

## **REDUCING BACTERIA WITH BEST MANAGEMENT PRACTICES FOR LIVESTOCK**

### **FILTER STRIPS** NRCS CODE 393

Jennifer L. Peterson, Extension Program Specialist, Texas AgriLife Extension Service  
Larry A. Redmon, Professor and State Forage Specialist, Texas AgriLife Extension Service  
Mark L. McFarland, Professor and State Soil Fertility Specialist, Texas AgriLife Extension Service

#### **Description:**

A strip or area of herbaceous vegetation established between cropland, grazing land, or disturbed land that removes contaminants from overland flow.

#### **Benefits to Producer:**

- Reduces stream bank destabilization and associated sedimentation.
- Maintains and improves surface and/or subsurface water quantity and quality.
- Reduces accelerated soil erosion and maintains or improves soil condition.
- Decreases runoff volume and velocity.
- Reduces concentrations of pollutants including sediment, nutrients, and bacteria.
- Provides and maintains food, cover, and shelter for wildlife.
- Increased infiltration and groundwater recharge.
- Enhances aesthetic value of the land.
- Reduces soil and water loss from land.



A grass filter strip functions as a conservation buffer along a small stream. Photo by Lynn Betts, NRCS.

#### **Bacterial Removal Efficiency:**

- Filter strips resulted in the following bacterial reductions based on scientific research:
  - *Cryptosporidium parvum*: 93 to 99%
  - *E. coli*: 58 to 99%
  - Fecal coliform: 30 to 100%
  - Fecal *enterococci*: 99.8%-99.97%
  - Fecal *streptococci*: 68 to 83%
  - *Giardia*: 26%
  - Total coliform: 67 to 99%

#### **Other Benefits:**

- Reduced overland flow, increased infiltration, reduced erosion and transport of soil and its constituents.
- Reduced runoff by 52% and soil loss by 53% under no-tilled conditions with use of filter strips.
- Increased sediment trapping efficiencies from 41% to 100% and infiltration efficiencies from 9% to 100%.
- Increased trapping efficiencies for total phosphorus between 27% and 96%.
- Increased trapping efficiencies for nitrate-nitrogen between 7% and 100%.
- Increased herbicide retention contained in runoff by 38%.
- Reduced atrazine concentrations between 56% and 99%.



Filter strips help keep soil, nutrients, and other pollutants out of creeks and streams and provide quality habitat for many species of wildlife. Photo by Bob Nichols, NRCS.

**Estimated Installation Costs:**

- \$257/acre to \$310/acre depending on use of native or non-native vegetation.
- Cost information obtained from the Texas NRCS Electronic Field Office Technical Guide for Zone 4; costs may vary for other zones.

**Practice Life Span:**

- 10 years

**Available Cost-Share Programs:**

- EQIP (up to 75% cost-share).
- CRP (up to 50% cost-share).

**For More Information:**

- Contact your local County Extension Agent, Soil and Water Conservation District (<http://www.tsswcb.state.tx.us/swcds>) or the Natural Resources Conservation Service (<http://www.usda.nrcs>).