



MOVENTO
2XSYS

User Guide

October 2016

Product profile

Movento is a ketoenol insecticide with unique two-way systemicity and mode of action for control of aphids and whitefly in Brussels sprouts, broccoli/calabrese, cabbage, cauliflower, collards and kale and aphids in lettuce. Movento also has an EAMU (1305/2016) for control of aphids in outdoor crops of carrot, parsnip, swede and turnip.

Active substance	150 g/L spirotetramat
Formulation	Oil Dispersion
Pack size	1 litre
Maximum individual dose	See crop specific sections
Maximum number of applications	2 per crop
Latest time of application	See crop specific sections
Water volume	300-600 L/ha
LERAP	None

Pests controlled

Lettuce (outdoor and protected)	Blackcurrant-lettuce aphid (<i>Nasonovia ribis-nigri</i>) Lettuce root aphid (<i>Pemphigus bursarius</i>)
Brussels sprout, broccoli/ calabrese, cabbage, cauliflower, collards and kale	Peach-potato aphid (<i>Myzus persicae</i>) Mealy cabbage aphid (<i>Brevicoryne brassicae</i>) Brassica whitefly (<i>Aleyrodes proletella</i>)
Carrots	Parsnip aphid (<i>Cavariella pastinacae</i>) Willow-parsnip aphid (<i>Cavariella theobaldi</i>) Willow-carrot aphid (<i>Cavariella aegopodii</i>) Peach-potato aphid (<i>Myzus persicae</i>)

Key advantages

- ▶ Protects the whole plant
- ▶ Provides lasting control
- ▶ Broad spectrum sucking pest control
- ▶ Safe to beneficials for excellent IPM
- ▶ No cross resistance



2xSYS Two-way systemicity and mode of action

Movento combines two important insecticidal characteristics; the mobility of 2-SYS two-way systemicity and a mode of action of inhibiting lipid biosynthesis.

Two-way systemicity protects the whole plant. It means that spirotetramat moves both down to roots and up to new growth that may not have been directly sprayed. It is redistributed to the most vulnerable tissue via both the phloem and xylem. Sucking pests primarily ingest it orally, ensuring uptake of a lethal dose wherever they are feeding.

Inhibition of lipid biosynthesis provides lasting control. By this mode of action Movento disrupts growth and development of sucking pests. Adult fecundity is reduced, resulting in fewer viable offspring. Young larval stages cannot develop and subsequently die. Movento provides effective population control and prevents 'bounce-back'. Yet it is safe to beneficials and therefore an excellent IPM choice.

Movento is not a 'knock-down' product and works over a period of days to control populations. It works best when plants are most actively growing – with the vascular system actively transporting the product – and when pests are actively feeding.



DO NOT apply to crops that are not actively growing (e.g. during drought, or cold periods) as movement of the active substance and hence efficacy will be impaired.

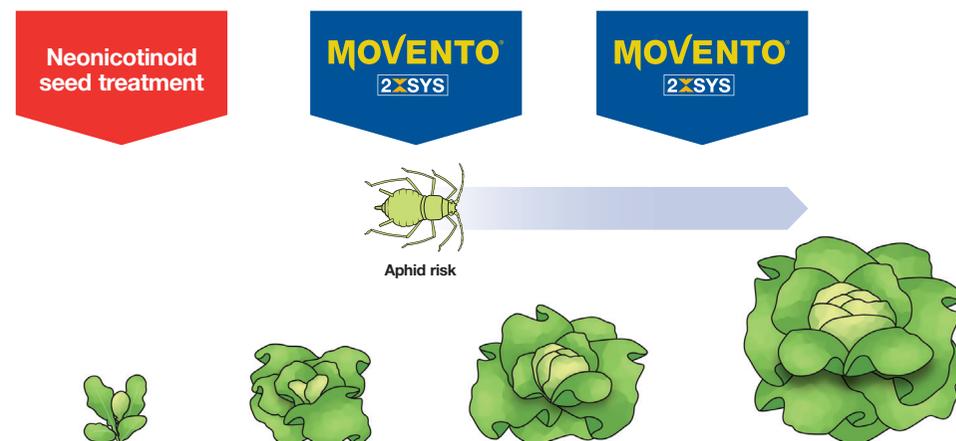
Lettuce

Maximum individual dose	0.5 L/ha
Latest time of application	7 days before harvest

Apply as soon as aphids appear in the crop and when the protection provided by neonicotinoid seed treatment (if used) has run out.

