Available online at **www.joac.info**

ISSN: 2278-1862

Journal of Applicable Chemistry

2013, 2 (3): 518-525

(International Peer Reviewed Journal)

Insecticidal effect of the mixture of Potassium soap and Pyrethroids on Potato Leaf roll Virus (PLRV) found on Potato Plants

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Received on 18th April and finalized on 28th April 2013.

ABSTRACT

The potato is best known for its carbohydrate content. It is the world's fourth-largest food crop, following rice, wheat and maize.Plant pests and diseases are the major contributors to biotic stresses that limit realization of yield potential of crop-plants [1]. The annual losses of crop produce in India are estimated at 25%. This indicates importance and need for strengthening of the existing bio-security system more so with the advances in agriculture, and changes in agricultural practices, in climatic conditions, and in indigenous pests, evolving into more virulent forms over the years. The diseases continue to spread over large areas. Diseases like Potato leaf roll virus (PLRV) of potato plants are caused by whiteflies directly or indirectly were treated by insecticidal soaps (Potassium palmitate and pyrethroides), Potassium palmitate and pyrethroides. These three insecticides were applied weekly and bi-weekly on the whiteflies and note down the results after fourth week of application. A specific insecticide formulation consisting potassium palmitate soaps and pyrethroides together exhibits effective combination to provide enhanced insecticidal efficacy and residuality as compared with the individual components [2]. They are effective against soft bodies insects like whiteflies, aphids, and spider. These soap based insecticides of different concentrations were prepared and applied on the plants having whiteflies. The synthesized soap compounds were characterized by elemental analysis, IR spectral studies and molar conductance measurements.

Keywords: Soap, fatty acid, I.R, whiteflies, insecticidal soap, non-persistent insecticides.