BUPROFEZIN (173)

First draft prepared by Dr Yukiko Yamada, Ministry of Agriculture, Forestry and Fisheries, Tokyo, Japan

APPRAISAL

Buprofezin was evaluated by JMPR in 1991 for the first time and then in 1995 and 1999. It was also reviewed under the Periodic Re-evaluation Programme in 2008 for toxicity and residues followed by residue evaluations in 2009 and 2012; and for consideration of a concern form from the USA in 2013[1].

The 2012 Meeting received information on supervised trials on coffee conducted in Brazil and the USA as well as coffee processing. These trials were conducted in accordance with GAP in the USA for coffee while employed different processing methods for producing green beans from coffee berries: wet method in Hawaii, USA; and dry method in Brazil. Due to the apparent difference in residues from different processing methods and the lack of information on processing practices for coffee berries used in the USA, the 2013 Meeting could not estimate a maximum residue level.

The current Meeting received another concern form from the USA stating that since the processing of coffee berries to green coffee followed the local practices of countries where the trials were conducted, a maximum residue levels should be estimated for coffee beans and roasted coffee beans.

During the current Meeting, new information became available about the processing practices in Hawaii, USA. According to the information, both the wet and dry methods are used for processing coffee berries to green beans. At the present time, mostly the wet method is used while the dry method is used in the small farms and some recently established large coffee farms. Based on the information, the Meeting concluded that the trials in the USA and Brazil complied with GAP in the use of pesticides for coffee and the processing practices used in the USA.

The Meeting reviewed the data provided to the 2012 Meeting. GAP in the USA for coffee allows four foliar applications (minimum interval of 14 days) at a rate of 1.12 kg ai/hL with a PHI of 0 days. The previous Meeting selected the following residue concentrations from the trials matching the above GAP:

From the trials in the USA (4): 0.08, 0.12, 0.155 and 0.24 mg/kg; and

From the trials in Brazil (3): 0.055 and 0.075 (2) mg/kg.

The combined residues were: 0.055, 0.075, 0.075, 0.08, 0.12, 0.155 and 0.24 mg/kg.

The Meeting estimated a maximum residue level and an STMR of 0.4 mg/kg and 0.08 mg/kg, respectively, for coffee beans.

Based on the STMR for coffee beans and the processing factor of 0.32 from coffee beans to roasted coffee beans and < 0.2 to freeze-dried coffee calculated in 2012 (2012 Evaluation), the Meeting estimated STMR-Ps of 0.0256 mg/kg and 0.016 mg/kg, respectively, for roasted coffee beans and freeze-dried coffee.

RECOMMENDATIONS

On the basis of the data from supervised trials, the Meeting concluded that the residue levels listed below are suitable for establishing maximum residue limits and for IEDI and IESTI assessment.

Definition of the residue for compliance with MRLs and for estimation of dietary intake (Plant commodities and animal commodities): *buprofezin*

---

[1] 2012 Report and Evaluation; and 2013 Report (FAO)

Commodity		Recommended MRL, mg/kg		STMR/STMR-P mg/kg	HR/HR-P mg/kg
CCN	Name	New	Previous		
SB 0716	Coffee beans	0.4	-	0.08	-
SM 0716	Coffee beans, roasted			0.0256	-
	Freeze-dried coffee			0.016	-

DIETARY RISK ASSESSMENT

Long-term intake

The International Estimated Dietary Intakes (IEDIs) of buprofezin were calculated for the 17 GEMS/Food cluster diets using STMRs and STMRPs estimated by the 2008, 2009, 2012 and current Meetings (Annex 3). The ADI is 0-0.009 mg/kg bw and the calculated IEDIs were 3–40% of the maximum ADI. The Meeting concluded that the long-term intake of residues of buprofezin resulting from the uses considered by the 2008, 2009, 2012 and current JMPR is unlikely to present a public health concern.

Short-term intake

The International Estimated Short-Term Intakes (IESTI) of buprofezin were calculated for coffee beans and their processed products commodities using STMRs/STMR-Ps estimated by the current Meeting (see Annex 4). The ARfD is 0.5 mg/kg and the calculated IESTIs were 0–0 % of the ARfD for the general population and for children. The Meeting concluded that the short-term intake of residues of buprofezin, when used in ways that have been considered by the JMPR, is unlikely to present a public health concern.