Neonicotinoid seed treatment generally gives lettuce several weeks protection from planting against root and foliar aphids. In a June or July planted crop, an application of Movento as the seed treatment's protection is running out should continue to keep the crop aphid free through to harvest.

Later planted crops, which can take longer to reach harvest, may require a second Movento application about three weeks after the first depending on aphid pressure and planned harvest date.



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Brussels sprouts, broccoli/calabrese, cabbage, cauliflower, collards and kale

Maximum individual dose	0.5 L/ha
Latest time of application	3 days before harvest

- ▶ Long lasting control from Movento comes from its thoroughness, preventing ‘bounce-back’ of populations. New infestations will need further treatment.
- ▶ Application is best timed when the crop has ‘thickened up’ and Movento’s unique ability to control hidden aphids is most valuable. Also at this time, increased ground cover will optimise capture of the chemical by the crop.
- ▶ Better spray cover of infested older leaves is important as they do not benefit much from redistribution which is towards growing points i.e. new/heart leaves, buttons and curd.
- ▶ Speed of activity and performance are adversely affected by factors which restrict the functioning of the plant’s vascular system and hence the rate of aphid feeding e.g. conditions such as drought and cold.

Use Movento in programmes planned with consideration of brassica crop type, the focus of control – aphids, whitefly or both – and whether or not it is grown from neonicotinoid treated seed or modules.

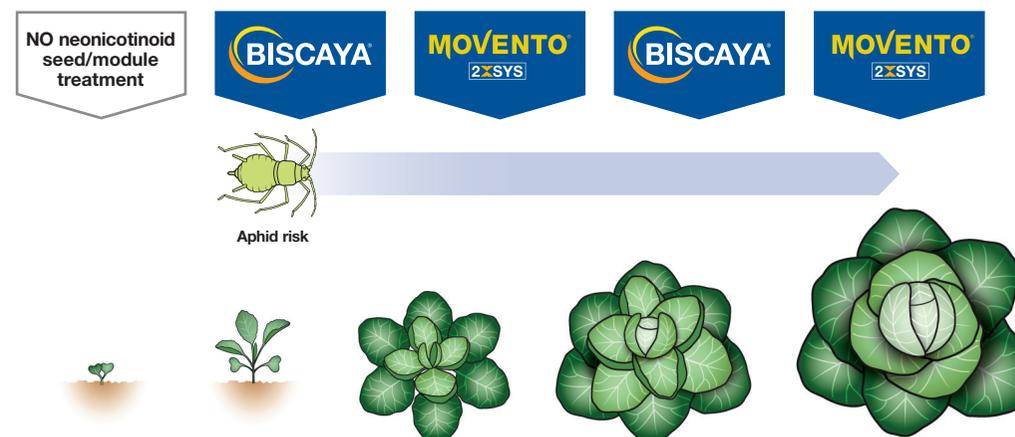
Programme planning: Aphid control

Where the focus is aphid control;

