

NATURAL RESOURCES CONSERVATION SERVICE ARKANSAS TECHNICAL NOTE

Prescribed Grazing Systems: A cost share practice

(March 2010)

Summary:

In 2009 the practice Prescribed Grazing (528) was implemented in EQIP as a mechanism for energy savings and to combine practices into a systems approach using a per acre payment instead of payments for individual practices. The intention was to create an energy systems practice to cost share on prescribed grazing without having to sign up for several practices; however, that effort was not funded on the national level. The system allows using the practices prescribed grazing, nutrient management, pasture and hay land planting, fencing and water facilities, and heavy use areas to develop a managed grazing system with one payment allocation or additive payments of multiple practices.

A grazing plan is required as part of the contract. This can be as simple as “checking” items on the prescribed grazing job sheet. As part of the development of an EQIP contract, the following items are suggested as an approach to development of the agreement:

- whole farm conservation plan developed or revised within the last two years
- soil tests within the last two years

The payment is designed to improve the grazing management of the farm through the use of any of the following:

- temporary electric fence for faster rotation and strip grazing of pastures
- temporary water systems for better water distribution, particularly during the summer
- broadcast or no-till seeding of annuals and legumes for extending grazing season
- feeding hay in a manner that spreads nutrients on pastures to maintain fertility
- management to prevent continuous access to water sources to protect riparian areas
- labor for increased management of pastures
- attendance at grazing management workshops to train farmers on grazing mechanics

It is imperative that persons not genuinely interested in establishing a rotational grazing program not enter into a contract on prescribed grazing systems.

Justification:

By using a controlled grazing system landowners ensure an adequate rest period for pastures. Renovating pastures to have a 20-30% legume component and using a nutrient managing plan that recycles the manure and urine of the grazing animals by deposition on pasture rather than in watering areas, under shade trees and in loafing areas, decreases the need for supplemental nitrogen on pastures. Supplemental nitrogen on pastures, which can be as much as 100-200 pounds of nitrogen per year, is not needed because of the increased organic matter of the soils, contribution of nitrogen through the legumes in the pasture, and recycling of nutrients by the grazing animal. A well-managed grazing program keeps pasture plants within the phase two of the growth curve, which encourages rapid growth without large expenditures of nitrogen or depletion of stored carbohydrates in the roots of the plant.

A second component of a good grazing program is increasing harvest efficiency of pasture grown. A slow rotation or continuous grazing program will only harvest about a third of the forage produced whereas a faster rotation of moving livestock every day or couple of days

will increase harvest efficiency to 60-70%. This improves the economic sustainability of a grazing operation. Increasing harvest efficiency requires twice a week rotation.

Properly managing pastures increases root growth of plants, sequestering more carbon and increasing organic matter of soils. Pastures that have been rotationally grazed can routinely have organic matter content of 3-4%. Additionally, each well managed pasture serves as a filter strip, buffering areas along streams. Estimates show that an increase of carbon sequestration of seven tons per acre can be realized. Soil quality is improved with improved grazing management by increasing organic matter, enhancing soil structure, greatly increasing biological activity and significantly improving nutrient cycling. Soil erosion is reduced with increased soil cover, absorption of water and decreasing water runoff, and reduced trampling and compaction.

Qualification:

Available to any producer not doing any one of the following items:

- Does not have a minimum prescribed grazing program (four pastures per grazing herd or flock) or that wants to double the present frequency of rotation (up to implementation of a program that rotates animals daily).
- Does not have a 20% legume composition of individual pastures. NOTE: This does not mean 20% of the pastures would have a legume; it means 20% of the composition of each pasture should be legume.
- Is not feeding hay in a manner that would use the hay as a nutrient source (does not unroll hay or feeds hay in the same place all the time).

Requirements:

The prescribed grazing plan should be implemented upon signing of the contract by starting a rotational grazing program. Because the cost share is planned to stimulate proper grazing management and the practices are variable with an emphasis on “temporary” fence and water systems, payment may be made as soon as the grazing program is implemented. All components of the practice are required to be started during the first year and maintained for three years. The program encourages expansion to twice a week rotation by the end of three years to increase harvest efficiency and diversity of pastures.

