

EXTRAPOLATION TABLE for EFFECTIVENESS of INSECTICIDES

► PESTS ON POME FRUIT

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 POME FRUIT

MABSD apple *Malus x domestica*, PYUCO pear *Pyrus communis*, CYDOB quince *Cydonia oblonga*, MABSY crab-apple *Malus sylvestris*, EIOJA loquat *Eryobotria japonica*, MSPGE medlar *Mespilus germanica*, PYUPC Nashi pear *Pyrus pyrifolia var. culta*, ABOME black chokeberry *Aronia melanocarpa*, SOUSS mountain ash *Sorbus sp.*

Pests		Crops: within Pome Fruit		Crops: outside Pome Fruit	
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>Dysaphis plantaginea</i> DYSAPL, <i>Dysaphis sp.</i> DYSASP (no extratpolation to <i>Aphis spiraecola</i> APHISI, a less sensitive species)	Aphids	Apple MABSD	Pome fruit		Ornamentals Other ornamental <i>Malus sp.*</i> Tree nuts, Berries (<i>Rubus sp.</i> RUBSS and <i>Ribes sp.</i> RIBSS), Citrus
<i>Eriosoma lanigerum</i> ERISLA	Woolly aphids	Apple MABSD	Pome fruit		
<i>Phenacoccus aceris</i> PHENAC	Mealybugs	Apple MABSD	Pome fruits		Cane and bush fruits (<i>Rubus sp.</i> RUBSS, <i>Ribes sp.</i> RIBSS, <i>Vaccinium sp.</i> VACSS), Woody ornamentals
<i>Cacopsylla pyricola</i> PSYLPC or <i>Cacosylla pyri</i> PSYLPI	Psyllids (virus/phytoplasm transmitting should be tested separately)	Pear PYUCO or Apple MABSD	Pome fruit		
<i>Psylla mali</i> PSYLMA		Apple	Pome fruit		

<p><u><i>Lepidosaphes ulmi</i></u> LEPSUL, <i>Quadraspidiotus ostreaeformis</i> (=Q. <i>ostreiformis</i>) QUADOS, <u><i>Quadraspidiotus perniciosus</i></u> QUADPE, <i>Quadraspidiotus pyri</i> QUADPY, <i>Epidiaspis leperii</i> EPIDBE (Time of treatment / stage of development is very important)</p>	Armored scales <i>Diaspididae</i>	Apple MABSD	Pome fruit	Other host crops in which this pest occurs*	Peach PRNPS (Northern Europe only) Other host crops in which this pest occurs*
<p><u><i>Pseudaulacaspis pentagona</i></u> PSEAPE, <i>Parthenolecanium corni</i> LECACO, <i>Eulecanium tiliae</i> LECATI</p>	Soft scales <i>Coccidae</i>	Apple MABSD	Other relevant pome fruit	Other host crops in which this pest occurs	Kiwi ATIDE Woody ornamentals
<p><u><i>Lygocoris pabulinus</i></u> LYGUPA, <i>Campylomma verbasci</i> CAMYVE, <i>Lygus</i> sp. LYGUSP, <i>Calocoris</i> sp. CLCRSP, <i>Plesiocoris rugicollis</i> PLESRU</p>	Capsids /Bugs	Apple MABSD	Pome fruit		
<p><i>Stictocephala</i> sp. STICSP, <i>Edwardsiana crataegi</i> (=Edwardsiana <i>frogatti</i>) TYCYFR</p>	Hoppers	Apple MABSD or Pear PYUCO	Pome fruit		
<p><i>Dasineura mali</i> DASYMA, <u><i>Dasineura pyri</i></u> DASYPY</p>	Leaf Midges	Apple MABSD or Pear PYUCO	Pome fruit		