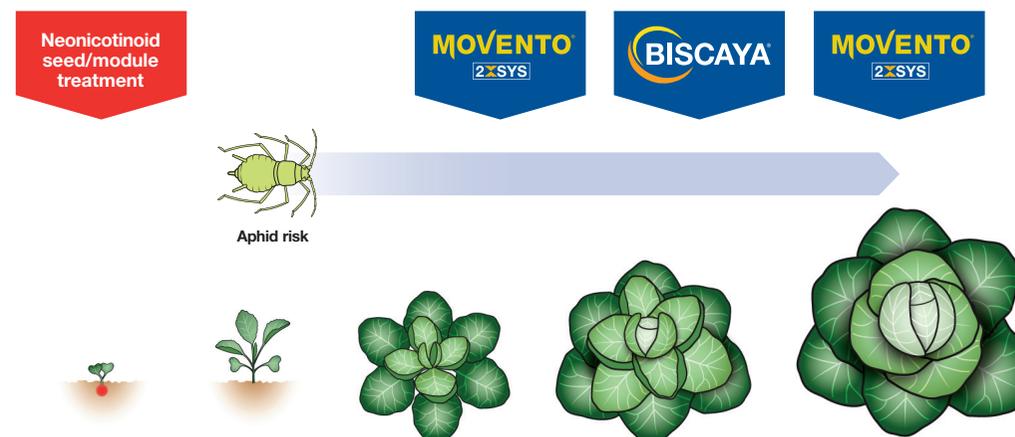
- ▶ Use Movento for long lasting protection in dense actively growing crops, when pests are hidden.
- ▶ Use Biscaya for quick ‘knockdown’ when crop structure is more open and aphids are more exposed to sprays and at the end of the season when colder conditions prevail.
- ▶ Begin foliar control programmes as soon as aphids appear in the crop and when the protection provided by neonicotinoid seed/module treatment (if used) has run out.

The following diagrams show how these principles can be applied to the planning of aphid control in cabbage when aphid infestation begins at the three true leaf stage. This approach can apply equally to broccoli/calabrese and cauliflower where hidden pests get into the florets and curd. It should also provide effective control of any whitefly present.

Aphid control – NO neonicotinoid seed/module treatment



Aphid control – following neonicotinoid seed/module treatment



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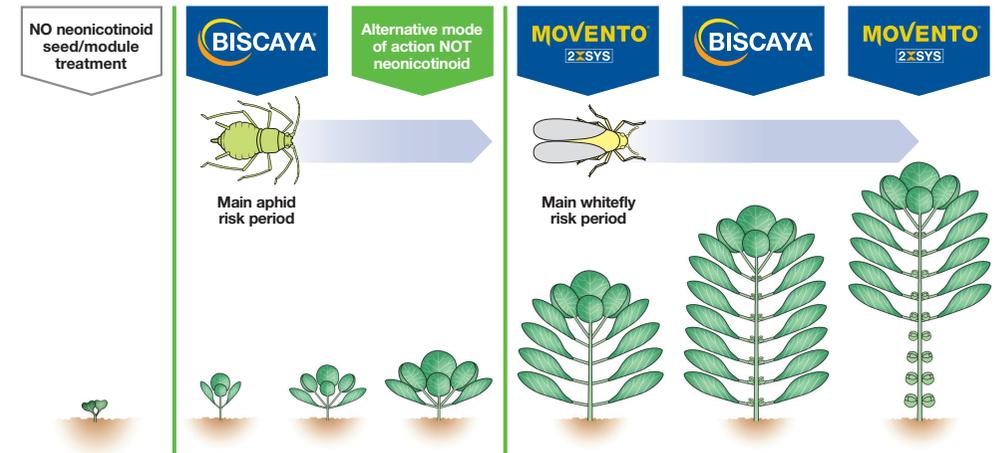
Programme planning; Whitefly control

Movento is currently the strongest product against whitefly, so in a whitefly epidemic year, when their control becomes the priority in crops of Brussels sprouts and kale, its use needs to be timed for best effect in protecting the marketable quality of the crop. However, early season aphids may infest the crop before whitefly arrive and they will need treatment too. The following principles will help plan effective programmes to tackle both pests.

