



Safely using insecticides containing carbaryl on plants



Carbaryl is toxic

Carbaryl is a carbamate that is an active ingredient in some insecticides to control a range of pests such as aphids, leaf miners, caterpillars and codling moths. However, carbaryl is toxic to both people and the environment. You should only use carbaryl if there are no safer alternatives and as part of an integrated pest management system (IPM).

Products that contain carbaryl

The product label of insecticides will list the active ingredients. Check the label to see if carbaryl is one of the actives. If it is, you need to follow the practices outlined in this document.

Insecticides on the market that are known to contain carbaryl include **Carbaryl Insect Control**, **Grochem Carbaryl** and **Seven Flo**.

This document contains

This document provides guidance for people using carbaryl-containing insecticides for plant protection. It incorporates information about both the old and the new rules for using carbaryl and provides guidance on protecting your health, the health of others and the environment.

There are other rules about storing and disposing of these products safely that you must also follow but are not included in this document.

For all of the rules that apply to carbaryl, check the controls for approved hazardous substances database on our website.

✚ Protect your health

You need to take extra care when using carbaryl so that you are exposed to as little of the product as possible.

- While using the product you must wear the right safety gear – this is explained in more detail under the heading *Wear the right safety gear*.
- After using carbaryl you must wash your hands thoroughly with soap and water before eating, drinking, chewing gum, smoking or using the toilet. If you don't, you will end up consuming some of the insecticide.
- Once you have finished using insecticides for the day remove the clothes you were working in, have a shower or bath with soap and water, shampoo your hair, and put on clean clothes.
- Wash your work clothes separately from other clothes before wearing them again.



Wear the right safety gear

Because of the toxicity of carbaryl you must wear the right safety gear to protect your health. If you are an employer, you must provide your staff with this gear and train them to wear it properly.

The new rules specify that full personal protective equipment (PPE) and respiratory protective equipment (RPE) (see box below) must be worn when mixing, loading or applying carbaryl.

The product label and safety data sheet will give you information about what PPE and RPE you must wear when handling the product. If you can't find this information, call the supplier of the product or contact the Health and Safety Group at the Ministry of Business, Innovation and Employment during business hours on 0800 20 90 20.

Protect yourself – with full PPE

When using carbaryl you must wear:

- chemical resistant coveralls
- chemical resistant gloves
- chemical resistant footwear plus socks
- protective eyewear
- chemical resistant headgear.

And RPE

You must also wear appropriate respiratory protective equipment to protect against breathing in the substance in dust, mist, gas or vapour forms.

After wearing PPE make sure you clean it according to the manufacturer's instructions before you, or anyone else, wears it again.

If the insecticide label offers specific instructions on how to clean the PPE, follow those instructions.

If there are no instructions available you should wash the PPE in detergent and hot water. The person washing the PPE should wear gloves when handling it.

Applying carbaryl while in an enclosed cab

If you apply carbaryl using a vehicle and you are in a fully enclosed cab that prevents contact with carbaryl you are not required to wear full PPE. The enclosed cab must totally surround the person in the cab and be equipped with a functioning ventilation system that protects the person inside the cab from dust, mist and volatile organic compounds. The cab must be maintained frequently and according to the manufacturer's instructions.



However, even if you apply carbaryl using an enclosed cab you must wear coveralls so that your skin is not exposed and socks and shoes. You must also have full PPE and RPE available so that you can put it on if you need to get out of the cab in an area where carbaryl has been applied (for example if you need to get out to unblock nozzles). Before re-entering the cab you will need to take off the PPE and RPE and store them in chemical resistant containers to prevent the cab becoming contaminated with insecticide and to stop the RPE filters from continuing to absorb contaminants.

Always have a safety data sheet (SDS) available for your products. Information about what to do in the event of a poisoning is usually given in Section 4 of the SDS.



Carbaryl is toxic to the environment

Carbaryl is highly toxic to the environment, insects, birds, fish and other aquatic creatures.

You must not apply carbaryl into or onto water.

Protect bees

Carbaryl is toxic to bees. You must not spray carbaryl where bees are foraging or onto any flowering plants, including weeds.

If you spray carbaryl on non-flowering plants that are close to other plants in flower you must only spray in the late evening when bees have stopped working.



