

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION GUIDE SHEET**

FORAGE HARVEST MANAGEMENT

(ac.)
CODE 511

TIMING AND FREQUENCY OF HARVEST

Removal of forage will be in accordance with plant species limitations, plant sensitivities, planned goals, and objectives.

Frequency of harvest will be based on the rate and physiological conditions of plant growth.

Weakened forage stands caused by environmental or management induced stresses (severe cold or heat, ice sheets, drought, waterlogged soils, or flooding, overgrazing, or too frequent cutting) shall be deferred from harvest use until signs of stress are gone.

Forages will be cut within a stage of maturity that will provide adequate food reserves and/or when auxiliary tillers or buds are present for regrowth to occur without loss of plant vigor. When multiple harvests of forages occur within the same growing season, cut just prior to stem elongation. For details on when to cut and appropriate cutting heights, see Table 1.

Minimum stubble heights or ranges are based on specific species needs for the following: adequate residual photosynthetic area; terminal or auxiliary bud retention; insulation from extreme heat or cold; and the retention of stem bases, stolons, or rhizomes that store food (reserves to allow for vigorous recovery.) Adequate regrowth before the first killing frost is essential to insure adequate food reserves for initial spring growth and to provide protection from winter injury. See Table 1 for minimum stubble height and fall regrowth.

The specified number of harvests per year shall be based on the forage's plants ability to regrow after defoliation by cutting, its growth rate response to environmental conditions, its end of the season minimum stubble height and food reserve requirements, and the length of the growing season.

Continued harvesting, year after year, of certain grass species when in the boot stage, will result in lowered vigor. This can cause desirable grasses to decrease and other less desirable plants to increase. When this phenomenon is first noticed, postpone harvesting until after the key grass species have set seed in order to maintain productivity over the long-term. It is usually best, from a management stand point, to schedule this practice on a rotational basis to benefit only a proportion of the hayland each year. The deferred portion will produce a feed, higher in quantity and lower in quality, that can be used at times of lower animal nutritional requirements.

Rangelands with range sites that have a water table throughout a major portion of the growing season may be harvested for hay once a year. All other rangeland sites should be harvested no more than every other year to allow adequate plant vigor recovery. Limit grazing on rangeland harvested for hay to the dormant season in both the harvest and following year, or incorporate these areas into a prescribed grazing system which allows for adequate rest periods to improve plant vigor.

ANIMAL HEALTH AND FEED QUALITY

Forages will be selected and harvested in such a manner as to produce feed which meets the nutritional demands of the kind and class of livestock being fed, (i.e., total digestible nutrients, percent crude protein, etc.).

Harvested forages should be forage quality tested so rations can be balanced to meet nutritional demands of the livestock being fed.

Producers should be cautioned that accurate timing of harvest is required to optimize yield as well as quality. In general, hay that is cut in earlier stages of plant maturity will be of higher quality than that cut in later stages of plant maturity.

Caution should be used when grazing sorghums to prevent prussic acid poisoning, especially during periods of stress (drought, frost). Also, heavily fertilized and/or drought impacted crops enhance the potential of nitrate poisoning.

In conjunction with this practice, feed storage and feeding methods should be utilized which retain acceptable forage quality and minimize losses.

GENERAL CONSIDERATIONS

Resident wildlife needs should be considered when planning the harvesting dates. Generally, haying operations delayed until after July 15 will reduce negative impacts on wildlife. Harvest from the center of the field outward to provide better escape cover. Flushing bars mounted on harvesting equipment reduces mortality to nesting birds and should be recommended when appropriate.

If weeds compete with desirable forage species for nutrients and moisture, follow the guidelines in Pest Management (595), conservation practice standard, Section IV, South Dakota Technical Guide (SDTG).

Well managed soil fertility levels will maintain high forage yields and enhance forage quality. Follow guidelines in Nutrient Management (590) conservation practice standard, Section IV, SDTG.

If the land is also grazed, then Prescribed Grazing (528A), conservation practice standard, Section IV, SDTG, will be part of the conservation management system.

For safety, avoid forage harvesting on slopes in excess of 15 percent.

The total management plan may consider harvesting of surplus pastureland for hay and the grazing of hay and crop aftermath. Supplemental pasture from annual forage crops can be an effective means of providing forage during shortages or while permanent pasture or haylands are being established.

In general, forage crops should be managed the same whether they are grown for silage or hay. Machinery operations should be minimized to reduce leaf loss, especially on legumes, and to maximize hay quality.

TABLE 1. HAYLAND MANAGEMENT

SPECIES	WHEN TO CUT	MINIMUM STUBBLE HEIGHT	OPTIMUM REGROWTH BEFORE KILLING FROST
<i>Creeping foxtail</i> <i>Intermediate wheatgrass</i> <i>Pubescent wheatgrass</i> <i>Smooth bromegrass</i> <i>Tall wheatgrass</i> <i>Western wheatgrass</i> <i>Meadow bromegrass</i> <i>Bluegrass</i>	<i>1st cutting - Medium to full head</i> <i>Latter cuttings - when new basal sprouts appear, or regrowth reaches appropriate cutting heights (12"-15")</i>	<i>3 inches</i>	<i>6 inches</i>
<i>Slender wheatgrass</i>	<i>Early Head</i>	<i>3 inches</i>	<i>6 inches</i>
<i>Crested wheatgrass</i> <i>Green needlegrass</i> <i>Orchardgrass</i>	<i>Boot to early heading or when regrowth is 14-20 inches</i>	<i>3 inches</i>	<i>6 inches</i>
<i>Reed Canarygrass</i>	<i>1st cutting - early boot</i> <i>Latter cuttings - when new basal sprouts appear, or regrowth reaches appropriate cutting heights (12"-15")</i>	<i>3 inches</i>	<i>6 inches</i>
<i>Big & Sand bluestem</i> <i>Indiangrass</i> <i>Switchgrass</i>	<i>Early boot to boot stage</i>	<i>6 inches</i>	<i>10 inches</i>
<i>Alfalfa</i>	<i>1st cutting - late bud to early flower</i> <i>Latter cuttings - 1/4 bloom</i>	<i>2 inches</i>	<i>8 inches</i>

Boot - most heads in upper leaf sheath but prior to emergence

Early Head - tips of heads emerging on not more than 10 percent of stems

Medium Head - about 50 percent of the heads emerged or emerging

Full Head - most heads fully emerged but prior to any flowering