- Each pasture MUST be rotationally grazed with a minimum of four (4) pastures/paddocks per herd (flock, etc) of animals in order to rest each pasture 75% of the time at the beginning of the contract. For proper grazing management, this requires a “weekly” rotation. Guidelines for beginning and grazing heights of pasture should be followed and stock density used to improve harvest efficiency of pasture. Temporary electric fence may be used to establish the rotational grazing program for the period of the contract. Also visit with farmers when developing a grazing program about using strip grazing during drought periods or fall/winter grazing.
- Legumes will be seeded (broadcast, frost seeding, or no-till) at the recommended rate if pastures do not have a legume content of 20% of the composition of the pasture. This means the applicant should manage each pasture to have a 20% composition of legumes. Seeding will be done the first year. Pastures will be managed to enhance legumes (rested properly, grazed to remove grass canopy, do not apply nitrogen fertilization) throughout the three years. If pasture fertility (monitor with soil testing) is a concern, pasture and hay land planting (legumes) should be considered instead of prescribed grazing.

- Hay will be fed in a manner that uniformly distributes manure on the pasture (unrolling hay or controlled feeding of hay that does not repeatedly offer hay in the same location) and protect water quality by not feeding hay within 50 feet of water flow areas. Hay should not be fed in a place that has direct drainage into ponds or other water sources.
- Cost share applications for permanent fence and/or water system development may be made if the producer does not have a viable grazing system established or wants to double the number of pastures being grazed in a rotation. Temporary fence and water supplies may be added to the grazing plan through the prescribed grazing systems practice.
- Prescribed grazing payment is in addition to any other payments for the individual practices for the system (e.g., building fence or developing water systems for improved livestock distribution). NOTE: Interseeding of legumes through pasture and hay land planting cannot be used in addition to prescribed grazing systems as the cost scenario for prescribed grazing includes seeding pastures with legumes.
- No commercial nitrogen fertilization will be used on grazed pasture land; however, poultry litter or other products that contribute to general fertility or organic matter may be used.
- Acres only harvested for hay are not eligible for prescribed grazing; however, pastures that are grazed but occasionally cut for hay are eligible as long as commercial nitrogen fertilization is not applied to the pasture.
- A whole farm conservation plan is recommended to ensure farm resource concerns are addressed. Soil tests within the last two years are required to develop the plan.
- A grazing plan is required prior to finalizing the contract. The grazing plan should have all practices that can be used to justify the use of Prescribed Grazing for cost share (subdividing pastures with temporary electric fence, water distribution, expanding the grazing season through seeding of annuals or legumes, controlling access to water sources, nutrient management using hay feeding as a source of nutrients). The land owner/manager and NRCS contact shall develop a plan that estimates the expenditures for the cost share.
- Participant is encouraged to attend a grazing workshop.
- Initial payment may be made when the producer begins the rotational grazing program and other annual payments are suggested on the anniversary of the first payment, assuming that progress in the complete grazing plan is being made.

Review the general specifications for Prescribed Grazing (528) and the Arkansas Technical Note “Creating a prescribed grazing plan”. Develop a grazing plan that will address the weaknesses defined in the whole farm conservation planning evaluating resource concerns on the farm. Working with the land owner/manager, include in the grazing plan the above items that will be performed in the contract to receive the prescribed grazing funding. NOTE: If the land is really low in fertility, it might be best to use pasture and hayland planting for legume establishment as a practice rather than using prescribed grazing. This year there is a separate cost scenario for establishment of legumes in pasture. If the farm needs permanent water system development or fence to subdivide large pastures to more effectively implement a grazing plan, these practices may be used in addition to prescribed grazing, where temporary fence and water systems are emphasized.