<u>Contarinia pyrivora</u> CONTPY	Gall midges	Pear PYUCO			
<u>Aculus schlechtendali</u> VASASD, <u>Aculus fockeui</u> VASAFL, <u>Phyllocoptes gracilis</u> ACEIGR	Rust mites	Apple MABSD or Pear PYUCO	Pome fruit		Plum PRNDO Ornamental trees Raspberries RUBID (because of <i>Phyllocoptes gracillis</i>)
<u>Epitrimerus pyri</u> EPITPI, <u>Eriophyes pyri</u> ERPHPI, <u>Eriophyes similis</u> ERPHSI	Gall mites <i>Eriophyidae</i>	Apple MABSD or Pear PYUCO	Pome fruit		Plum PRNDO Ornamental trees Raspberries (because of <i>Phyllocoptes gracillis</i>)
<u>Panonychus ulmi</u> METTUL, <u>Tetranychus urticae</u> TETRUR, <i>T. viennensis</i> TETRVI, <i>Bryobia rubricolus</i> BRYORU	Spider mites	Apple MABSD	Pome fruit	Citrus fruit	Stone fruit Other relevant crops
<u>Adoxophyes orana</u> CAPURE and one of the following: <i>Archips podana</i> (= <i>Cacoecia podana</i>) CACOPO, <i>Archips rosanus</i> (= <i>Cacoecia rosana</i>) CACORO, <i>Pandemis heparana</i> PANDHE, <i>Hedya dimidioalba</i> (= <i>Argyroproce variegana</i> , <i>Hedya nubiferana</i>) ARGPVA, <i>Clepsia spectrana</i> (= <i>Cacoecia costana</i>) CACOCO, <i>Enarmonia formosana</i> ENARFO,	<i>Tortricidae</i> (Leaf roller moths)	Apple MABSD or Any other pome fruit	Pome fruit	Any other stone fruit	Stone fruit Ornamental trees

<i>Hedya pruniana</i> (= <i>Argyroploce pruniana</i>) ARGPPR, <i>Spilonota</i> <i>ocellana</i> (= <i>Tmetocera</i> <i>ocellana</i>) TMETOC					
<i>Cydia pomonella</i> CARPPO, <i>Grapholita</i> <i>molesta</i> LASPMO	<i>Tortricidae</i> (leaf roller moths)	Apple MABSD	Pome fruit		Plum PRNDO, Apricot PRNAR, Walnut IUGRE
<i>Yponomeuta malinella</i> HYPNMA, <i>Argyresthia conjugella</i> ARGYCO	Yponomeutidae (Ermine moths)	Apple MABDS			Woody ornamentals
Data on any two of: <i>Lyonetia clerkella</i> LYONCL, <i>Phyllonorycter</i> <i>blancardella</i> LITHBL, <i>P.</i> <i>corylifoliella</i> PRYCCO, <i>Leucoptera malifoliella</i> LEUCSC, <i>Stigmella malella</i> NEPTMA	Leaf miners	Any relevant pome fruit	Pome fruit		Stone fruit Woody ornamentals
<i>Zeuzera pyrina</i> ZEUPPY, <i>Cossus cossus</i> COSSCO, <i>Synanthedon</i> <i>myopaeformis</i> SYNAMY	Wood borers	Apple MABSD	Pome fruit		Stone fruit Woody ornamentals
<i>Orthosia</i> sp. ORTOSP	Noctuids	Apple MABSD or Pear PYUCO	Pome fruit	Ornamental shrubs	Stone fruit
<i>Operophtera brumata</i> CHEIBR	Winter moths Geometridae	Apple MABSD or Pear PYUCO	Pome fruit	Ornamental shrubs	Stone fruit
<i>Orgyia antiqua</i> ORGYAN	<i>Lymantriidae</i>	Apple MABSD or Pear PYUCO	Pome fruit	Ornamental shrubs	Stone fruit

Data on any two of: <i>Hoplocampa testudinea</i> HOPLTE, <i>Taxonus glabratus</i> TAXOGL, <i>Hoplocampa flava</i> HOPLFL, <i>Hoplocampa</i> sp. HOPLSP, <i>H. Brevis</i> HOPLBR, <i>Caliroa cerasi</i> (= <i>Eriocampoides limacine</i>) ERICLI	Sawflies	Any relevant pome fruit	Pome fruit		Stone fruit
<i>Ceratitis capitata</i> CERTCA	Fruit flies	Apple MABSD	Pome fruit	Citrus	Stone fruit Kiwi ATIDE*
<i>Peritelus sphaeroides</i> PERESH, <i>Polydrusus</i> sp POLOSP, <i>Phyllobius</i> sp PLL BSP, <i>Otiorhynchus impressiventris</i> OTIOIM, <i>Byctiscus betulae</i> BYCTBE	Weevils (leaf-eaters)	Any pome fruit	Pome fruit		Stone fruit
<i>Rhynchites coeruleus</i> RNCHCA, <i>Rhynchites pauxillus</i> COENPA	Weevils (bud-damaging)	Any pome fruit	Pome fruit		Stone fruit
<i>Rhynchites bacchus</i> RNCHBA, <i>Rhynchites aequatus</i> COENAQ, <i>Furcipes rectirostris</i> ANTHRE	Weevils (fruit damaging)	Any pome fruit	Pome fruit		Stone fruit
<i>Anisandrus dispar</i> XYLBDI	Scolytidae (Ambrosia beetles)	Apple MABSD			Stone fruit, Woody ornamentals, Nut trees