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Determination of kinetics and pre-harvest residue limit of pyriofenone in oriental melon (*Cucumis melo* var. *makuwa*) grown under regulated climatic conditions

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A high-performance liquid chromatography-ultraviolet detection was used to estimate the disappearance rates as well as the pre-harvest residue limits (PHRLs) of pyriofenone in oriental melon (*Cucumis melo* var. *makuwa*) grown under greenhouse conditions at two different locations (A and B) in Seongju, Republic of Korea. The identity of the compound in standard solution and representative field incurred samples was confirmed using liquid chromatography-tandem mass spectrometry (LC-MS/MS). The method was validated in terms of linearity, limits of detection and quantification, accuracy (expressed as recovery %), and precision (expressed as relative standard deviation %) for accurate and precise quantitation. Notably, the residual levels of field incurred samples collected over 0 day through 10 days post-application were below the maximum residue level (MRL=0.2 mg/kg) established by the Korean Ministry of Food and Drug Safety. Site A showed lower residue levels and a higher decline rate than site B, which might be attributed to seasonal variation (high temperature) and increased metabolic and enzyme profiling in the mature fruits. The half-lives were similar, 4.9 and 4.3 days, at sites and B, respectively. Using the pre-harvest residue limit, we predicted the residue amounts at ten and five days before harvest, which resulted in concentrations lower than the provisional MRL at harvest time.





Biography

Hyung Suk Chung is pursuing her Master degree at Chonnam National University, Republic of Korea. He is interested in Food Safety from harmful materials such as pesticides and veterinary antibiotics. He participated in many projects that developed the analytical method for determining pesticides and veterinary antibiotics in several environmental factors such as crops, water, and monitoring.

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