

EXTRAPOLATION TABLE for EFFECTIVENESS of INSECTICIDES
► PESTS ON PEAS AND BEANS

INTRODUCTION

The table provides detailed lists of acceptable extrapolations organized by crop groups, for regulatory authorities and applicants, in the context of the registration of plant protection products for minor uses. The table should be used in conjunction with the EPPO Standard PP1/257(1) - *Efficacy and crop safety extrapolations for minor uses*. It is important to ensure that expert judgment and regulatory experience are employed when using these tables. EPPO excludes liability as to the reliability of the information provided through these tables.

The scope for extrapolation may be extended as data and experience with a certain plant protection products increases. The applicant should always provide appropriate justification and information to support the proposed extrapolation. For example, comparability of target biology may be a relevant factor, either in extrapolating to other target species or for the same target onto another crop. For crops, factors such as comparable growth habit, structure etc. should be considered.

TABLE FORMAT

The main pest species for the crop group are listed in Column 1 (although this is not exhaustive), and the pest group to which they belong is specified in Column 2. Companies may choose if they wish to provide data only for individual named species, which would then appear individually listed on the label. But underlined species have been identified as key major targets and as such it is advisable to generate data on these. Furthermore, data on these species then allow a claim to be made for the whole pest group (as specified in Column 2), if required. If a claim for the whole pest group is required but there is no underlined species, then data must be generated on all listed species.

Column 3 indicates the key indicator crop(s) for the crop group. In some instances this may be only one specified crop. In other cases, when separated by an 'or', the company may choose from a range of alternatives within the group. Data generated on crops in Column 3 may be used to extrapolate to all crops listed in Column 4. However, it is preferable to have data on several of the crops within the crop group, but data on the indicator crop should be available. In specific circumstances data from crops outside of the crop group highlighted by an asterisk in column 5 can replace the need for any data on the indicator crop in column 3.

Column 5 identifies whether relevant data on crops outside the crop group, against the same target, may help to reduce the amount of required data on the indicator crop. It may be possible for a direct extrapolation without the need for data on the indicator crop (marked with an asterisk (*)). However, this is dependent on the extent of available data and similarity of crop/target biology. The company should provide an appropriate reasoned case when wanting to use data from crops outside the crop group.

Column 6 gives examples of acceptable extrapolations for a particular pest claim onto other minor use crops. This is not a comprehensive list. Whether extrapolation may be direct (no data, marked with an asterisk (*)), or require additional supporting data on the minor use crop, will again be dependent on the extent and relevance of the existing database and companies should provide an appropriate reasoned case. If the crop is considered to be a major crop in some countries then it may not be appropriate to include in this column, and further data would be required. Companies will need to justify the status of the major crop/minor use.

EXAMPLE OF HOW TO USE THE TABLE:

Pests		Crops: within the Cucurbitaceae		Crops: outside Cucurbitaceae	
1	2	3	4	5	6
Pest species	Pest group name	Indicator crops	Extrapolation to other crops	Data from these crops can support the indicator crops (reduced data or no data *)	Extrapolation to crops (reduced or no data*)
<i>Delia platura</i> HYLEPL	Root and soil flies	Melon CUMME or Cucumber CUMSC	All crops within the crop group	Field bean VICFX , potato SOLTU, Soybean GLXMA, <i>Phaseolus</i> sp. PHSSS, spinach SPQOL, asparagus ASPOF, Allium vegetables	<i>Freesia</i> sp. FRESS, Allium vegetables, Asparagus ASPOF

E.g. : In the first row above, in order to support a claim for *Delia platura* on all Cucurbitaceae crops, data can be generated either on cucumber, or melon. The number of trials required on these crops can be reduced if there are existing relevant data for *Delia platura* on field bean or potato or soybean or *Phaseolus* spp. or spinach or asparagus or allium vegetables. Data on *Delia platura* generated on Cucurbitaceae can also be used to support claims on a minor use crop such as Freesia, Allium vegetables or Asparagus, but further additional data may be required. The company may also need to consider and justify the minor use status of the specified crop.

EXTRAPOLATION REGARDING PROTECTED/OUTDOOR SITUATIONS

Please note that where crops may be grown in both protected and field situations, and where significant differences are expected in pest relevance or crop agronomy between indoor and outdoor situations, it is important to generate a proportion of the data on crops grown in both situations to ensure the product has been tested under a suitable range of typical and challenging conditions.

