

## Ametryn removal with nanofiltration membranes

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Received 12 December 2009; Accepted in revised form 18 November 2010

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### ABSTRACT

The wide use of herbicides is indispensable in the agriculture sector to control crop losses, at the same time it causes some environmental problem, i.e. pollution of water sources. A study on the application of nanofiltration membrane in the removal of one kind of herbicide, ametryn, in aqueous solution was carried out in order to evaluate the performances of membrane separation. Ametryn was spiked to the different water matrices feed to a cross-flow nanofiltration pilot-plant. The rejection of ametryn was improved with the presents of both inorganic and organic mater in synthetic water compared with spiked in reference distilled water. The rejection of ametryn was higher in tap water than in distilled water, whereas, the water flux was lower. This may be due to that the NOM in tap water enhanced the size exclusion and charge repulsion of NOM-ametryn complex; meanwhile, both the NOM and NOM-ametryn complex fouled the membranes in tap water.

*Keywords:* Water treatment; Nanofiltration; Herbicide; Ametryn

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