

# Field Calibration and Verification of a Pathogen Transport Model

Outbreaks of cryptosporidiosis throughout the world, especially the massive outbreak in Milwaukee in 1993 drew public attention to the quality of drinking water supplies and to the efficiency of water treatment methods.

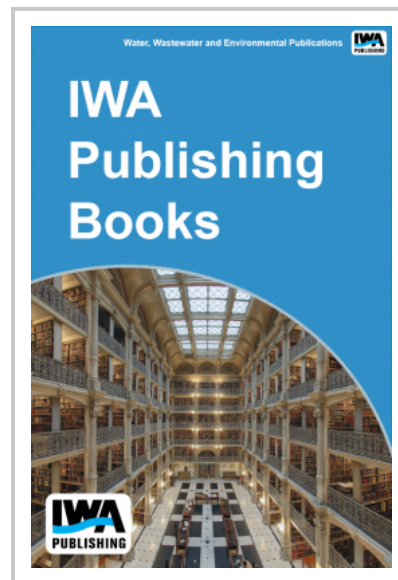
Cryptosporidiosis is a severe gastrointestinal disease caused by the transmissible form of *Cryptosporidium parvum* protozoan and its oocysts.

Digestion of as few as 30 oocysts may be fatal to infants, elderly and immunocompromized persons. *C. parvum* oocysts are ubiquitous in untreated water and extremely resistant to harsh environmental conditions including standard water treatment procedures.

We have developed an integrated modeling strategy to quantify the risk of surface drinking water contamination by water borne pathogens, in particular the oocysts of *C. parvum*, from agricultural non-point pollution sources. This project is comprised of both a modeling and an experimental effort.

The main experimental effort focused on the measurement of *C. parvum* oocysts partitioning in the soil/water systems with the objective of parameterizing the transport model.

The pathogen transport model is based on the behavior of a single microorganism and inherently predicts the random variability of pathogen transport.



**Publication Date:** 31/08/2004

**ISBN13:** 9781843397113

**eISBN:** 9781780404271

**Pages:** 52

**Print:**

**Standard price:** £94 / €118 / \$141

**Member price:** £71 / €88 / \$106

**eBook:**

**Standard price:** £94 / €38 / \$50

**Member price:** £71 / €29 / \$38