

5.24 Pyriproxyfen (200)

RESIDUE AND ANALYTICAL ASPECTS

Pyriproxyfen is classified as a juvenile hormone mimic that interferes with normal insect development and reproduction. Metamorphosis of immature life stages is affected, but adults are not directly controlled, although production of viable eggs is affected by transovarial activity. Pyriproxyfen is absorbed through the insect cuticle but may also act by ingestion.

Pyriproxyfen was first evaluated by the JMPR in 1999 and then in 2000 and 2001. In the 1999 evaluation for toxicity and residues an ADI of 0–0.1 mg/kg bw was established. The Meeting concluded that it was not necessary to establish an ARfD due to the low acute toxicity of pyriproxyfen.

The 1999 JMPR recommended the following residue definition for pyriproxyfen:

Definition of the residue for compliance with the MRL and dietary risk assessment in plant and animal commodities: *pyriproxyfen*

The residue is fat-soluble.

At the 2018 JMPR, where new uses of pyriproxyfen were evaluated, the Meeting considered the banana and mango trials approximating the critical GAPs insufficient to estimate maximum residue levels.

Pyriproxyfen was scheduled by the fiftieth session of the CCPR for the reassessment of the banana and mango trials reviewed in 2018 against new GAP information, for bananas from Costa Rica and for mangoes from Malaysia, received by the current Meeting.

Results of supervised residue trials on crops

Banana

The critical GAP for bananas is in Costa Rica with four foliar sprays of 0.12 kg ai/ha/application with a 20-day re-treatment interval (RTI) and a PHI of 0 days.

As none of the trials conducted in Costa Rica and Guatemala reflected the critical GAP, in regards to application rate and number of applications, and the proportionality approach could not be considered, the Meeting was unable to estimate a maximum residue level or STMR for banana.

Mango

The critical GAP for mangoes is in Malaysia with two foliar sprays of 0.005 kg ai/hL/application with a 2-week RTI and a PHI of 14 days.

Residues of parent pyriproxyfen in whole mango fruits treated in accordance with the critical GAP were (n = 6): < 0.02 mg/kg.

The Meeting estimated a maximum residue level of 0.02(*) mg/kg and a STMR of 0.02 mg/kg.

Residues in animal commodities

The Meeting noted that no commodities considered by the current Meeting are relevant for livestock animal feeding.

RECOMMENDATIONS

On the basis of the data obtained from supervised trials, the Meeting concluded that the residue levels listed in Annex 1 are suitable for establishing maximum residue limits and for IEDI and IESTI assessments.

Definition of the residue for compliance with the MRL and dietary risk assessment for plant and animal commodities: *pyriproxyfen*

The residue is fat-soluble.

DIETARY RISK ASSESSMENT

Long-term dietary exposure

The ADI for pyriproxyfen is 0–0.1 mg/kg bw. The International Estimated Daily Intakes (IEDIs) for pyriproxyfen were estimated for the 17 GEMS/Food Consumption Cluster Diets using the STMR or STMR-P values estimated by the JMPR. The results are shown in Annex 3 of the 2019 Extraordinary JMPR Report.

The IEDIs ranged from 0–1% of the maximum ADI. The Meeting concluded that long-term dietary exposure to residues of pyriproxyfen from uses considered by the JMPR is unlikely to present a public health concern.

Acute dietary exposure

The 1999 JMPR decided that an ARfD for pyriproxyfen was unnecessary. The Meeting therefore concluded that the acute dietary exposure to residues of pyriproxyfen from the uses considered is unlikely to present a public health concern.