

Chlorpyrifos dust is an organophosphate insecticide which is commonly used in the control of bunch pests.

The permit for use (PER14240) is held by the Australian Banana Growers' Council and is current until 30 SEP 2020. It includes all registered products containing 500 g/kg Chlorpyrifos as their only active constituent.

Directions for use in Bananas:

Insect Pests	Application rate
Sugar cane bud moth, Banana scab moth, Rust thrips, Mealy bugs and caterpillars	Dust is prepared by mixing at a rate of 100 g product per 5 kg talc. Apply 2 - 5 g of prepared dust per bunch

Chlorpyrifos is a poison which acts as an insecticide by affecting an important enzyme involved in transmitting nerve impulses in the body.

Chlorpyrifos can poison humans as well as insects if absorbed through the skin, inhaled or swallowed.

Major exposure can be fatal but repeated exposure may cause allergic disorders and repeated minor exposure may have a cumulative poisoning effect.

It is therefore very important the product is used according to the label, Safety Data Sheet and permit instructions including the use of personal protective equipment.

Under Work, Health and Safety (WHS) laws, businesses are required to ensure, so far as is reasonably practicable, the health and safety of their workers and others while at work.

In terms of chemical use this includes:

- ⇒ Provision of a safe work environment and safe systems of work
- ⇒ The safe use, handling, storage and transport of substances
- ⇒ Provision and maintenance of Personal protective equipment (PPE) fit –tested
- ⇒ Provision of any information, training, instruction or supervision that is necessary to protect workers from risks to their health and safety arising from their work.
- ⇒ Monitoring the health of workers and the conditions at the workplace to prevent illness or injury of workers arising from doing their work.

Therefore employers have a duty to ensure their employees **understand how** to use the product safely and are **provided with the correct equipment** to ensure their safety. There are significant penalties for failing to comply with the WHS laws.

Critical factors for chlorpyrifos use:

- ⇒ Prepare/mix talc and chlorpyrifos in a well ventilated area.
- ⇒ Use Unimin Talc T45B or equivalent to prepare dust and refer to its MSDS
 - * Note although talc alone is considered non-hazardous, it can cause serious damage to health by prolonged exposure through inhalation. Therefore avoid breathing dust and wear suitable respiratory equipment.
- ⇒ Do not apply excessive dust. Apply a light coating of dust to the inside of the bunch cover and fruit.
- ⇒ Dusting should occur within a week of bunch covering.
- ⇒ Apply one application only.

Personal Protective Equipment:

People operating under this permit must adhere to the following directions and should consult the safety data sheet:

- ⇒ When opening the container and mixing with talc: wear a respirator with a particulate filter, or a P1 or P2 respirator, or a respirator with a particulate and organic vapour filter, cotton overalls buttoned to the neck and wrist and washable hat, PVC gloves and goggles. Any PPE should be fit tested prior to use.
- ⇒ When applying the prepared dust wear a half face piece respirator (as described above), cotton overalls buttoned to the neck and wrist and washable hat, PVC gloves and goggles.
- ⇒ After use, wash hands with running water and soap, dry hands on single use paper towels.
- ⇒ Remove hats and other clothing and wash separately from other garments.
- ⇒ Also clean contaminated safety equipment such as goggles and other reusable equipment.
- ⇒ Appropriately dispose of single use respirators.

Exposure guidelines have been established for Chlorpyrifos and users may require health monitoring For more information see Safe Work Australia's guide on 'Hazardous Chemicals requiring Health Monitoring' and the section on Organophosphate pesticides for worker monitoring protocols.

Other products which are registered for use in controlling bunch pests include:

Alternatives for bunch application	Control chemicals with alternatives application methods
Chlorpyrifos - e.g. Strike-out 500 scab moth, weevil borer and caterpillars (bunch spray)	Imidacloprid SusCon Yellow Rust thrips, banana weevil borer and grey back cane grub (granules)
Chlorpyrifos - e.g. SusCon Ribbon scab moth, rust thrips, russet mite and sugarcane bud moth in bananas. (plastic ribbon)	Spirotetramat (Movento energy is a mixture of imidacloprid and spirotetramat) – however this is only approved for rust thrips and banana weevil borer (liquid)
Acephate e.g. Titan 970 scab moth, flower thrips and rust thrips. (Bell injection/ bunch spray)	Spinetoram (Success Neo) - registered in bananas for rust thrips but not flower thrips (liquid)
Bifenthrin- e.g Venom, Talstar flower thrips, rust thrips and scab moth banana weevil borer (bell injection)	Fipronil (Regent) (registered for rust thrips) (liquid)

