Factsheet 11/11

Protected Lettuce

Project No. PC 290

Horticulture Development Company

Stoneleigh Park
Kenilworth
Warwickshire CV8 2TL
T: 0247 669 2051
E: hdc@hdc.ahdb.org.uk

IPM strategies for the control of aphids

Pat Croft, STC and Colin Bloomfield, Colin Bloomfield Consulting

Aphid control within protected lettuce crops remains a continuing problem for growers. Issues of increasingly limited products, minimum residue levels and the possible subsequent pressure for development of pest resistance compound the problem. This factsheet provides growers with a list of available products for use in protected lettuce crops using information taken from the Liaison Website in August 2011.

Introduction

The aim of HDC project PC 290 (Figure 1), was to identify additional products that could contribute to grower's aphid control programmes. The project examined the efficacy of a range of foliar products and two seed treatments. Some of the successful products from the trial are now approved for protected lettuce.

Growers should check the approval status of the products listed in Table 1 when planning a spray programme as regular changes occur in the approval status of pesticides. Contact details of the Chemicals Regulation Directorate and LIAISON are given on the last page.

Insecticides have been colour-coded based on active ingredient and chemical group. Growers are advised to design spray programmes using different chemical groups as this reduces the over-use of specific groups and limits resistance development in lettuce pests. Guideline programmes are given in Table 2. It also sustains the efficacy of available products.

1 Glasshouse trial at STCRF

Table 1 – Insecticides approved for use on protected lettuce as listed on the LIAISON website in August 2011

Target pest or pathogen	Active ingredient or chemical name		Trade name of product	Off label approval Number	Harvest interval (days)	Maximum number of applications per crop	Notes
Aphids	Acetamiprid	Neonicotinoid	Gazelle	2233/08	3	2	
Aphids	Thiamethoxam (SEED TREATMENT)	Neonicotinoid	Cruiser				
Aphids, Caterpillars &	Cypermethrin	Pyrethroid	Toppel 100 EC Sherpa 100 EC	On-Label	Not stated	None stipulated	Assured Produce guidelines state 2 day Harvest Interval to reduce the level of residues at harvest.
Flea beetles & Leaf hoppers **Caterpillar** **Aphid**	Deltamethrin	Pyrethroid	Decis Bandu Cleancrop Decathlon DecisProtech Pearl Micro	1709/07 0175/08 1643/07 1652/07 1850/10	7	None stipulated	Pearl Micro Approval expires 31 December 2011.
Aphids	Lambda-Cyhalothrin	Pyrethroid	Clayton-Groove Mortice	On-Label	3	2	Anti-cholinesterase carbamate. Full protective clothing required for handling concentrates of Clayton-Groove and Mortice.
			EA Lambda 50 Dalda 5		7	4	
	+ Pirimicarb	Carbamate					
Aphids	Pirimicarb	Carbamate	Agrotech-Pirimicarb-50WG Arena Aphox Clayton Pirimicarb 50 Cleancrop Miricide Milentus Pirimicarb Piri 50 Pirimate Phantom Reynard Pirimicarb 50 Route One Primo 50 WG Landgold Pirimicarb 50	On-Label	14	None stipulated	
Aphids, Whitefly and other pests **Caterpillar**	Pyrethrins	Pyrethrum	Pyrethrum 5EC, Spruzit	On-Label	Unspecified	Pyrethrum 5 EC: None stipulated. Spruzit 4 applications per crop.	
Thrips, Silver Y	Spinosad		Tracer	1290/08	3	3	
Aphids	Spirotetramat	Tetramic acid	Movento	On-label	7	2	
Aphids	Thiacloprid	Neonicotinoid	Agrovista Reggae Calypso	0472/08 0453/06	14	See notes	1 application per crop where nicotinoid seed treatment applied; 2 applications per crop with no nicotinoid seed treatment. For crops grown on soil based media a maximum total dose of 648g thiacloprid/hectare/year must not be exceeded. Products may only be applied from 1 April to 31 October
Caterpillar	*Bacillus thuringiensis kurstaki*	Bacteria	Dipel DF	1070/09	Not stated		
Caterpillar	Lambda Cyhalothrin	Pyrethroid	Clayton-Groove Mortice	On-Label	3	None stipulated	Anti-cholinesterase carbamate. Full protective clothing required for handling concentrates of Clayton-Groove and Mortice.
			EA Lambda 50 Dalda 5		7	4	
	+ Pirimicarb	Carbamate					
Mites (and incidental control of Leaf Miner)	Abamectin	Avermectins	Acaramik Dynamec, Clayton Abba	3054/09 0430/07 1939/10	14	4	Products may only be applied from 2 March to 31 October. Application by knapsack or hand held lance of hydraulic sprayer.

The above tables are based on a desk study conducted over a three month period. Raw data constituting the results of this study was obtained from LIAISON. The responsibility for the accuracy and reliability of the LIAISON database lies with Defra.

Care must be taken in interpretation of the above, particularly when used as the basis for commercial product recommendations. Growers & consultants are advised to check any recommendations thoroughly prior to use.

Table 2 - Protected lettuce guideline spray programmes

	Period	Pre-planting	Post planting within 7 days of planting	2nd treatment when HI permits and pest threshold requires
Non insecticide treated seed	March to October	pirimicarb or acetameprid	spirotetramat or pymetrozine	
	November to March	pirimicarb or acetameprid	spirotetramat or pirimicarb	lambda-cyhalothrin and pirimicarb
Seed treated with Cruiser (thiamethoxam)	March to October	nil	spirotetramat or pymetrozine	
	November to March	nil	spirotetramat or pirimicarb	lambda-cyhalothrin and pirimicarb

- Systemic aphicides are most effective when the plant is growing actively.
- Pirimicarb is most effective in warm still conditions. During the winter choose a warm day and adjust venting to maximise the vapourising action.
- Where plants are raised in spacer trays that period is counted as part of the post planting period.
- Lettuce sold before hearting, as trays of immature lettuce, raised in large blocks, raised in spacer trays may have a short post planting to harvest period. Check your records to ensure the post planting applications will not compromise the Harvest Interval.
- Do not rely on pyrethroid products for reliable control of aphid.
- Promptly remove all plant waste and weed from the house at completion of harvest to limit carry over of pest populations.

* Programmes designed by Colin Bloomfield

Further information:

Regular changes occur in the approval status of pesticides arising from changes in legislation or for other reasons. For the most up to date information, please check with your preferred supplier, BASIS registered adviser or the Communications Branch at the Chemicals Regulation Directorate (CRD), Tel (01904) 455775, www.pesticides.gov.uk

LIAISON: liaison@fera.gsi.gov.uk
Tel (01904) 462612

This factsheet is based on a research project and may include mention of crop protection ingredients or products. The publication is intended to inform growers about work undertaken by the HDC or other research organisations and is not intended to endorse or recommend the use of any of the products or active ingredients mentioned. Growers should particularly note that the research project may have included trials of substances which are not registered as crop protection products in the UK or are not approved for commercial use on the crop in question. Only products officially approved as plant protection products should be applied to control pest, disease and weed problems or used as plant growth regulators. Before using any such substance growers should refer to product approval and label recommendations and seek guidance from a BASIS qualified consultant.