

**Plant Enhancement Activity – PLT16 – Intensive management of rotational grazing**



**Enhancement Description**

This enhancement is for the harvest efficiency of grazing livestock to increase forage harvest, and to improve forage quality and livestock health. The grazing system is managed to produce high quality, nutritious forage and maintain plants with sufficient energy reserves to recover quickly when adequate soil moisture is available for regrowth. Generally, livestock are rotated through pastures in the grazing system based on the physiological growth and nutritional stage of the forage plants and the daily dry matter intake and nutritional

requirements of the animal. This enhancement is for: rotational grazing systems with increased numbers of pastures or paddocks, the accompanying required infrastructure, shorter grazing periods, and increased stock density. Selection of this enhancement requires the activity to be planned concurrently on all eligible land use acres.

**Land Use Applicability**

Pastureland, Rangeland, Forestland

**Benefits**

The main benefits of Intensive Management of Rotational Grazing are efficient resource use with increased forage utilization, improved manure distribution, and nutrient cycling throughout the grazing acreage, and increased carbon sequestration resulting from greater forage harvest. Optimal environmental conditions are achieved by maintaining healthy, actively growing forage plants that improve the quantity and quality of cover available for wildlife and protect the soil surface from erosion, thereby reducing risks to ground or surface water quality.

**Conditions Where Enhancement Applies**

This enhancement applies to all grazed acres designed as pasture, range or forest land use acres on the entire operation.

Note: the grazing acres of the operation must have a defined rotation before selecting this enhancement. A single grazed field/pasture does not constitute a rotation. The minimum number of grazed fields/pastures shall be determined by each state.

**Criteria**

A prescribed grazing plan is developed that increases harvest efficiency by utilizing a 75% increase in the number of pastures/paddocks per movement group (herd). See the attached “Supplement” for specifics on harvest efficiency.



### **Adoption Requirements**

This enhancement is considered adopted when a prescribed grazing plan is complete, and implementation of the plan has begun, that incorporates a 75% increase in the number of pastures/paddocks, including the necessary infrastructure (fences/water/etc.)

### **Documentation Requirements**

1. Copy of signed “National Supplement to Plant Enhancement Activity – PLT 16 – Intensive management of rotational grazing” certifying that a grazing plan has been implemented with a 75% increase in the number of paddocks/pastures for the herd (movement group) increasing the harvest efficiency resulting from greater stock density and reduced grazing time per pasture/paddock .
2. A map or aerial photo showing the pastures/paddocks making up the rotational grazing system. The layout of the pastures/paddocks both before implementation and after implementation shall be delineated on the map or photo.

### **References**

Bertelsen, B.S., D.B. Faulkner, D. . Buskirk and J.W. Castree. 1993. Beef Cattle Performance and Forage Characteristics of Continuous, 6-paddock, and 11-paddock Grazing Systems. *Journal of Animal Science* 71:1381-1389.

Jacobo, E.J., A.M. Rodríguez, N. Bartoloni and V.A. Deregibus. 2006. Rotational Grazing Effects on Rangeland Vegetation at a Farm Scale. *Rangeland Ecology & Management* 59( 3): 249-257.

McKown, C.D., J.W. Walker, J.W. Stuth and R.K. Heitschmidt. 1991. Nutrient intake of Cattle on Rotational and Continuous Grazing Treatments. *Journal of Range Management* 44(6).

Rayburn, E.B. (editor). 2007. Forage Utilization for Pasture Based Livestock Production. NRAES – Book 173. PALS Publishing, Ithaca, New York.

Smart, A.J., J.D. Derner, J.R. Hendrickson, R.L. Gillen, B.H. Dunn, E.M. Mousel, P.S. Johnson, R.N. Gates, K.K. Sedivec, K.R. Harmony, J.D. Volesky and K.C. Olson. 2010. Effects of Grazing Pressure on Efficiency of Grazing on North American Great Plains Rangelands. *Rangeland Ecology and Management* 63(4): 397-406.

Teague, W.R. and S.L. Dowhower. 2003. Patch Dynamics under Rotational and Continuous Grazing Management in Large, Heterogeneous Paddocks. *Journal of Arid Ecology* 55: 211-229.

USDA-NRCS. 2010. Conservation Practice Standard: Prescribed Grazing-Code 528.



**National Supplement to Plant Enhancement Activity – PLT 16 – Intensive management of rotational grazing**

**State:** \_\_\_\_\_

**Participant:** \_\_\_\_\_

**Increase harvest efficiency resulting from greater stock density and reduced grazing time per pasture/paddock**

Change the current grazing system to allow for an increased number of pastures or paddocks, including the necessary infrastructure (fences/water/etc.), shorter grazing periods, and increased stock density. The grazing plan should document the planned length of grazing periods in pastures and length of time between grazing periods for an overall reduction in total grazing activity per pasture and an increased harvest efficiency resulting from greater stock density and reduced grazing time per pasture/paddock because of the 75% increase in the number of paddocks/pastures for the herd (movement group).

