5.10 CYROMAZINE (169)

RESIDUE AND ANALYTICAL ASPECTS

Cyromazine was first evaluated by JMPR in 1990 and subsequently in 1991 and 1992 for residues and in 2006 for toxicity when an ADI of 0–0.06 mg/kg bw and an ARfD of 0.1 mg/kg bw were established. It was again evaluated by JMPR in 2007 under the periodic review programme. The 2007 JMPR recommended cyromazine as the residue definition for plant and animal commodities both for compliance with the MRL and for estimation of dietary intake.

At its Forty-third Session, the CCPR included cyromazine in the Priority List to be evaluated by the current Meeting for additional maximum residue levels.

The current Meeting received information on methods of analysis, storage stability and supervised trials to support additional maximum residue levels for cyromazine. The current Meeting also received a request to consider extending the Codex MRL for beans (dry) to chick pea and lentil.

Methods of analysis

The Meeting received information on the analytical methods used in the supervised residue trials submitted to the current Meeting. These methods used were either GC/NPD, HPLC/MS or HPLC/MS/MS. They were validated successfully for determining cyromazine in snap bean (pods and immature seeds), French bean and lima bean with mean recoveries in the acceptable range of 70–110% with RDSs less than 20%.

Stability of pesticide residues in stored analytical samples

The 2007 JMPR concluded that cyromazine at the fortification level of 1 mg/kg was stable in haricot beans for at least two years when stored at ≤ -18 °C. Samples from the US supervised trials were stored frozen no longer than one year and French bean samples from the supervised trials in Senegal and Kenya were stored no longer than four months.

Results of supervised residue trials on crops

The Meeting received information on supervised on supervised trials of cyromazine on common bean (pods and/or immature seeds), lima bean (immature seeds) and beans (dry).

The OECD MRL calculator was used as a tool to assist in the estimation of maximum residue levels from the selected residue data set obtained from the supervised residue trials. As a first step, the Meeting reviewed trial conditions and other relevant factors related to each data set to arrive at a best estimate of the maximum residue level using expert judgement. Then, the OECD calculator was employed. If the statistical calculation spreadsheet suggested a different value, a brief explanation of the derivation was supplied.

Legume vegetables

Common bean (pods and/or immature seeds)

The Meeting received information on supervised residue trials conducted in the USA, Senegal and Kenya.

Trials were conducted on common bean (snap bean) in four locations in the USA. However, the dates of last application and harvest were either the same or only slightly different at the same locations, and as the variability between varieties is not considered significant for snap beans, the Meeting considered that there were only four valid trials in accordance with US GAP (6 applications at 140 g ai/ha, PHI 7 days). Residues of cyromazine in snap beans (pods and seeds) from these trials were: 0.80, 1.2, 1.3 and 1.3 mg/kg.

A total of three trials were conducted in Senegal (1) and Kenya (3) on common bean (French bean). Residues from the trials according to GAP in Kenya (maximum of three applications with 10-14 day interval, maximum rate of 225 g ai/ha for 200-800 L/ha, a PHI of 14 days) in ranked order, were: 0.24, 0.28 and 0.56 mg/kg.

As the GAP in the USA and that in Kenya are significantly different from each other, the Meeting concluded that data available were insufficient to estimate a maximum residue level for common beans.

Lima bean

Another three trials were reported for lima beans from the USA. Residues of cyromazine in lima bean (immature beans) from trials according to US GAP were: < 0.05, 0.11 and 0.24 mg/kg.

The 2004 JMPR estimated a maximum residue level of 1 mg/kg, STMR of 0.23 mg/kg and HR of 0.58 mg/kg for lima beans (young pods and/or immature beans) based on the six trials from the USA on lima beans in pods. The current Meeting considered that the previous recommendation for lima beans (young pods and/or immature beans) was sufficiently high to cover lima bean immature beans.

Pulses

The Meeting received information on nine trials from a number of states in the USA conducted in 1998 on various kinds of dry beans. Eight of these trials had been provided to the 2004 JMPR which estimated, on the basis of these eight trials and one additional trial in the USA, a maximum residue level of 3 mg/kg for beans (dry), which were adopted as Codex MRL. An STMR of 1.0 mg/kg was also estimated.

Trials were conducted in the USA in 1998 on black-eyed pea (cow pea), pinto bean, navy bean, kidney bean and great northern bean with comparable residue results and US GAP is for all "*dried varieties of beans except cow peas and soya beans*". The current Meeting therefore concluded that it was appropriate to extend the previous recommendation for beans (dry) to chick-pea (dry), lentil (dry) and lupin (dry).

DIETARY RISK ASSESSMENT

Long-term intake

The International Estimated Daily Intakes (IEDIs) of cyromazine were calculated for the 13 GEMS/Food cluster diets using STMRs estimated by the current Meeting (Annex 3). The ADI is 0–0.06 mg/kg bw and the calculated IEDIs were 0-4 % of the maximum ADI. The Meeting concluded that the long-term intake of residues of cyromazine resulting from the uses considered by the 2007 and current JMPR is unlikely to present a public health concern.

Short-term intake

The International Estimated Short-Term Intakes (IESTI) of cyromazine were calculated for food commodities and their processed commodities using HRs/HR-Ps or STMRs/STMR-Ps estimated by the current Meeting (see Annex 4). The ARfD is 0.1 mg/kg and the calculated IESTIs were 3–20 % of the ARfD. The Meeting concluded that the short-term intake of residues of cyromazine, when used in ways that have been considered by the JMPR, is unlikely to present a public health concern.