

8 March-2024

Director, Chemical Review  
Australian Pesticides and Veterinary Medicines Authority  
GPO Box 3262  
SYDNEY NSW 2001

Dear Sir/Madam,

**Submission regarding the use of chlorpyrifos for the Banana Industry.**

On behalf of the banana industry, the Australian Banana Growers' Council (ABGC) welcomes the opportunity to provide comment on the 2023 Chlorpyrifos Proposed Review Decision and The Review Technical Report. Chlorpyrifos is widely used by the banana industry being one of the most efficacious and cost-effective actives available for control of **bunch pests (Banana rust thrips, banana scab moth, Sugarcane bud moth, mealy bugs, caterpillars) under label approvals and under PER14240**. Additionally, it also known to provides some suppression of mite populations.

**1. Importance to the banana Industry**

The Australian banana industry is Australia's single biggest horticulture industry contributing around \$1.3b annually to the economy and over 10,000 full-time equivalent jobs. Industry data for **2022/23** found that more than **374,251 tonnes** of bananas were produced with an estimated farm gate value of about **\$600 million**. There are three main banana growing regions which includes far north Queensland (NQ), northern New South Wales (NSW) and Carnarvon in Western Australia (WA). **Ninety-four percent of the total production occurs in NQ. The national industry supplies 100% of Australia's domestic banana demand.**

**Bunch pests** are considered a major production constraint by industry and have been listed as high priority pests in the 2024 Banana Strategic Agrichemical Review Process (SARP). Bunch pests are active all year round in NQ and attack the developing banana inflorescence (bell) as it emerges from the center of the pseudostem. The insects feed on developing fruit which has a significant impact on fruit quality and in severe cases, can render the fruit unmarketable causing costly rejections. Banana growers have relied on chlorpyrifos as an essential part of bunch pest control since the withdrawal of omethoate in 2018, when options for bunch pest control have become limited.

The use of chlorpyrifos across the national industry is widespread for controlling bunch pests. In the main growing area of NQ, more than **99% of chlorpyrifos sold to the banana industry**, is for bunch pest control. **In that region, 95%** of growers apply chlorpyrifos to the bunch either by bunch spraying or by bunch dusting. In NSW, the use of chlorpyrifos to control bunch pests is also common practice.

**2. How chlorpyrifos is used in the banana industry**

**ABGC believes that many of usage patterns used in the technical report are not relevant to today's banana farming.**

**Aerial application- (scab moth)** has rarely been used since the 1980s when IPM compatible practices were adopted - such as the bell injection of chemicals was implemented to assist in controlling bunch pests. Nowadays aerial application of chlorpyrifos is unheard of.

**Airblast/ broadcast (scab moth)** to a plantation is never used – this is another legacy usage pattern from the past.

**Bunch application (Banana rust thrips, banana scab moth, Sugarcane bud moth, mealy bugs, caterpillars).** As mentioned above, the current and most frequently used application method is bunch spraying or bunch dusting. This application method is targeted and contained under the bunch cover as follows.

Currently, common farm practice is to inject the developing bell at bell-emergence with acephate or spinetoram then treat developing bunches at bagging (1-2 weeks later) **with chlorpyrifos spray or dust.**

The bunch cover (or bag) is put on over the bunch and Chlorpyrifos spray or Chlorpyrifos dust is applied up under the cover to the developing bunch with a wand. (the spray is applied to runoff – approx. 40-60 mL depending on bunch size). Prepared dust mix is applied with low pressure air gun so as not to damage the fruit. Often, other jobs are done by the user while applying the bunch covers, such as attaching support string to the bunch and/or inserting clip sheets (small sheets of plastic) between each hand of bananas within the bunch, to stop the fingers from rubbing on each other. If these other jobs are done while bagging and bunch treatment with chlorpyrifos, the work rate is almost halved.

Sometimes a follow-up spray into the bunch is required but this is not commonplace.

**Impregnated bunch covers** – historically these were used by some of the industry, but they are currently unavailable in Australia and therefore not used.

