

New Project

PE 012

The effect of Jasmonic Acid seen
treatment on aphid in protected
lettuce and parsley

Project Number:	PE 012
Project Title:	The effect of Jasmonic Acid seed treatment on aphid in protected lettuce and parsley
Project Leader:	Dr Pat Croft
Contractor:	STC Research Foundation
Industry Representative:	Geoffrey Smith; Mapleton Growers Ltd Claire Donkin; C Donkin Ltd
Start Date:	01 June 2012
End Date:	31 May 2014
Project Cost (Total project cost):	£36,980 (£40,980)

Project Summary:

Aphids present an on-going problem for many horticultural crops and their control often requires a costly disruption of the existing IPM programme.

Small scale experiments at Lancaster University and STCRF, established the potential for jasmonic acid (JA) seed treatment to reduce pest levels in a range of crops. It is possible that if this reduction in aphids can be reproduced under commercial growing conditions over a significant period of time, that it may contribute to an effective control of aphids in conjunction with biocontrol programmes. Reducing aphid numbers by a significant percentage will assist parasitoids etc. in maintaining a lower level of the pest.

It is currently unknown whether the JA seed treatment will be effective in all horticultural crops. This project will therefore begin to screen JA treatment against a selection of crops. The project will initially aim to establish the ability of the seed treatment to provide a reduction in the numbers of aphids on short term crops grown under commercial conditions. It will determine the level of reduction and the period of effectiveness of the treatment.

Subject to a panel review, the second year of the project will then determine the effect of the seed treatment on biological controls agents as part of an IPM programme.

Aims & Objectives:**(i) Project aim(s):**

The project will establish the ability of the Jasmonic Acid (JA) seed treatment to reduce in the numbers of aphids on lettuce and a protected herb crops grown under commercial conditions. Currently it is unknown how different crops will respond to the JA seed treatment. The project will determine the level of reduction in the numbers of aphids and the period of effectiveness of the treatment during the cropping season.

(ii) Project objective(s):

The project will test the treatment on the above crops, in order to establish the level of activity of the treatment within each of the crops overtime. The first year of the project will measure the efficacy of the JA seed treatments against aphids on relatively shorter term protected crops.

1. JA and lettuce: JA treated seed and standard lettuce seed will be used to compare the growth of aphid populations and disease during the length of a crop.
2. JA and protected herbs (basil and parsley). The growth of aphid populations will be determined for the two herb crops, comparing treated seeds and untreated plants.

Year 2 will select a crop from the results in year 1, and begin to determine the effects of the JA seed treatment on IPM programmes.

Benefits to industry

The project will provide the industry with a system that will contribute to a reduction in aphid populations, allowing alternative biocontrol systems to perform more effectively.

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