CARNADINE® Control of aphids to reduce BYDV threat to Autumn sown cereals

After one of the earliest harvests in living memory, a **significant area of autumn-drilled winter cereals** has been established this year thanks to favourable weather and sowing conditions post-harvest. Weedy and grassy stubbles acting as a green bridge risk direct aphid transfer, particularly with short turnaround times between spraying-off and planting.

Aphids are the most serious pests of cereal crops in Ireland. Damage occurs in two ways:

- By **transmitting virus (BYDV)** to and within crops,
- By direct feeding on tillers

The **Grain Aphid** (*Sitobion avenae*) is the most common **aphid vector of BYDV** in Ireland. BYDV can reduce the yield of April-drilled barley by 2 t/ha, while feeding aphids can reduce yield by 0.8 t/ha (Teagasc 2025). Recent research in Ireland has confirmed the development of resistance to pyrethroid insecticides (e.g. cypermethrin & lambda-cyhalothrin) in the Grain Aphid.

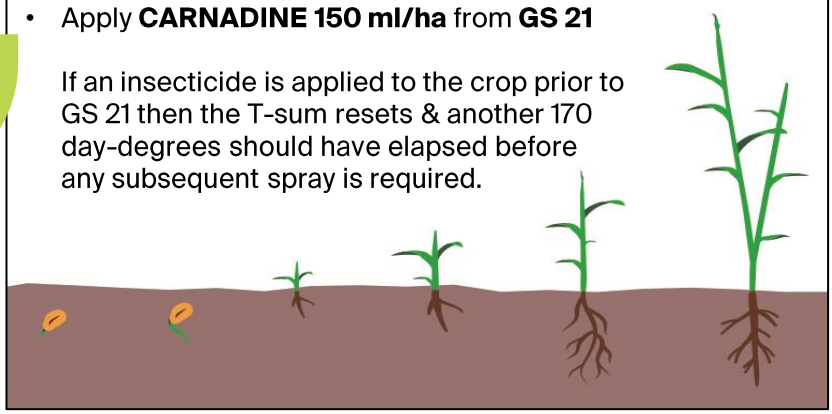
CARNADINE 150 ml/ha *Apply if aphids are found colonising wheat, barley, triticale & rye* ***from GS 21***

HIGH RISK
September sown

MEDIUM RISK
October sown

- Apply a pyrethroid insecticide from GS 12-14 if T-Sum reaches 170 day-degrees & aphids are present in the crop, or before if aphids are detected.
- Apply **CARNADINE 150 ml/ha** from **GS 21**

If an insecticide is applied to the crop prior to GS 21 then the T-sum resets & another 170 day-degrees should have elapsed before any subsequent spray is required.



T-Sum calculation of 170 day-degrees from crop emergence *is the sum of the average daily temperature above 3˚C.*

Early (September) drilled crops are at highest risk from aphid damage and in the absence of an effective insecticidal seed treatment may require their first foliar aphicide application within two weeks of emergence (subject to temperature), plus a follow-up treatment in October/November.

Cereals that emerge from October onwards are typically considered at lower risk but, particularly in mild weather, are likely to **require at least one foliar treatment to reduce virus transmission** within crops until colder weather reduces aphid activity going into Winter.

Smaller plants are at greater risk of damage following BYDV infection

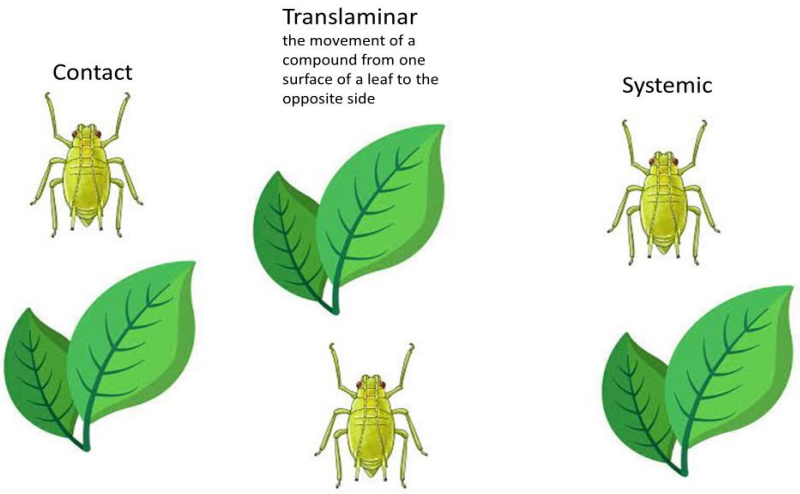
Development is affected above & below the soil surface, impacting the crop's ability to access & efficiently utilise resources.

Limiting early growth reduces yield potential

nufarm

CARNADINE®

Targets the pest via 1. contact & ingestion
Plant movement 2. Translaminar & 3. Systemic in plant



Key information

- ✓ ***Contact, systemic & translaminar activity***
- ✓ ***Key tool in resistance management***
- ✓ ***Unique in this insecticide group – positioned to address several pests & crops***
- ✓ ***Liquid formulation***

Mode of action: Acetamiprid is similar to nicotine & acts on pests in similar way:

- Blocks down the muscle receptors & locks up muscles, stops the insect moving by binding to receptors in the insect muscle.
- It acts as an analogue of the nicotinic acetylcholine receptor (main excitatory neurotransmitter of the central nervous system of the insects). The receptor + acetamiprid complex cannot be metabolized by acetylcholinesterase, causing uninterrupted nerve signal transmission. This induces muscular hyperexcitation that will cause the death of the insect.
- Acetamiprid is toxic to insects but not mammals & vertebrates.

Label & stewardship requirements

To protect non-target arthropods and the environment when applying CARNADINE it is vitally important to adopt the following stewardship measures:

- **Application timing** should take into account both the **T-Sums calculation of 170 day-degrees** from crop emergence, as well as crop inspections to determine the presence or absence of aphids prior to spraying.
- **Use at full rate & ensure good coverage** to deliver maximum effective dose to the target insect pest.
- **Drift Reducing Technology (DRT) sprayer nozzles:** CARNADINE must only be applied by horizontal boom sprayer fitted with 90% drift reducing nozzles across the full width of the sprayer boom.
- **Aquatic & non-target arthropod buffers:** To protect non-target arthropods a 5 metre untreated buffer zone must be maintained between treated crop & non-crop land & hedgerows.
- **Application timing:** Apply when the crop is at the correct growth stage, avoid spraying when bees are active i.e. avoid flowering stages & apply at times of year when bees are much less active, e.g. Autumn.

FURTHER INFORMATION

10 credits have been allocated to these technical bulletin series.
Subscribers can claim their IASIS Credits by emailing: ann@iasis.ie quoting **Reference IAS-nuf2548-9**

CARNADINE contains acetamiprid 200 g/l

Details of application rates and timings are given in Nufarm labels and product literature; both of which can be accessed from our website www.nufarm.com/ie. Alternatively, ring the Nufarm helpline on 01274 694714, Monday to Friday 9.00 - 17.00

nufarm