

5.30 THIAMETHOXAM (245) AND CLOTHIANIDIN (238)

RESIDUE AND ANALYTICAL ASPECTS

Thiamethoxam and clothianidin were evaluated for toxicology and residues as a new compound in 2010, resulting in a number of MRL recommendations. Additional residue data for both compounds were evaluated in 2011. The residue definition for thiamethoxam in plant commodities for enforcement is thiamethoxam, while the residue definition for dietary risk assessment is thiamethoxam and the metabolite CGA322704 (clothianidin), considered separately. The residue definition for clothianidin in plant commodities for enforcement and dietary risk assessment is clothianidin.

At the 2010 JMPR Meeting, a Codex MRL of 0.01* mg/kg for thiamethoxam and 0.01* mg/kg for clothianidin were recommended based on thiamethoxam use on papaya. Subsequent to the 2010 JMPR meeting a more critical GAP for the use of thiamethoxam on papaya was supported by the Brazilian authorities. Residue trials were conducted in 2006 to support the use on papaya and summaries of the trials have been provided to support a revised Codex MRL for thiamethoxam and clothianidin on papaya.

Methods of Analysis

The methods reported to the Meeting and used in the supervised residue trials, determined parent thiamethoxam and the metabolite CGA 322704 (clothianidin). Samples were extracted with methanol:water. The final residue could then be determined by HPLC-MS-MS. The Meeting considers validation sufficient for papaya with an LOQ of 0.01 mg/kg for parent and 0.01 mg/kg for its metabolite.

Stability of pesticide residues in stored analytical samples

The 2010 JMPR received data that showed thiamethoxam and clothianidin were stable for 1–2 years when stored frozen at -10 °C or lower for a large range of commodities.

Results of supervised residue trials on crops

The Meeting received supervised field trials data for thiamethoxam use on papaya in Brazil.

Critical GAP for papaya in Brazil is for 1 soil drench application at 0.2 kg ai/ha followed by 2 foliar spray applications (interval 16 days) at 0.050 kg ai/ha with a PHI of 14 days. Trials from Brazil (one drench at 0.20 kg ai/ha, one foliar spray at 0.050 kg ai/ha, one drench at 0.20 kg ai/ha plus three foliar sprays at 0.050 kg ai/ha and PHI up to 7 days) did not match this GAP. As both the number of applications and the PHI did not match the critical GAP, it was not possible to apply the proportionality approach.

Trials in/on papaya submitted for the 2010 JMPR supported only drench applications and were used to set the current MRL of 0.01* mg/kg for thiamethoxam and clothianidin.

The Meeting agreed that the Brazilian datasets for papaya matching Brazilian GAP could not be used to support a higher papaya maximum residue level recommendation. The Meeting confirmed the previous maximum residue level recommendation of 0.01* mg/kg thiamethoxam on papaya and 0.01* mg/kg clothianidin on papaya.