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Applicability of ELISA in pesticide monitoring to control runoff of bensulfuron-methyl and simetryn from paddy fields

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Abstract:

The applicability of ELISA kits was evaluated as an alternative to monitor bensulfuron-methyl and simetryn behavior in paddy water under intermittent (Plot 1) and continuous (Plot 2) irrigation schemes. Simetryn concentrations in both plots decreased exponentially from the peak of the first day. However, the simetryn kit systematically underestimated by a factor of 0.79 as compared to the GC method. Bensulfuron-methyl concentrations exhibited similar dissipation kinetics in paddy water and the drainage water. The bensulfuron-methyl kit was capable of distinguishing spatial variations of concentrations in the paddy field. The ELISA kits clearly indicated differences in the loss of both herbicides between the two plots and therefore may be useful for evaluating the water management practice of pesticide runoff control in paddy fields. © Pesticide Science Society of Japan

Keywords:

ELISA, paddy field, bensulfuron-methyl, simetryn, runoff

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