NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

GRAZING LAND MECHANICAL TREATMENT

(Ac.)

CODE 548

DEFINITION

Modifying physical soil and/or plant conditions with mechanical tools by treatments such as pitting, contour furrowing, and chiseling, ripping or subsoiling.

PURPOSE

- Fracture compacted soil layers and improve soil permeability
- Reduction in water runoff and increased infiltration
- Break up root-bound conditions and thatch to increase plant vigor
- Rrenovation and stimulation of plant community for greater productivity and yield

CONDITIONS WHERE PRACTICE APPLIES

This standard may be applied on pastureland, rangeland, grazed forest, and native pastures where the slopes are less than 30 percent.

CRITERIA

General Criteria Applicable to All Purposes

Mechanical treatments such as contour furrowing, pitting, chiseling, ripping, or subsoiling shall be designed and applied in a manner to accomplish the desired objectives and address the natural resource concerns. These treatments shall be limited to soils and slopes where surface disturbances will not result in unacceptable levels of soil erosion and/or sedimentation. Prescribed grazing (528) will follow any grazing land mechanical treatment application.

Areas to be treated shall be relatively free of undesirable or noxious plants that are likely to increase because of surface disturbance.

If natural plant community is desired, desirable plant species shall be of sufficient quantity and have a distribution pattern that allows the plants to take advantage of the improved moisture and to spread into disturbed areas.

Adequate rest from grazing shall be applied to ensure desired plant responses from this treatment.

All treatments should be planned on the contour when conditions warrant.

Assure soil is not too wet prior to treatment.

All work performed under this standard shall comply with State, federal, and local laws and regulations.

CONSIDERATIONS

Conservation practice standards Range Planting (550), Pasture and Hay Planting (512), Prescribed Grazing (528), Pest Management (595), and Nutrient Management (590) may be used in conjunction with Grazing Land Mechanical Treatment.

Increase in noxious or invasive plants may occur following treatment.

Increased surface roughness may make the treated area undesirable for some uses.

Investigate for compacted layers with a probe or other appropriate tool prior to treatment.

Investigate for tile drainage systems, pipelines and other buried structures prior to work.

Consider animal's ability to navigate terrain following treatment.

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service State Office or visit the Field Office Technical Guide.

Consider cultural resources when planning this practice. If the selected mechanical treatment will exceed the depth of prior ground disturbance, this activity could affect buried cultural resources.

PLANS AND SPECIFICATIONS

Specifications for installation of Grazing Land Mechanical Treatment shall be prepared for each site or planning unit according to the criteria. Specifications shall be recorded using State-developed specification sheets, job sheets, narrative statements in conservation plans, or other acceptable documents.

OPERATION AND MAINTENANCE

Implementation of a prescribed grazing plan according to the 528 standard is essential for the long-term operation of this practice. Heavy equipment use that will compact the soil in treated areas shall be deferred until autogenic repair processes have been restored. If the desired effects of grazing land mechanical treatment are lost over time, the practice may need to be repeated.

REFERENCES

Griffith, L.W., G.E. Schuman, F. Rauzi, and R.E. Baumgartner. 1985. Mechanical Renovation of Shortgrass Prairie for Increased Herbage Production. J. Range Manage. 38:7-10.

Vallentine, J.F. 1977. Range Development and Improvements. Brigham Young University Press, Provo, Utah.

Whisenant, S.G. 1999. Repairing Damaged Wildlands. Cambridge University Press, United Kingdom.