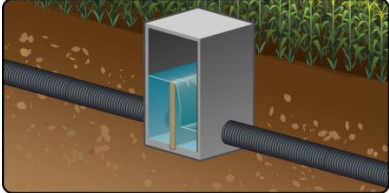
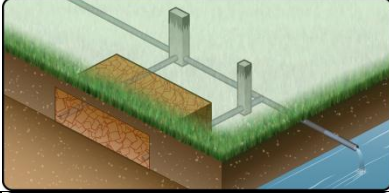

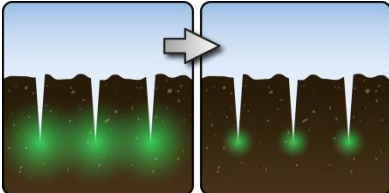
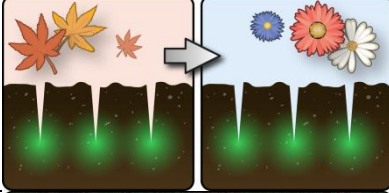

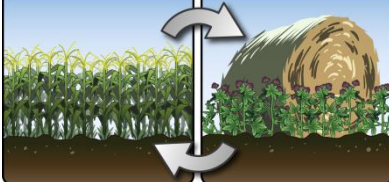


Cost Comparison of Practices that Reduce Nitrate in Drainage

In Iowa, tile drainage allows great gains in agricultural productivity, but there is also concern about nitrate loss from these systems. The water quality of our streams, rivers, and lakes can be negatively impacted by this nitrate in tile drainage. Fortunately, there are a number of practices that can be done to reduce the amount of nitrate in drainage water. This handout provides a cost comparison for several of these practices[†] with mention of a few other possible benefits to the environment.

Practice	\$ per Acre Treated per Year	\$ per lb Nitrate-Nitrogen Removed	Other Environmental Benefits
Controlled Drainage 	\$3.82 to \$15.91	\$0.26 to \$1.65	=
Woodchip Bioreactor 	\$6.67 to \$13.79	\$0.58 to \$1.48	=
Wetland 	\$12.45 to \$17.44	\$0.94 to \$1.69	↑ Wildlife habitat, Removal of other pollutants
Nitrogen Management: Lowering the Application Rate from 150 lb N per ac to 125 lb N per ac 	-\$2.99*	-\$0.74*	=
Nitrogen Management: Moving the Application from Fall to Spring 	-\$36.42*	-\$11.65* to \$0.83	=
Cover Crop: Cereal rye 	\$49.92 to \$72.82	\$2.26 to \$36.91	↑ Soil enhancement, Prevents erosion
Crop Rotation: Three years of alfalfa followed by two years of corn 	\$39.88 to \$72.47	\$2.79 to \$14.19	↑ Soil enhancement, Prevents erosion

[†] Information based on ISU Custom Rate Surveys and published literature; due to calculation procedures (see L. Christianson, 2011, PhD dissertation, Iowa State University), \$ per ac and \$ per lb N removed ranges are min/max and mean ± standard deviation, respectively

* Negative costs are benefits or revenues