

## 5.15 FLONICAMID (282)

### RESIDUE AND ANALYTICAL ASPECTS

Flonicamid is a systemic pyridine carboxamide insecticide with selective activity against Hemipterous pests, such as aphids and whiteflies, and Thysanopterous pests such as Thrips.

Flonicamid was first evaluated by the 2015 JMPR where an ADI of 0–0.07 mg/kg bw was established. An ARfD was determined to be unnecessary. A residue definition of *flonicamid* was determined for compliance with the MRL and for estimation of dietary intake for plant commodities. For compliance with the MRL and for estimation of dietary intake for animal commodities, the residue definition was determined as the *sum of flonicamid, N-cyanomethyl-4-(trifluoromethyl)nicotinamide and the metabolite TFNA-AM, 4-(trifluoromethyl)nicotinamide, expressed as flonicamid.*

Flonicamid was proposed by the 48<sup>th</sup> Session of the CCPR for the evaluation of additional new uses. The current Meeting received new GAP information and supervised field trials on legume vegetables and pulses.

#### *Methods of analysis*

The LC-MS/MS Method P-3561, previously evaluated by the 2015 JMPR was used to analyse all samples of legume vegetables and pulses collected from the supervised field trials. Concurrent method validation was conducted with each of the trials resulting in acceptable recoveries at fortification levels that bracketed the flonicamid residues reported in the trials.

#### *Stability of pesticide residues in stored analytical samples*

Storage stability studies were conducted concurrently with the supervised field trials. These data indicated that residues of flonicamid in beans without pods, peas without pods, dry beans and dry peas were stable for 31 months, 33 months, 22 months and 31 months, respectively, which cover the storage durations of all collected samples of legume vegetables and pulses.

#### *Results of supervised residue trials on crops*

##### *Legume vegetables*

###### *Beans with pods*

In Canada and the USA, the critical GAP for flonicamid on beans is 100 g ai/ha with a maximum of 3 applications or 300 g ai/ha/season and a PHI of 7 days.

A total of six independent trials were conducted in the USA and Canada, during the 2012 growing season, in accordance with the critical GAP. Residues were 0.053, 0.084, 0.091, 0.12 (2) and 0.41 mg/kg.

The Meeting estimated a maximum residue level of 0.7 mg/kg and an STMR of 0.1055 mg/kg for the subgroup beans with pods (except soya bean).

###### *Peas with pods*

In Canada and the USA, the critical GAP for flonicamid on peas is 100 g ai/ha with a maximum of 3 applications or 300 g ai/ha/season and a PHI of 7 days.

A total of five independent trials were conducted in the USA and Canada, during the 2012 and 2013 growing seasons, in accordance with the critical GAP. Residues were 0.040, 0.13, 0.14, and 0.35 (2) mg/kg.

The Meeting estimated a maximum residue level of 0.8 mg/kg and an STMR of 0.14 mg/kg for the subgroup peas with pods.

*Succulent beans without pods*

In Canada and the USA, the critical GAP for flonicamid on beans is 100 g ai/ha with a maximum of 3 applications or 300 g ai/ha/season and a PHI of 7 days.

A total of six independent trials were conducted in the USA and Canada, during the 2012 growing season, in accordance with the critical GAP. Residues were 0.038, 0.039, 0.076, 0.078, 0.086 and 0.10 mg/kg.

The Meeting estimated a maximum residue level of 0.3 mg/kg and an STMR of 0.077 mg/kg for the subgroup succulent beans without pods (except soya bean).

*Succulent peas without pods*

In Canada and the USA, the critical GAP for flonicamid on peas is 100 g ai/ha with a maximum of 3 applications or 300 g ai/ha/season and a PHI of 7 days.

A total of six independent trials were conducted in the USA and Canada, during the 2012 and 2013 growing seasons, in accordance with the critical GAP. Residues were 0.041, 0.045, 0.048, 0.10, 0.18 and 0.20 mg/kg.

The Meeting estimated a maximum residue level of 0.4 mg/kg and an STMR of 0.077 mg/kg for on the subgroup succulent peas without pods.

*Pulses*

*Beans (dry)*

In Canada and the USA, the critical GAP for flonicamid on beans is 100 g ai/ha with a maximum of 3 applications or 300 g ai/ha/season and a PHI of 7 days.

A total of nine independent trials were conducted in the USA on beans during the 2010 and 2011 growing seasons. Residues in samples treated in accordance with the critical GAP were < 0.020 (6), 0.028, 0.030 and 0.091 mg/kg.

The Meeting estimated a maximum residue level of 0.15 mg/kg and an STMR of 0.02 mg/kg for the subgroup dry beans (except soya bean (dry)).

*Peas (dry)*

In Canada and the USA, the critical GAP for flonicamid on peas is 100 g ai/ha with a maximum of 3 applications or 300 g ai/ha/season and a PHI of 7 days.

Five independent trials were conducted in the USA on peas during the 2012 growing season. All trials were conducted in accordance with the critical GAP. Residues were 0.073, 0.091, 0.16, 0.38 and 0.52 mg/kg.

The Meeting estimated a maximum residue level of 1 mg/kg and an STMR of 0.16 mg/kg for the subgroup dry peas.

***Residues in animal commodities***

Flonicamid residues in feed items derived from legume vegetables (dry bean seeds, dry field peas, cowpeas and lupins) did not add significantly to the dietary burden. Therefore, there is no impact on the previous recommendations for maximum residue levels for animal commodities made by the 2016 Meeting of the JMPR.

## RECOMMENDATIONS

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

## DIETARY RISK ASSESSMENT

### *Long-term dietary exposure*

The International Estimated Dietary Intakes (IEDIs) of flonicamid were calculated for the 17

GEMS/Food cluster diets using STMRs estimated by the current Meeting (Annex 3 to the 2017 Report). The ADI is 0–0.07 mg/kg bw and the calculated IEDIs were 0–10% of the maximum ADI. The Meeting concluded that the long-term dietary exposure to residues of flonicamid resulting from the uses considered by the JMPR is unlikely to present a public health concern.

### *Short-term dietary exposure*

The 2015 JMPR decided that an ARfD for flonicamid was unnecessary. The Meeting therefore concluded that the short-term dietary exposure to residues of flonicamid resulting from uses that have been considered by the current Meeting is unlikely to present a public health concern.