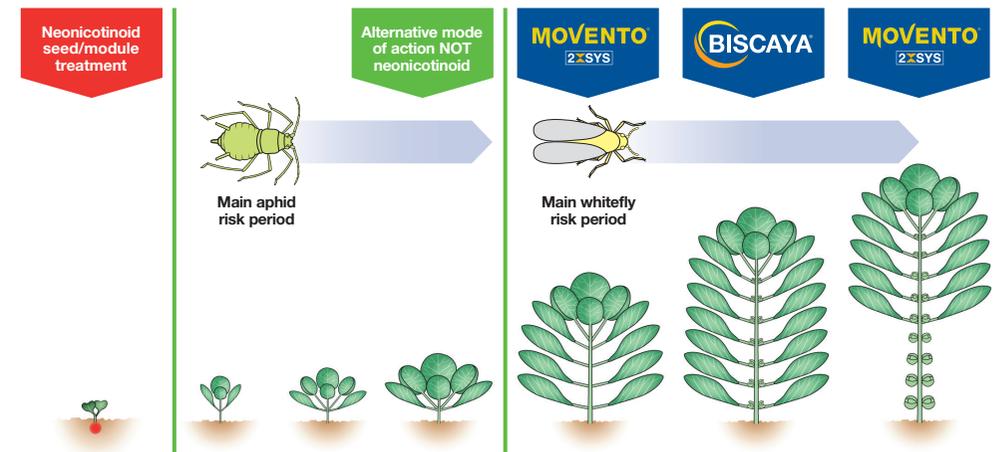
- ▶ If the crop is grown from seed/modules **not** neonicotinoid treated, allocate one Biscaya spray to target early season aphids and the second to target whitefly.
- ▶ If the crop is grown from neonicotinoid **treated** seed/modules, use an insecticide with an alternative mode of action to target early season aphids and allocate the Biscaya spray to later season use.
- ▶ Hold the first Movento application until the start of button initiation to protect the developing buttons for as long as possible.
- ▶ Under sustained whitefly pressure follow with Biscaya, for further aphid suppression and resistance management, before making the final Movento application to protect harvestable quality.
- ▶ This approach will also provide effective control of any later season aphids present.

The following diagrams show example foliar spray programmes for whitefly control in Brussels sprouts beginning in July when typically whitefly first appear in the crop. They also show how this can be preceded by early season aphid control.

Aphid and whitefly control – NO neonicotinoid seed/module treatment



Aphid and whitefly control – following neonicotinoid seed/module treatment



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Carrot

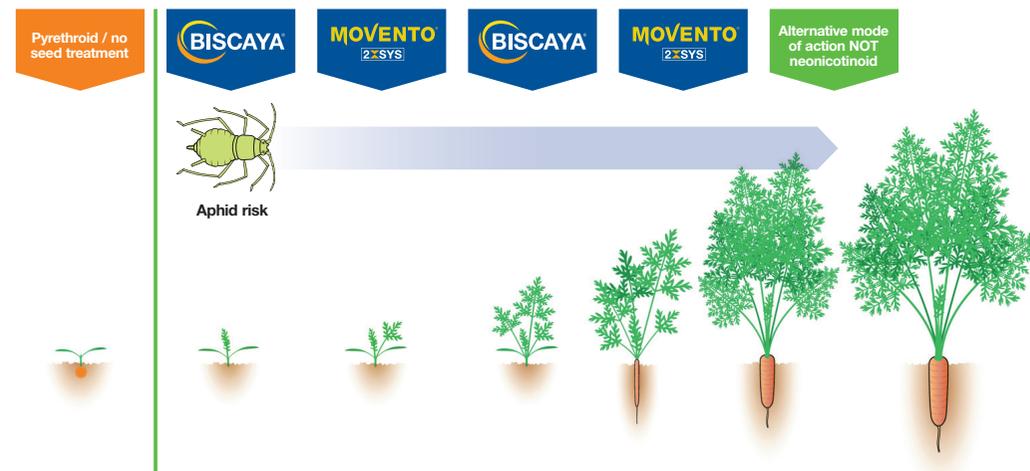
Maximum individual dose	0.3 L/ha
Latest time of application	8 weeks before harvest

Use on carrots is authorized by EAMU 1305/2016. Growers must comply with the conditions of this EAMU and must hold and read a copy of the EAMU document before applying the product.

