

EXTRAPOLATION TABLE for EFFECTIVENESS of INSECTICIDES

► PESTS ON VEGETABLE BRASSICAS

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 VEGETABLE BRASSICAS

Leafy brassicas: BRSOA kale *Brassica oleracea* var. *acephala* including collards and curly kale *Brassica oleracea* var. *sabellica* BRSOC; BRSPK Peking cabbage *Brassica pekinensis*; BRSCH *B. chinensis* [synonyms: *B. rapa* subsp. *chinensis*; *B. chinensis* var. *parachinensis*; *B. parachinensis*]; BRSNO Mitzuna *Brassica rapa* subsp. *nipposinica*; BRSPE Komatsuna *Brassica perviridis*; SINSP mustard *Sinapis* sp. (red, white brown black); DIPER Rockets *Diplotaxis eruroides* and ERUVE *Eruca vesicaria* subsp. *sativa*.

Head brassicas: (Head) Cabbage (includes red BRSOR *Brassica oleracea* var. *capitata* f. *rubra* and white *Brassica oleracea* var. *capitata* f. *alba* BRSOL); BRSON *Brassica oleracea* var. *capitata* f. *conica*; BRSEOF Brussels sprouts *B. oleracea* var. *gemmifera*; BRSOS Savoy cabbage *B. oleracea* var. *sabauda*.

Flowerhead brassicas: (Flowering brassicas); BRSOB Cauliflower *B. oleracea* var. *botrytis* subvar. *cultiflora*, BRSOK Broccoli, Calabrese, cima di rapa *B. oleracea* var. *italic*; BRSAG Chinese kale (Chinese broccoli) *Brassica alboglabra*.

Root / Stem brassicas and radish crops: BRSNA Swedes *B. napus* var. *napobrassica*, BRSRR Turnips *B. rapa*, RAPSS Radishes *Raphanus* sp. (including red, white, Black Spanish radish); RAPSRR Small radish *Raphanus sativus*; RAPSNN Garden radish *Raphanus sativus* var. *niger*; ARWLA Horseradish *Armoracia lapathifolia*; BRSOG Kohlrabi, *B. oleracea* var. *gongylodes*.

Pests		Crops: within Vegetable Brassicas		Crops: outside Vegetable Brassicas	
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>Delia radicum</i> HYLERA (soil), <i>Delia</i> sp	Root flies	Cauliflower BRSOB Turnip BRSRR or Swede BRSNA, Radish REPSR	Leafy and flower head and head brassicas Root brassicas	Onion ALLCE	Oilseed rape (if a pest problem) BRSNN, Spinach SPQOL, Herbs Beans, Onion ALLCE
<i>Delia radicum</i> HYLERA (leaves) <i>D. floralis</i> HYLEFL	Flies	Chinese cabbage BRSCH and Brussels sprouts BRSEOF	Leafy brassicas		
<i>Delia radicum</i> HYLERA (flower buds)	Flies	Broccoli BRSOK or Cauliflower BRSOB	Flowerhead brassicas		

<i>Brevicoryne brassicae</i> BRVCBR <i>Lipaphis erysimi</i> LIPAER	Aphids	Savoy cabbage BRSOS and Brussels sprouts BRSOB	Leafy and flower head and head and root brassicas	Oilseed rape BRSNN any other crop for aphids other than <i>Brevicoryne brassicae</i> BRVCBR	Oilseed rape BRSNN, Lettuce LACSS, Tomato LYPES, Herbs
<i>Myzus persicae</i> MYZUPE		Chinese cabbage BRSCB		Lettuce LACSA	* for all: Gherkins CUMSG, Blanched celery and green celery APUGV, Courgettes CUUPG, Patisson CUUPM, Celeriac APUGR, Florence fennel FOEVD, Fennel FOEVA, Beetroot BEAVD, Leek ALLPO, Rhubarb RHERH, Lettuce LACSA, Green Belgian endive, Endive CICEN, Spinach SPQOL, Lamb's lettuce VLLLO, Witloof and chicory roots CICIF (root growing culture), French beans, Slicing beans PHSVX, Runner beans PHSSS, Parsley PARCR, Chervil ANRCE and Celery leaves APUGS, Ornamentals
<i>Aleurodes proletella</i> ALEUPR	Whiteflies	Savoy cabbage BRSOS and Brussels sprouts BRSOB	Leafy and flower head and head and root brassicas	Ornamentals	Celery APUGV
<i>Phyllotreta</i> sp. PHYESP	Flea beetles	Any vegetable brassica	Leafy and flower head and head and root brassicas	Spring oilseed rape BRSNS, Tomato LYPES Cucumber CUMSC	Oilseed rape (<i>Phyllotreta</i> only) BRSNS, Tomato LYPES, Herbs
<i>Ceutorhynchus quadridens</i> (= <i>Ceutorhynchus pallidactylus</i>) CEUTQU	Cabbage Weevils	Any vegetable brassica	All brassicas	Oilseed rape* BRSNN	

<i>C. pleurostigma</i> CEUTPL					
<i>Plutella xylostella</i> PLUTMA <i>Mamestra brassicae</i> BARABR or <i>Pieris brassicae</i> PIERBR <i>Pieris rapae</i> PIERRA	Caterpillars	Any vegetable brassica	Leafy and flower head and head and root brassicas	Oilseed rape BRSNN	Oilseed rape BRSNN, Herbs
<i>Meligethes</i> sp. MELISP	Pollen beetle	Broccoli BRSOK or Cauliflower BRSOB	All cabbage species	Oilseed rape* BRSNN or Mustard SINSS	Oilseed rape BRSNN, Mustard SINSS, Herbs
<i>Liriomyza</i> sp. LIRISP <i>Phytomyza rufipes</i> PHYURU <i>Scaptomyza flava</i> SCATFL	Stem and leaf miner flies	All brassicaceae	All brassicas	Oilseed rape BRSNN Lamb's Lettuce VLLLO	Tomato LYPES Lamb's lettuce VLLLO, Lettuce LACSA, Spinach SPQOL Herbs Celery APUGV
<i>Dasineura</i> sp. DASYSYSP, <i>Contarinia nasturtii</i> CONTNA	Gall midges	Broccoli BRSOK or Cauliflower BRSOB	Leafy and flower head and head and root brassicas		Herbs Oilseed rape BRSNN