

# BEST MANAGEMENT PRACTICES

## for beef cattle producers



The beef cattle industry is the second largest animal production industry in Mississippi. In 2002, some 23,000 Mississippi beef cattle producers generated a gross farm income from beef cattle of \$198 million. Beef production is virtually statewide with 76 of the 82 counties generating income from beef production. In addition, beef production ranks among the top three commodities with economic impact in 56 counties of the state.

Best Management Practices (BMPs) are an important environmental aspect associated with beef cattle production, as well as other agricultural enterprises in the state. BMPs are conservation practices that are an effective and practical means of reducing point and nonpoint source water pollutants. The primary purpose of BMPs is to conserve and protect soil, water, and air resources.

BMPs for beef cattle production are a specific set of practices that reduce the amount of soil, nutrients, pesticides, and microbial contaminants entering surface and groundwater while maintaining or improving the productivity of agricultural land. The list of BMPs that follows is a guide for selecting and carrying out practices that will help beef producers conserve soil and protect water and air resources by reducing the amount of pollutants reaching both surface and groundwater sources.

BMPs highlighted below are from Natural Resources Conservation Service (NRCS) production codes. More detailed information can be found in the NRCS Field Office Technical Guide (FOTG), available in all NRCS field offices, Soil and Water Conservation district offices, or on the NRCS web page. Additionally, under voluntary participation by the producer, technical assistance to develop and implement a farm-specific conservation plan is available through Soil and Water Conservation Districts or NRCS field offices.

## RECOMMENDED BEEF MANAGEMENT PRACTICES

- 1. Soil test for nutrient status and pH to:**
  - Determine the amounts of additional nutrients needed to reach designated yield goals, and the amount of lime needed to correct soil acidity (pH) problems.
  - Optimize farm income by avoiding excessive fertilization and reducing nutrient losses by leaching and runoff; and identify other yield-limiting factors such as high levels of salts or sodium that may affect soil structure, infiltration rates, surface runoff and, ultimately, groundwater quality.
- 2. Base fertilizer applications on:**
  - Soil test results
  - Realistic yield goals and moisture prospects
  - Crop nutrient requirements
  - Past fertilization practices
  - Previous cropping history
- 3. Manage low soil pH by liming according to the soil test to:**
  - Reduce soil acidity
  - Improve fertilizer use efficiency
  - Improve decomposition of crop residues
  - Enhance the effectiveness of certain soil applied herbicides
- 4. Time nitrogen applications to:**
  - Correspond closely with crop uptake patterns
  - Increase nutrient use efficiency
  - Minimize leaching and runoff losses
- 5. Inject fertilizers or incorporate surface application when possible to:**
  - Increase accessibility of fertilizer nutrients to plant roots
  - Reduce volatilization losses of ammonia N sources
  - Reduce nutrient losses from erosion and runoff
- 6. Use animal manures and organic materials:**
  - When available and economically feasible
  - To improve soil tilth, water-holding capacity, and soil structures

- To recycle nutrients and reduce the need for commercial inorganic fertilizers
7. **Rotate crops when feasible to:**
- Improve total nutrient recovery with different crop rooting patterns
  - Reduce erosion and runoff
  - Reduce diseases, insects, and weeds
8. **Use legumes where adapted to:**
- Replace part or all of crop needs for commercial N fertilizer
  - Reduce erosion and nutrient losses
  - Maintain residue cover on the soil surface
9. **Control nutrient losses in erosion and runoff by:**
- Using appropriate structural controls
  - Adapting conservation tillage practices where appropriate
  - Properly managing crop residues
  - Implementing other soil and water conservation practices
  - Using filter strips

10. **Skillfully handle and apply fertilizer by:**

- Properly calibrating and maintaining application equipment
- Properly cleaning equipment and disposing of excess fertilizers, containers, and wash water
- Storing fertilizers in a safe place

## FOR MORE INFORMATION

For more information on BMPs for beef cattle production, contact your county Extension office or Department of Plant and Soil Sciences, Box 9555, Mississippi State, MS 39762.



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