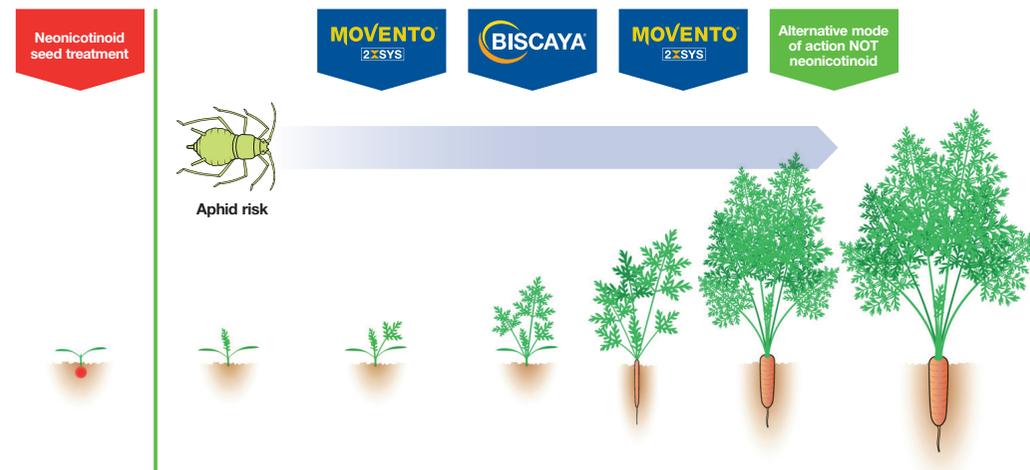
- ▶ Begin foliar control programmes as soon as aphids appear in the crop and when the protection provided by neonicotinoid seed treatment (if used) has run out.
- ▶ Use from May to mid-July when plants are actively growing. There needs to be sufficient leaf area for uptake (at least one true leaf, preferably two leaves) and good movement in the phloem for good redistribution to vulnerable tissues.

The following diagrams illustrate typical foliar spray programmes for aphid control in carrots beginning when aphids appear in the crop at the first true leaf stage.

Aphid control – following pyrethroid / no seed treatment



Aphid control – following neonicotinoid seed treatment



Resistance management

Movento should be used with other insecticides of a different mode of action, either in alternation or as a two-spray block within the programme e.g. following a neonicotinoid seed or soil treatment.

When planning Biscaya use in a programme, do not include more than two applications of any neonicotinoid insecticide (e.g. imidacloprid, thiacloprid or thiamethoxam) on any crop. Where a neonicotinoid insecticide has previously been used on the crop (e.g. as a seed treatment or soil treatment), use no more than a single foliar application of any neonicotinoid.

Where a neonicotinoid seed or soil treatment has been used, the first subsequent foliar spray should be a non-neonicotinoid containing product with a different mode of action.

Application

- ▶ Shake well before use.
- ▶ Apply in a water volume of 300 to 600 L/ha (according to crop density) as a medium quality spray.
- ▶ Always apply at the full recommended rate of use and in sufficient water volume to achieve the required spray penetration into the crop and uniform coverage necessary for optimal pest control.
- ▶ Avoid spraying within 5m of the field boundary to reduce effects on non-target insects or other arthropods.
- ▶ If the crop is intended for processing consult the processor before use.

EAMUs

Movento has extensions of authorisation for minor use (EAMUs) for use on a wide range of fruit, vegetable and herb crops. For an up to date list please visit the CRD EAMU online database at <https://secure.pesticides.gov.uk/offlabels/search.asp>

These are used at the grower's own risk; before use, a copy of the authorisation must be obtained from the CRD website.

Compatibility

Movento is physically compatible with a range of other products; for the current list please visit www.bayercropscience.co.uk

Biscaya contains thiacloprid. Movento contains spirotetramat. Biscaya and Movento are registered trademarks of Bayer.

Use plant protection products safely. Always read the label and product information before use. Pay attention to the risk indications and follow the safety precautions on the label. For further information, please visit www.bayercropscience.co.uk or call Bayer Assist on 0845 6092266 / 01223 226644

Issue date: October 2016

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