

5.3 BOSCALID (221)

RESIDUE AND ANALYTICAL ASPECTS

Boscalid was first evaluated by the 2006 JMPR which established an ADI of 0-0.04 mg/kg bw and proposed maximum residue levels for a number of commodities.

Results of additional supervised trials on banana, kiwi and hops were evaluated by the present Meeting.

Results of supervised residue trials on crops

New registrations have been obtained for banana, kiwi and hops. Trials conducted complying with the registered uses were evaluated and the relevant residues considered for the estimation of maximum residue level and STMR values.

Banana

The 2006 JMPR evaluated and reported the results of 12 trials on banana, were performed in accordance with the recently registered uses in Colombia and Ecuador (0.15 kg as/ha, 0 day PHI). The banana whole fruit samples which were bagged and all pulp samples both bagged and unbagged did not contain any boscalid residue above the limit of quantification of 0.05 mg/kg.

In the 2006/07 growing season, a bridging study with six trials was conducted, according to the GAP in Costa Rica and Colombia, comparing a WG formulation (BAS 510 01 F) with a SC formulation (BAS 510 05 F). Immediately after and one following the last application, fruit from both bagged and unbagged treatments were sampled. Banana whole fruit, pulp and peel samples were then analysed.

The results show that of all bagged samples only two whole fruit samples contained detectable boscalid residues at 0.06 and 0.07 mg/kg. These values were selected for the estimation of a maximum residue level as they were higher than the residues in unbagged bananas. The residue in/on peel confirmed there was no difference between residues derived from the WG and SC formulations.

As the magnitude of residues was similar on day 0 and day 1, regardless of which formulation was used (the WG or SC), the highest residue was selected from each trial carried out at one site. The residues found in rank order were: < 0.05, < 0.05, 0.05, 0.06, 0.07, 0.08, 0.08, 0.09, 0.12, 0.18, 0.19 and 0.42 mg/kg.

The residues from the trials in 2004 were: < 0.05 (4), 0.05, 0.07, 0.07, 0.09, 0.10, 0.10, 0.11, and 0.18 mg/kg.

The two data sets are not statistically different and can be combined for the estimation of a maximum residue level. The combined data (24) in rank order were: < 0.05 (6), 0.05 (2), 0.06, 0.07 (3), 0.08 (2), 0.09 (2), 0.10 (2), 0.11, 0.12, 0.18 (2), 0.19 and 0.42 mg/kg.

Banana pulp contained residues below the LOQ of 0.05 mg/kg in all but one of 18 trials, where the residue was found to be 0.08 mg/kg.

Based on the residue data available, the Meeting confirmed its previous recommendation for an STMR value of 0.05 mg/kg for banana pulp, withdrew its previous recommendation for a maximum residue level of 0.2 mg/kg and proposed a value of 0.6 mg/kg for bagged and unbagged bananas.

Kiwi fruits

In kiwifruit, boscalid is used as a post-harvest treatment applied as a dip treatment at a rate of 0.0375 kg ai/hL. Four Italian trials were conducted according to GAP.

Kiwi fruits were sampled directly after the application and again at about 60 days thereafter. Kiwi whole fruit, as well as peel and pulp were analysed. The average of the procedural recoveries for boscalid was between 101 and 106%.

The residues in whole fruits 59–60 days after the post-harvest treatment were 0.80, 1.16, 1.32, and 2.38 mg/kg.

The pulp contained residues of 0.055, 0.063, 0.083 and 0.142 mg/kg.

The Meeting took into account that post harvest treatment normally produces more uniform residue distributions than foliar applications, and estimated a maximum residue level of 5 mg/kg and an STMR of 0.073 mg/kg for kiwi fruits.

Hops

Boscalid is approved for use on hops in the USA (US GAP: maximum of 3 applications per season at 0.5 kg/ha with a total maximum seasonal application rate of 1482 g ai/ha and a PHI of 14 days).

Three trials were conducted in the USA according to the registered use pattern. The cones were dried and analysed with a method providing 98% recovery and an LOQ of 0.05 mg/kg.

In addition eight trials were carried out in Germany corresponding to the target rate specified in a pending registration (three foliar applications of maximum 504 g ai/ha each with a maximum seasonal application rate of 1512 g ai/ha and a PHI of 21 days). These results were reported by the 2006 JMPR. As the product is not registered in Germany or other countries with comparable growing practice, those results could not be used for estimation of maximum residue levels.

The US trials were conducted with application volumes of 750 and 1420 L/ha. The treatments with the lower spray volume resulted in higher residues, and therefore were considered. The residues determined at 14 day PHI in the two trials were: 29.4 and 31.1 mg/kg.

The Meeting concluded that two trials were insufficient for the estimation of a maximum residue level.

DIETARY RISK ASSESSMENT*Long-term intake*

The 2006 JMPR could not recommend STMR values for a large number of follow crops in which residue may be present above the LOQ, the Meeting decided that the estimation of the long-term intake would not be realistic.

Therefore no long-term intake calculations could be carried out by this Meeting.