic volatile oil extract at 2 and 4%, onion volatile oil extract at 2 and 4%, and comparing with dormex 3%, and control). Generally, all studied growth parameters date of bud break, percentage of bud break, yield (Kg/tree), fruit (weight, size and firmness), as well as seasonal changes in some chemical constituents of fruits (total soluble solids (T.S.S.) , acidity %, total sugars and reducing sugars, total phenols, and percentage of Vitamin C) were improved with the application of the different treatments. The best results were obtained from the treatments of garlic or onion extract at 15% as compared to the control. It could be recommended to use garlic extract for improving bud break, and onion extract for fruit quality, growth, and the yield of pear trees, and garlic hexane extract against fire blight infection.

Key words: Le-Conte pear, *betuliaefolia* rootstock, garlic extracts, onion extracts, fruit quality, bud break, dormancy breaking, fire blight, *Erwinia amylovora*.

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