

PERSISTANCE OF CYPERMETHRIN RESIDUE IN INDOOR ENVIRONMENT

**LIA EMI NAKAGAWA, EMERSON SANCHES NARCISO,
MARCOS ROBERTO POTENZA, AND ALAN ROBERTO COSTA**

Instituto Biológico, Av. Conselheiro Rodrigues Alves, 1252. São Paulo, SP, Brazil

Pesticides are applied in residences, schools, hospitals and other edifications to control urban pests as cockroaches, ants, fleas, flies and termites. The use of these products in indoor environment can result in exposure of children and pets to particles in the air or adhered to the floor, carpets and other surfaces. The insecticide cypermethrin is indicated to control flies, ants and mosquitoes and is authorized to be used as pesticide by pest control companies, in public health campaigns and for domestic use; has vapor pressure of $5,1 \times 10^{-7}$ nPa and oral LD₅₀ to rats of 41239mg/kg. In this study we evaluated if the cypermethrin is already found in the air and in the surfaces of an indoor environment 24 hours after its application. A commercial product of the insecticide cypermethrin formulated as emulsion concentrate and with 200g of active ingredient/L was sprayed on the floor of a glass chamber of 4,0m³. Soon after the application and after 24 hours, the insecticide was collected from the floor in aluminum sheets and from the air in polyurethane foams linked to a vacuum pump. The insecticide was extracted from the aluminum sheets and from the polyurethane foams with ethyl acetate in an ultrasound bath at 40kHz for 6 minutes. The analysis of the compound was made by a gas chromatography with electron capture detector, SE-30 column and nitrogen as carrier gas. Soon after the application, the cypermethrin was detected in the air in a concentration of 0,6mg/m³ and in the floor in a concentration of 69,8mg/m². After 24 hours, the insecticide was present in the air in a concentration of 0,5mg/m³ and was found in the floor in a concentration of 60,7mg/m². Then, 24 hours after its application, the cypermethrin was already detected in the glass chamber, mainly in the floor, and in concentrations similar to that detected soon after the application. So, in the conditions of this study, the pesticide cypermethrin remained in the indoor environment where it was applied, even after 24 hours.

Key Words Air, surfaces, persistence, urban pest