

## 5.9 CYPROCONAZOLE (239)

### RESIDUE AND ANALYTICAL ASPECTS

Cyproconazole was first evaluated by the 2010 JMPR (T, R), when an ADI of 0–0.02 mg/kg bw and an ARfD of 0.06 mg/kg bw were set, and maximum residue levels were recommended for a variety of crops. Cyproconazole was scheduled at the Forty-fourth Session of the CCPR (2012) for the evaluation of residues in coffee by the 2013 JMPR. The residue definition for cyproconazole in commodities of plant and animal origin is the parent compound.

#### *Methods of analysis*

Two methods for the analysis of cyproconazole in coffee beans or roasted coffee were submitted. Residues can be extracted with acetone:water (95:5), the extract cleaned by gel permeation chromatography and the analyte analysed by LC/MS/MS (m/z 292.2 and 70.1), or extracted with methanol and analysed by LC/MS/MS after centrifugation. In both cases, satisfactory recoveries were obtained at 0.01 mg/kg (LOQ). No study was submitted to evaluate the stability of the residues in coffee samples. Studies evaluated by the 2010 JMPR on various fruits, peanuts and wheat had shown that cyproconazole residues are stable for at least 39 months under frozen conditions. The Meeting agreed that this conclusion could be extended to coffee.

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

Cyproconazole is registered in various central and South American countries. The critical GAP is found in Colombia,  $3 \times 0.06$  kg ai/ha and 15 days PHI. A total of nine supervised residue trials were conducted on coffee from 2010 to 2012 in the region.

In two trials conducted in Brazil according to Colombian GAP, residues were 0.02 and 0.03 mg/kg. In two trials conducted in Colombia and one in Guatemala according to Colombian GAP, residues were 0.03 (2) and 0.04 mg/kg. Two declining studies conducted in Colombia according to GAP showed that residues at 10 and 14 days DAT are the same, and can be considered at GAP. Residues are 0.02 and 0.03 mg/kg.

In two other Brazilian trials, a soil drench application was applied in addition to a foliar application at 0.5 kg ai/ha, giving residues of 0.03 and 0.04 mg/kg at 23–37 DAT. Although these trials are not conducted according to GAP, they can be used as supporting information.

The Meeting agreed to combined the residues from trials conducted according to Colombian GAP (n=7) as 0.02 (2), 0.03 (4) and 0.04 mg/kg.

The Meeting estimates a maximum residue level of 0.07 mg/kg, and a STMR of 0.03 mg/kg for cyproconazole in coffee beans.

#### *Fate of residues in processing*

In one study conducted in Guatemala, green coffee beans containing 0.094 mg/kg cyproconazole were processed to roasted beans and instant coffee. Residues were 0.119 mg/kg in roasted beans and 0.151 mg/kg in instant coffee, resulting in processing factors of 1.3 and 1.6, respectively.

Based on these processing factors, the Meeting recommends a maximum residue level of 0.1 mg/kg and a STMR of 0.039 mg/kg for cyproconazole in roasted coffee beans, and a STMR of 0.048 mg/kg for cyproconazole in instant coffee.

## RECOMMENDATIONS

Definition of the residue for compliance with maximum residue levels and estimation of dietary intake in plant commodities: *cyproconazole*.

## DIETARY RISK ASSESSMENT

### *Long-term intake*

The International Estimated Daily Intakes (IEDIs) of cyproconazole calculated for the 13 GEMS/Food Consumption Cluster Diets using STMRs and STMR-Ps estimated by the 2010 Meeting ranged from 0.5 to 2% of the maximum ADI. The impact of coffee on the IEDI is unlikely to affect the previous conclusion that the long-term intake of residues of cyproconazole resulting from the uses considered by the current JMPR is unlikely to present a public health concern.

### *Short-term intake*

The International Estimated Short-Term Intakes (IESTI) of cyproconazole was calculated for coffee using STMR-P estimated by the current Meeting (Annex 4). The ARfD is 0.06 mg/kg and the calculated IESTI was 0% of the ARfD. The Meeting concluded that the short-term intake of residues of cyproconazole, when used in ways that have been considered by the JMPR, is unlikely to present a public health concern.