Applying carbaryl

Approved handler

You must be an approved handler or be under the direct supervision of an approved handler to handle any insecticide containing carbaryl.

Application amount and frequency

From 1 July 2015, carbaryl products can be applied at a maximum rate of 2,700 g of carbaryl per hectare and no more than three times per crop cycle.

Don't enter the treated area for 12 hours

The new rules prohibit people entering the area where carbaryl has been applied for 12 hours unless they are wearing full personal protective and respiratory protective equipment. This period of time is sometimes called a restricted entry interval (REI) and is to protect peoples' health from any carbaryl still present on plants or in the air.

The 12 hour time period starts when the application is complete and, if applied indoors, the ventilation system is switched on.

If carbaryl was applied indoors you can only enter the building within that 12 hour period to carry out tasks associated with ventilation.



Outdoor application

Applying carbaryl outdoors has the potential to affect people and places outside of your property. To manage the potential risk to others, there are a number of new rules that you must follow.

Notification requirements

Before using wide-dispersive methods such as a boom sprayer or aerial application, you must notify anyone that could potentially be affected. People affected could include occupiers and owners of land, homes or property that share a boundary with the property where you are applying the product.

You must notify people in writing at least two working days before each application but no earlier than four weeks prior to applying carbaryl.

The notification must include the following information:

- where the substance will be applied
- the date and approximate duration of each application
- how to avoid exposure (for example, closing windows and doors, staying indoors during application and bringing laundry indoors)
- the name of the organisation(s) undertaking the application
- contact details for the person in charge of the application (phone, email or postal address, including a contact number for immediate contact during application).

Avoiding spray drift

When you apply carbaryl outdoors you must take all practical steps possible to avoid spray drifting onto neighbouring properties and sensitive areas. Sensitive areas might be places where people are present or where native animals and plants are found.



Practical tips to reduce spray drift

- Don't spray if it's windy
- Increase the droplet size of your spray to reduce the distance the spray is likely to travel
- Lower the height of release booms – this also reduces the distance the spray travels
- Establish a buffer zone between your property and sensitive areas. A buffer zone is a no-spray area between where you apply a substance and neighbouring properties or sensitive areas
- Shelter belts, such as hedges, can reduce the distance spray is likely to drift by acting as a physical barrier. The presence of a shelter belt may reduce the required buffer zone.

For further guidance on spray drift management and the safe use of agrichemicals refer to NZS 8409:2004 Management of Agrichemicals.

Taking these practical steps is particularly important when you apply carbaryl using wide-dispersive methods such as by aerial application or boom sprayer.

Record how you reduce spray drift

You also need to record the measures you have taken to reduce spray drift when applying carbaryl containing products. You can include this information in your spray diary.

Your record must include:

- The name of the substance
- The date and time of each application
- The classification(s) of the substance
- The amount of the substance applied
- The location the substance was applied
- If the substance is applied to or discharged into the air, a description of the wind speed and direction when the application took place
- The name of the user of the substance and the user's address
- Details of measures taken to ensure that there is no harm caused to neighbouring properties or sensitive areas.

These records must be kept for at least three years after applying carbaryl.

Indoor application

Buildings or structures, such as greenhouses or pack houses that house crops, are closed environments where natural ventilation is limited. Because of this limited ventilation, specific rules apply to the use of carbaryl indoors.

Signs

The person in charge of the building where carbaryl is being applied, along with the person in charge of the application, must ensure that signs are put up at each entry point to the building. This rule makes sure other people in the area know when it is safe to re-enter the building.

The signs must be in place from the beginning of the application until the end of the 12 hour period when people are prohibited from entering the building. Signs must be in English, be clear, easily understood and readable from a distance of at least ten metres.

They must state:

- that application of a substance toxic to humans is being carried out
- that entry into the application area is not permitted unless PPE and RPE are worn.

Signs must also:

- identify the person in charge of the application
- state the day on which the application began
- state the time and date when it is safe to re-enter the building.

You must remove the signs within three days of the end of the REL.



Contact Us

For further information contact the EPA Hazardous Substances Information line on 0800 376 234 or email hsinfo@epa.govt.nz