

TH-74

**OCCURRENCE OF PESTICIDES IN THE CANAL WATER OF IRRIGATED FARMLANDS IN
PETROLINA, PERNAMBUCO, BRAZIL**L.C. Boareto¹, E. C. Júnior², P. T. S. Silva³¹*Instituto Federal de Educação, Ciência e Tecnologia do Sertão Pernambucano – IF Sertão, Petrolina,
Brazil*³*Embrapa Semiárido, Petrolina, Brazil*paula.silva@embrapa.br

The occurrence of pesticides in aquatic systems is a cause of considerable concern due to the adverse effects on the environment and human health. Factors such as the lixiviation, surface runoff and drift of these compounds are the main forms of contamination in bodies of water. The aim of the present study was to investigate the occurrence of pesticides in the canal water of the Senador Nilo Coelho Irrigated Farmlands in the city of **Petrolina**, state of Pernambuco, **Brasil**. The water in this area is conducted through open channels that have multiple uses and serve as the water supply for the local population. Collections were performed at **12 points along** approximately 60 Km of the length of the canal in the dry and rainy seasons over a two-year **period, totaling 48 samples**. The investigation of 238 pesticides in the canal water consisted of **solid-phase extraction** with C18 disks combined with the LC-MS/MS, a method adopted by the United States Environmental Protection Agency, with modifications **to** the procedure by the laboratory (Adson et al., 2016).¹ For this method, the detection limit was 0.008 µg l⁻¹ and the quantification limit was 0.01 µg l⁻¹. The analysis of the results revealed the presence of the pesticides atrazine (0.01 µg l⁻¹), boscalid (0.02 µg l⁻¹), chlorfluazuron (0.02 µg l⁻¹), **difenoconazole** (0.02 µg l⁻¹), etofenprox (0.1 µg l⁻¹) and **fipronil** (0.017 µg l⁻¹) in the dry season at three points along the irrigation canal. No pesticides were detected at any of the collection points in the rainy **season**. This difference may be explained by the fact that the rainy season is a between-crop period, in which the use of these compounds is less intensive, as well as the dilution of the concentrations due to rainfall. In the present study, the concentrations of pesticides were low and do not pose an immediate risk to the environment or human health. However, continual **monitoring** should be performed to evaluate the occurrence of changes in the water quality of this canal.

Acknowledgments: Chesf and FACEPE**References**

[1] A. Ferreira, H. Silva, H. Rodrigues, M. Silva, E. Júnior, Rev. bras. eng. agríc. ambient. 20 (2016) 1124-1128.