EXTRAPOLATION TABLE for EFFECTIVENESS of INSECTICIDES

► PESTS ON PEAS AND BEANS

Pisum sp. PIBSS, *Phaseolus* sp. PHSSS, *Vicia* sp. VICSS

Pests		Crop: within Peas and Beans		Crops: outside Peas and beans	
1 Pest species	2 Pest group name	3 Indicator crops	4 Extrapolation to other crops	5 Data from these crops can support the indicator crops (reduced data or no data *)	6 Extrapolation to crops (reduced or no data*)
<i>Myzus persicae</i> MYZUPE, <i>Aphis fabae</i> APHIFA, <i>Macrosiphum euphorbiae</i> MASCEU, <i>Aulacorthum solani</i> AULASO, <i>Uroleucon sonchi</i> DACTSN <i>Megoura viciae</i> MEGHVI	Leaf aphids (field conditions)	Any <i>Phaseolus</i> sp. PHSSS or <i>Vicia</i> sp. VICSS	All <i>Pisum</i> sp. PIBSS and <i>Phaseolus</i> sp. PHSSS	Ornamentals, Peach PRNPS Chenopodioideae 1CHES, Cucumber CUMSC Cinese cabbage BRSPK	Herbs, Ornamentals
<i>Aphis gossypii</i> APHIGO and two other aphid species among <i>Myzus persicae</i> MYZUPE, <i>Aphis</i> sp. APHISP, <i>Macrosiphum euphorbiae</i> MASCEU, <i>Aulacorthum solani</i> AULASO	Leaf aphids (protected conditions)	Any <i>Phaseolus</i> sp. PHSSS	All <i>Phaseolus</i> sp. PHSSS	Cucurbitaceae* 1CUCF, Ornamentals, Solanaceae 1SOLF	Herbs, Ornamentals, Solanaceous crops, Strawberries FRAAN
<i>Acyrtosiphon pisum</i> ACYRON or <i>Acyrtosiphon</i> sp. ACYRSP	Leaf aphids	Any <i>Pisum</i> sp. PIBSS	All <i>Phaseolus</i> sp. PHSSS		

<i>Delia</i> sp. DELISP	Bean seed fly	Any <i>Phaseolus</i> sp. PHSSS	All <i>Pisum</i> sp. PIBSS and <i>Phaseolus</i> sp. PHSSS	Allium vegetables	Asparagus ASPOF, Spinach SPQOL, Allium vegetables, Cucurbitaceae 1CUCF, Freesia 1FREG
<i>Liriomyza</i> sp. LIRISP, <i>Chromatomyia syngenesiae</i> CHMTSY, <i>Phytomyza</i> sp. PHYISP	Leaf miner flies	Any <i>Phaseolus</i> sp. PHSSS or <i>Pisum</i> sp. PIBSS	All <i>Phaseolus</i> sp. PHSSS or <i>Pisum</i> sp. PIBSS	Tomato LYPES*, Ornamentals, Leafy vegetables, Vegetable brassicas	Tomato LYPES, Cucurbitaceae 1CUCF, Alliaceae 1ALLF
<i>Contarinia pisi</i> CONTPI <i>Contarinia</i> sp. CONTSP	Gall midge	Any <i>Pisum</i> sp. PIBSS	Lentil LENCU	Vegetable brassica	
<i>Tetranychus urticae</i> TETRUR	Spider mites	Any <i>Phaseolus</i> sp. PHSSS	All <i>Phaseolus</i> sp. PHSSS	Cucurbitaceae 1CUCF, Ornamentals	Cucurbitaceae 1CUCF, Ornamentals, Tomato LYPES
<i>Chrysodeixis chalcites</i> PLUSCH	Caterpillars	Any <i>Phaseolus</i> sp. PHSSS or <i>Pisum</i> sp. PIBSS	All <i>Phaseolus</i> sp. PHSSS or <i>Pisum</i> sp. PIBSS	<i>Chrysodeixis chalcites</i> PLUSCH in any crop*	
<i>Spodoptera exigua</i> LAPHEG				<i>Spodoptera exigua</i> LAPHEG in any crop*	
<i>Autographa gamma</i> PYTOGA or <i>Mamestra</i> sp. 1MAMEG				<i>Autographa gamma</i> PYTOGA or <i>Mamestra</i> sp. 1MAMEG in any crop*	
<i>Ostrinia</i> sp. PYRUSP, <i>Helicoverpa armigera</i> HELIAR				Cucurbitaceae 1CUCF, Solanaceous crops, Maize ZEAMX	
<i>Cydia nigricans</i> LASPNI	Caterpillars	Any <i>Pisum</i> sp. PIBSS	Lentil LENCU	Cucurbitaceae 1CUCF	Herbs

<i>Bruchus</i> sp. BRCHSP <i>Sitona lineatus</i> SITNLI <i>Acanthoscelides</i> sp. ACANSP	Weevils	Any <i>Pisum</i> sp. PIBSS or <i>Phaseolus</i> sp. PHSSS	All <i>Phaseolus</i> sp. PHSSS, Broad beans VICFX, Lentil LENCU, Field beans VICFM,		Pulses forage seed
<i>Frankliniella</i> sp. FRANSP (except <i>F.</i> <i>occidentalis</i> FRANOC ¹), <i>Thrips</i> sp. THRISP, <i>Kakothrips</i> sp. KAKOSP	Thrips	Any <i>Pisum</i> sp. PIBSS or <i>Phaseolus</i> sp. PHSSS	All <i>Phaseolus</i> sp. PHSSS or <i>Pisum</i> sp. PIBSS	Tomato LYPES Ornamentals	Tobacco NIOSS, Ornamentals

¹ *Frankliniella occidentalis* FRANOC will be covered under the EPPO generic extrapolation table for 'Thrips'.