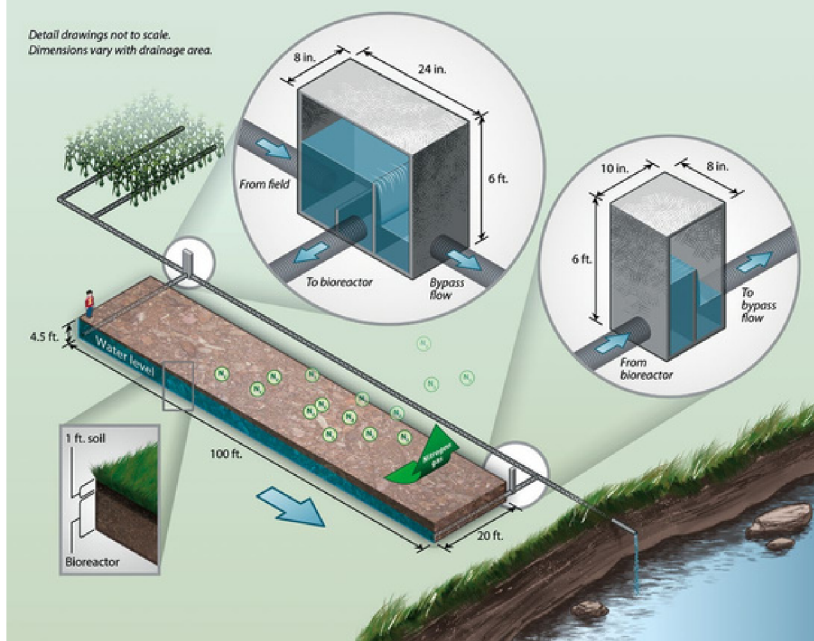


BIOREACTORS

Working with private landowners across Iowa, bioreactors are being installed as a water quality practice within priority watersheds.

THE BASICS

Drainage water is diverted through a buried trench filled with woodchips, called a bioreactor. Microorganisms living in the system use the woodchips as a carbon source to convert the nitrate in the drainage water to harmless nitrogen gas (denitrification).



Source: John Petersen, www.petersenart.com



Woodchips serve as a carbon source for denitrification.

THE BENEFITS

- Nitrate removed through denitrification
- Bioreactors placed both at edge-of-field, and in field depending on site conditions
- Does not impact current land management practices



END RESULT:
CLEANER WATER



RESEARCH

Research has been conducted on several sites across the state. Sites have been shown to remove up to 54% of the nitrate load, with an average of 40% removal.

- Performance varies based on size, location, and a variety of other factors
- Bioreactors have no adverse effects on crop production and do not restrict drainage



IOWA WATER QUALITY INITIATIVE SITES

The Department of Agriculture and Land Stewardship is currently increasing implementation of bioreactors across the state. For more information, contact your local NRCS office or contact Tanner Puls, Edge of Field Coordinator for the Department.