**Criteria:** Use the following formula for documentation, and attach a plan map showing the location of the grazing system design. The following example is provided.

EXAMPLE:

- A. Current # of Pastures/Paddocks      6
- B. Planned # of Pastures/Paddocks      11
- C. % Increase= ((B/A)-1)100%      ((11/6)-1)100 = ((1.83)-1)100 = (.83)100% = **83%**

Grazing Plan:

- A. Current # of Pastures/Paddocks      \_\_\_\_\_
- B. Planned # of Pasture/Paddocks      \_\_\_\_\_
- C. % Increase= ((B/A)-1)100      \_\_\_\_\_

**Operation and Maintenance:**

**Operation:** Livestock grazing plans should accommodate increased rest of grazing units, particularly during the active growing season of desirable rangeland and pasture species. Planned grazing use should not exceed 60% of annual production. Additional practices and inputs such as cross fences and water facility development may be required to facilitate adequate rest periods and increased harvest efficiency.

**Maintenance:** Grazing unit rotation of livestock should be accomplished annually, alternating the planned rotation sequence of grazing units each subsequent year, or specifically providing growing-season rest periods based on individual pasture condition.

**Certification:**

I certify that I have applied the grazing management system as explained in the narrative in the field(s) and listed in the table above.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**CSP 2013-1**  
**MISSISSIPPI SUPPLEMENTAL INFORMATION FOR PLT16 ENHANCEMENT**  
***PLT16 – Intensive Rotational Grazing***

This enhancement is designed to improve the forage resource and livestock health through management intense grazing. Research has shown that rotational grazing which allows adequate rest for the grasses is very important in maintaining the root system and the plants growing points. It also promotes faster regrowth of the forage, improves soil quality and water quality.

The days of rest needed for plant recovery and regrowth range from 7 to 45 days, depending on the forage species (see below table). Stocking rates and growing conditions can also affect the forage growth. Grazing systems should be designed to meet the rest requirements of particular forage as well as the needs of the livestock. By using four pastures with 14 days of grazing per pasture, the grazing cycle is 56 days and each pasture rests 75% of the time or 42 days.

**FORAGE GUIDELINES FOR PRESCRIBED GRAZING SYSTEMS**

<b>Common Forages</b>	<b>Begin Grazing (in)</b>	<b>End Grazing (in)</b>	<b>Usual days of Rest</b>
Alfalfa grazing types	10	4	35 - 40
Bahiagrass	6	2	10 - 20
Bermudagrass common	5	2	7 - 10
Bermudagrass hybrid	6	3	7 - 10
Big Bluestem	18	10	30 - 45
Dallisgrass	6	3	7 - 15
Eastern Gamagrass	15	8	30 - 45
Tall Fescue	6	3	15 - 30
Indiangrass	12	6	30 - 40
Orchardgrass	8	3	15 - 30
Switchgrass	18	10	30 - 45

Additional Criteria:

- Livestock will be rotated between at least 4 pastures in a particular functional group (warm season pastures or cool season pastures) to facilitate management intensive grazing. Starting and ending grazing periods will meet the guidelines in the above table or the Mississippi NRCS Conservation Practice Standard, Prescribed Grazing (528). Pastures will be sized and stocked to facilitate meeting the requirements for grazing heights and resting periods. It is anticipated that with a four pasture rotation that each pasture would rest about 75 percent of the grazing cycle.
- Adjustments to grazing management should be made as needed to address unexpected impacts of weather changes or even agricultural markets.

## Grazing Management Records

Keeping accurate records is a continual process in effective pasture and livestock management. Records help you track pasture conditions and effectively manage each pasture in your grazing system.

Pasture ID		Pasture acres		Forage type		
Soil test date		Lime/Fertilizer rate		Lime/Fertilizer type		Date applied
Livestock		Date in	Forage height	Date out	Forage height	Notes (fertilizer applied)
Type	Number					

Pasture ID		Pasture acres		Forage type		
Soil test date		Lime/Fertilizer rate		Lime/Fertilizer type		Date applied
Livestock		Date in	Forage height	Date out	Forage height	Notes (fertilizer applied)
Type	Number					

Producer Name:	Date:		
County:			
Tract(s)			
(Field(s))			

- Use the calculation on the national supplement to identify the harvest efficiencies and include a minimum of the following:
  - Number of paddocks: Four or more
  - Frequency of rotation: 15 days or less
  - Days of recovery: 14 or more depending on the season and re-growth
  - Minimum grazing heights will be maintained as listed or higher
  - Travel distance of livestock to water will be less than 800'
  - Nutrient management will be based on soil test, forage composition and livestock forage needs
  - Records documenting grazing heights, grazing and resting periods, supplemental feed needs

**SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_