Environmental Pathogens Information Network

PURDUE UNIVERSITY

What is EPI-Net?

- EPI-Net.org provides:
  - Centralized resource of water related environmental microbiological contamination information
  - Information sharing
  - Connections among a network of stakeholders, regulatory officials and technical experts.

What is EPI-Net?

- EPI-Net.org provides:
  - It provides a reliable point of references (methods and data interpretation) and increases our ability to develop a coherent national research agenda and good public policy.

Mission

- Provide the scientific and user communities with a centralized source of information about environmental pathogens.
- Help the general public understand the science behind the development, use, and possible environmental consequences of pathogenic bacteria in the environment.

EPI-Net's Goal

- The overall goal of EPI-Net is to develop and transfer the fullest possible understanding of how microbial pathogens enter into and then function in water, soil and watersheds so that we can properly manage and prevent the spread of microorganisms and the diseases they cause.

EPI-Net Objective
Advisory Groups

- Develop a nationally representative science board:
  - government,
  - academia,
  - private sector research organizations
- Stakeholder group:
  - national farm, commodity,
  - land-use groups and county
  - state government organizations

EPI-Net Objective
Products

- Actively mine the wealth of existing environmental microbiology data and information available from both the refereed literature and state and federal sources.
- Create on-line information repositories and facilitate data sharing to produce a level of common knowledge to improve discussions.
- Workshops and other events

EPI-Net Website

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Introduction

The challenges associated with managing microbial contamination of water resources and the roles that science plays in addressing those challenges are at the forefront of water policy discussions across the country. In a recent review of the literature Smith and Perdek, (2004) concluded " a significant body of research is needed to understand the uncertainties in pathogenic [microorganism] processes at the watershed scale... ". This recent study illustrates the knowledge gaps and evolving nature of our understanding of microbial contamination of surface water.

What is EPI-NET?

The Environmental Pathogens Information Network (EPI-NET) is a keystone organization that provides a stable, centralized resource of water related environmental microbiological

Pathogens

This is a rendering of the bacteria Strep Faecalis.

EPI-NET Perspective

Volume 1

Issue 1

“Detecting Microbial Contamination in Water and Soil”

- Our water bodies do not meet biocriteria water quality standards.
- Identification of biological contamination sources has become a major area of investigation.
- Many methods have been developed, but none has been approved for regulatory work.

Symposium Objective

- Provide fundamental understanding of the principles and applications of modern approaches to Microbial Source Tracking as well as to evaluate how current methodologies are applied to watershed applications

Today's Topics

- An introduction to indicators and pathogens in the environment
- Microbial Source Tracking (MST): What is it and how it aids with pathogen detection
- Library dependent and independent methods
- MST: conclusions and applications

"Detecting Microbial Contamination in Water and Soil"

1:00	Introduction to EPI-Net *Dr. Ron Turco*
1:10	Pathogens in the Environment *Dr. Ron Turco*
1:25	Fecal source tracking: past, present, and future *Dr. Jorge Santodomingo*
2:15	Validation of Performance in Library-Dependent Microbial Source Tracking Studies *Dr. Valerie J. Harwood*
3:05	Break
3:20	Small Successes: Library Independent Methods to Identify Microbial Pollution Sources *Dr. Von Sigler*
4:10	Watershed-based microbial source tracking case study: From implementation and solutions to research and method evaluation Dr. Nancy White