

180 - SURVEILLANCE HERBICIDES IN WATER OF IRRIGATED RICE FIELDS, CULTIVATED UNDER THE PRE-GERMINATED SYSTEM

KRUSE, N.D.* (UFMS); MACHADO, S.L.O. (UFMS); ZANELLA, R. (UFMS); MARCHEZAN, E. (UFMS); ÁVILA, L.A. (UFMS); PRIMEL, E.G. (UFMS); GONÇALVES, F.F. (UFMS); VILLA, S.C.C. (UFMS)

In Rio Grande do Sul State (Brazil), irrigated rice is considered as a potential surface water contaminant; however no real proofs are presented in this regard. During the 2000/01, 2001/02 and 2002/03 growing seasons a study was conducted aiming to assess the water in pre-germinated rice fields. On 16 m² plots were applied the herbicides (in g ha⁻¹): bentazon (960), clomazone (500 and 700), propanil (3600), quinclorac (375 and 750) and 2-4 D (200). Samples were collected before, and on the 1th, 2th, 3th, 5th, 7th, 10th, 14th, 21st, 28th, 35th and 60th day after herbicide application. For the determination of herbicides in the water, 250 mL of water was pre-concentrated in a cartridge of solid phase extraction (SPE) containing 200 mg of resin C18. The elution was made with 2 x 0.5 mL of methanol and analyzed by HPLC-UV, using methanol and water as mobile phase and C18 column. The results showed that herbicides concentration decreased with time of sampling and herbicides. At the end of the first week, the concentration of herbicides in the water was above the generally adopted as tolerable limits (1 to 3 g L⁻¹), except for the propanil (3600 g i.a. ha⁻¹) and metsulfuron-methyl (2 g i.a. ha⁻¹). Starting from 14th day, in general, the residues of the herbicides were below 3 g L⁻¹. Clomazone residues were detected up to 28 days. The results suggests that retaining water inside the fields for propanil (3600 g i.a. ha⁻¹) and metsulfuron-methyl (2 g i.a. ha⁻¹) for seven days, quinclorac (350 and 750 g i.a. ha⁻¹) and 2,4-D (200 g i.a. ha⁻¹) for at least 14 days, bentazon (960 g i.a. ha⁻¹) for 21 days and clomazone (500 and 700 g i.a. ha⁻¹) for 28 days after application.