Specific considerations:

Components of the soil test: If the pH is lower than a minimum of 5.8, phosphorus lower than 60 lbs/acre and potassium lower than 180 lbs/acre, pasture and hayland planting to establish legumes should be considered instead of prescribed grazing. The pasture and hayland planting practice includes adjustment of pasture fertility as part of the practice payment and would be a better choice for the farmer. However, if a soil test is only lacking in one item, it might be best to develop a prescribed grazing contract and have the owner bring that item up. Two examples might be a farm has been using poultry litter but has not limed. Another might be a farm that has been using a generic fertilizer blend for years, cutting hay on the fields, and has decreased the potassium to a very low level.

Balancing forage supply and animal requirements: Determination of stocking rate is one of the critical components of economic and environmental sustainability of a grazing operation. A key component of a prescribed grazing plan is balancing forage supply. For example, a grazing plan that has 20 cows on 150 acres of productive land is not adequate without addressing how to increase stocking rate because the forage supply is out of balance with need. For a prescribed grazing practice to be funded, the balance must be addressed. Regarding stocking rate, this will be initially valued at 2.5 acres per cow/calf unit or one acre per animal for stockers/replacement heifers. Stock density will be estimated at 30,000 to 50,000 lbs of livestock per acre per day (or 4,000 to 7,000 lbs per acre per week).

Feeding hay as a nutrient management practice: Good quality hay will have a nutrient composition of approximately 42-14-48. The plan should address where hay will be fed and how to distribute these nutrients where needed. Preferably, hay will be unrolled; however, bale feeders may be used when hay wastage is minimized through their use but the bale feeder must be moved each time hay is fed. Refer to the fact sheet “Nutrient management of pastures”.

Temporary electric fence: An option to encourage landowners to consider an improved grazing management program is to use temporary electric fence to allow them to get experience in rotational grazing. Cattle should be trained to electric fence in the beginning. Refer to the fact sheet on training livestock to electric fence. The payment structure is planned to allow the purchase of temporary fence and fence supplies such as portable fence energizers. Also, temporary electric fence can be used to strip graze, especially when pastures have been stockpiled for winter use.

Temporary water systems: The technology development with temporary water systems includes many items that can be used effectively in watering livestock. Refer to the Missouri Water Systems publication. The objective is to have a good quantity of water available to livestock within 600-800 feet of where they are grazing. Temporary water systems include small tanks that can be moved from paddock to paddock with the livestock, burst proof plastic pipe that can be laid on top of the ground for better water availability, and quick couplers that can be added to water lines to allow portable tanks to be plugged into the system. These options should be considered in development of the grazing plan.

Manage to prevent continuous access to water sources: A well-managed rotational grazing program helps protect water quality as cattle do not have continuous access to streams and other

water sources. A component of the grazing plan should include discussions with the land owner regarding managing the access to water sources to include fencing cattle out of streams and/or having managed accesses to the water sources. If permanent fence is used for these activities, then fence cost share (access control) can be considered. This item has a 75% cost share this year. The grazing plan may include flash grazing the riparian areas when the weather conditions would be suitable.

Definition of grazing season: The prescribed grazing practice primarily includes pasture rotation during the active growing season; however, pastures that are stockpiled for fall and winter grazing would be managed with a strip grazing program using temporary electric fence. During the nongrowing season, livestock should not have access to pastures that are not being actively grazed or being used for hay feeding. This allows the pastures to rest and extends the grazing season.

Labor and knowledge acquisition: Estimates of labor requirement to temporarily divide pastures and move livestock are factored into the payment structure as well as monitoring pastures through the use of condition score sheet and unrolling hay (includes purchase of equipment). Additionally, each applicant is encouraged to attend a grazing workshop some time during the contract as time/expense is included in the cost share.

Conclusion:

The above discussion has been presented to illustrate the general requirements of prescribed grazing as a cost share practice. It is intended to stimulate discussions between NRCS personnel and landowners/managers to develop a grazing plan that will use the funds to address the farm resource concerns and establish a controlled grazing program. **The IMPORTANT component of this contract is that the District Conservationist and the landowner/manager reach an agreement that enables the producer to establish a well-managed grazing program and address the resource concerns on the farm to justify the cost share by incorporating practices into one practice payment.**