5.21 IMAZAPYR (267)

RESIDUE AND ANALYTICAL ASPECTS

Imazapyr is a broad-spectrum herbicide belonging to the imidazolinone family. It was first evaluated by JMPR in 2013 (T, R). An ADI of 0–3 mg/kg bw was established and an ARfD was unnecessary. The compound was evaluated for residues in 2015. In 2013 the Meeting agreed that the definition of the residue was imazapyr for plant and animal commodities (for compliance with MRLs and for estimation of dietary intake). It was listed by the 48th Session of CCPR (2016) for the evaluation of 2017 JMPR for additional MRLs.

The current Meeting received information on analytical method, use patterns and supervised residue trials to support estimation of a maximum residue level for barley.

Method of analysis

The Meeting received information on the analytical method (Method M3098) for the determination of related compounds, imazamox and its metabolite, in wheat forage, hay, straw and grain. This method was evaluated by the 2014 JMPR and modified to allow simultaneous analysis of imazapyr and imazamox residues. The method is suitable for the analysis of imazapyr residues in barley forage, straw and grain.

Stability of residues in stored analytical samples

Freezer storage stability studies on maize (grain, forage and fodder) samples were evaluated by the 2013 JMPR. Storage stability results indicated that imazapyr residues were stable at -5 to -26 °C for at least 27 months in maize (grain, forage and fodder). The periods of storage stability studies cover the sample storage intervals of residue trials.

Residues resulting from supervised residue trials on crops

The Meeting received supervised trial data for the foliar application of imazapyr on barley (imidazolinone-tolerant) from Australia.

Barley

The supervised trials were conducted on imidazolinone-tolerant barley in Australia.

The GAP on imidazolinone-tolerant barley in Australia is a foliar application at a maximum rate of 0.011 kg ai/ha from the 5 leaf stage to the 1st node stage.

Imazapyr residues in barley grains from independent trials in Australia matching GAP were (n=6): < 0.01 (2), 0.16, 0.19, 0.25 and 0.32 mg/kg.

Based on the residues for barley grains from trials in Australia, the Meeting estimated a maximum residue level and an STMR value for imazapyr in barley of 0.7 and 0.175 mg/kg respectively.

Animal feedstuffs

Barley forage and straw

Data were available from supervised trials on imidazolinone-tolerant barley in Australia.

The GAP on imidazolinone-tolerant barley in Australia is a foliar application at a maximum rate of 0.011 kg ai/ha from the 5 leaf stage to the 1st node stage and not to graze or cut for forage and fodder for 4 weeks after application.

Imazapyr residues in barley forage (as received) from independent trials in Australia matching GAP were (n=6): 0.02, 0.04, 0.051, 0.087, 0.094 and 0.099 mg/kg.

Based on the residues for barley forage, the Meeting estimated a median residue value and a highest residue value for imazapyr in barley forage of 0.069 and 0.099 mg/kg, respectively on an "as received" basis.

Imazapyr residues in barley straw (dry weight basis) from independent trials in Australia matching GAP were (n=6): < 0.01 (2) and < 0.05 (4) mg/kg.

Based on the residues in barley straw, the Meeting estimated a maximum residue level of 0.05 mg/kg, a median residue value of 0.05 mg/kg and a highest residue value of 0.05 mg/kg for imazapyr in barley straw on a dry weight basis.

Residue in animal commodities

The 2017 JMPR evaluated residues of imazapyr in barley, which is listed in the OECD feeding table. The Meeting noted that the estimation did not result in a significant change of the dietary burdens of farm animals (18 to 18 ppm for cattle and 0.68 to 0.57 ppm for poultry). The previous recommendations of maximum residue level for animal commodities were maintained.

RECOMMENDATIONS

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

Definition of the residue (for compliance with the MRL and for estimation of dietary intake) for plant and animal commodities: *Imazapyr*

The residue is not fat soluble

DIETARY RISK ASSESSMENT

Long-term dietary exposure

The International Estimated Daily Intakes (IEDIs) of imazapyr were calculated for the 17 GEMS/Food cluster diets using STMRs/STMR-Ps estimated by the 2013, 2015 and the current Meeting (Annex 3). The ADI is 0–3 mg/kg bw and the calculated IEDIs were 0% of the maximum ADI (3 mg/kg bw). The Meeting concluded that the long-term dietary exposure to residues of imazapyr, resulting from the uses considered by the JMPR, is unlikely to present a public health concern.

Short-term dietary exposure

The 2013 JMPR decided that an ARfD was unnecessary. The Meeting therefore concluded that the short-term dietary exposure to residues of imazapyr is unlikely to present a public health concern.