**Band Spray (banana weevil borer)** – Though this is a targeted application (applied as a narrow band to the lower 30 cm of the plant and a 30cm wide around the base of the plant) **growers in NQ and the NSW industry do not use chlorpyrifos for control of banana weevil borer. Relying on other control options.**

Additionally, the Chlorpyrifos750WG formulation has not been available for many years.

### **3. Workrates and application rates**

**ABGC believes that the work-rates and application rates of 30 ha/day and 250 g ai/ha used in the technical report to assess worker safety are gross overestimations of what is being used in current banana farming practices.**

The following information and details, shown below in Table 1, relating to current practices will hopefully inform more accurate risk assessments by the APVMA.

In NQ where 94% of the banana industry is located and the majority of chlorpyrifos is used:

- The average number of banana plants/ hectare is approximately 1550.
- Each plant has 1.1-1.2 bunches per/plant/ year depending on whether it is a plant crop or ratoon, and the location. In cooler areas like the Atherton Tablelands the cycle time is more like 1.1 bunches/plant/ per year. In NSW the average is one bunch/plant/year.

**Table 1 Activities and work rates for bunch pest applications to banana plantations.**

Activity	Formulation	Pest	Work rate: In an 7h day, the average No. of bunches one person could treat.	Total applied per day/person
Bunch spray or bunch dust  + bunch covering.	500WP	Bunch Pests	300-400 bunches  <b>Spray:</b> is applied to the bunch to runoff which depends on the size of the bunch but varies from about 40-60 mL.  10 g ai is mixed with 5 L water = 0.002 g/mL  OR  <b>Dusting:</b> 2-5 g prepared mix is applied per bunch (which contains 0.04g- 0.1g ai/bunch)	12-24 L spray  24 g ai – 48 g ai / person/day  or  For dust 12g-40 g ai/person/day
Bunch spray or bunch dust  + bunch covering + clip sheets /other jobs	500WP	Bunch Pests	150-200 bunches  <b>Spray</b> as above 40-60 mL /bunch.  OR  <b>Dust</b> 2-5 g prepared mix is applied per bunch (0.04g- 0.1g ai/bunch)	6-12 L spray  12-24 g ai/person/day  Or  For dust 6g-20g ai/person/day
Bunch spray only,  as a follow up spray. (not often required)	500WP	Bunch Pests	500  40-60 mL per bunch  Mix 10 g/5 L water = 0.002 g/mL	20L – 30L  40g – 60 g ai/person/day

(Note The 500EC formulation, though registered for bunch application is not favoured as it has been reported to cause fruit burn therefore growers prefer to use the 500WP for bunch application).

Typical examples of equipment used for **bunch spraying**:

- Hydrostatic tractor spray tank with hand gun, low pressure 60 psi, low volume with a 12 v pump.
- A 70L tank mounted on the bagging machine with a silvan diaphragm with a spray wand attached.

A typical example of equipment used for **bunch dusting**: A 20 L cylinder attached to a sandblasting gun venturi system (with pressure turned right down so as not to damage the fruit).

**In summary, the usage patterns, work rates and application rates quoted in the technical report are not an accurate reflection of the use of chlorpyrifos in the banana industry and therefore we believe the work, health and safety risks to the user and the environment have been overstated.**

#### **4. Conclusion**

Chlorpyrifos is an important chemical used widely by the banana industry for targeted control of bunch pests. The options for banana growers are becoming increasingly limited as actives come under review and are lost to industry. Chlorpyrifos is considered to be an effective chemical, easy to use and less hazardous to workers and the environment, and it is important to retain its use to help manage pest populations and prevent build-up of resistance.

We thank-you for your consideration as chlorpyrifos withdrawal from use would have a significant impact in the banana industry. Should you have any questions please don't hesitate to contact me.

Yours sincerely,

A handwritten signature in blue ink that reads "R. M. Godwin". The signature is written in a cursive style with a large, looped 'G'.

Dr Rosie Godwin

R&D Manager