

# Post Rock Extension District Column

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## **Do you know the guidelines for properly burning your pasture?**

This is the time of year that you might start seeing smoke on the horizon depending where you are in the state of Kansas! It still is pretty dry in some areas, but in other areas a prescribed burn might be just what the pasture is needing to revive the growth and development. Producers are evaluating pastures to see if a “prescribed burn” might be a management tool for improving the productivity. FIRE.....This word is feared by most people, but fire is the major factor allowing grasslands to exist. Historically, grasslands developed with fire, drought, and grazing. Natural fires ignited by lightning as well as those started by Native Americans occurred throughout the year. Most often, these fires occurred in areas with heavy growth. Heavy grazing by bison, elk, and longhorn created short areas that were resistant to burning. As fires swept through an area, the grazing shifted to the new regrowth on burned areas.

**So what are the benefits of doing a prescribed burn?** A proper prescribed burn can recycle nutrients tied up in old plant growth, stimulate tillering, control many woody and herbaceous plants, improve grazing distribution, reduce wildfire hazards, improve wildlife habitat, and increase livestock production in stocker operations. To gain these benefits, fire must be used under specified conditions and with the proper timing.

Timing of the burn is a critical element for obtaining the desired response. The kinds, amounts and nutritional content of various plants in a rangeland area can be changed by fire. The presence and abundance of plant species, forage yields, and range conditions are all affected by the time of burning. To control or reduce undesired plants, they should be burned at the weakest point in their growth stage. In order to damage a particular plant, burning must occur when the plant is actively growing or has buds above the soil surface, which can be destroyed.

**So when is the proper time to do a prescribed burn to your pasture?** For perennial plants, the plant’s food reserves should be at or near their lowest point in their annual growth cycle, so regrowth would be difficult. Perennial plants that have bud zones below the level of the fire readily resprout, normally with an increase in stem numbers. Annuals, that have their growth point above the soil surface, will be damaged or destroyed by a fire that occurs during their growth period.

Some examples of how fire affects plants may help in understanding why timing is important. Woody perennials, such as Buckbrush (coral berry), must be burned in late spring for 2 to 3 consecutive years for effective control. During late spring, it is actively growing and fire destroys the top growth. Regrowth is slow since its food reserves are low and successive burns prevent build-up of food reserves and eventually kill the

plant. Smooth sumac, another woody perennial, has a life cycle similar to warm season grasses in that it does not reach the lowest point in its food reserves until late May or June. It also doesn't begin vegetative growth as early as native grasses.

Eastern red cedar, another invasive pasture weed, is readily killed by burning, especially when it is less than 5 feet in height. It does not have buds that can re-sprout, so when this plant is defoliated, it dies. However, larger cedar trees will not be killed by fire and must be cut at ground level to be controlled.

Burning to favor desired grass plants should be done when they are just starting to green up. The native grasses should have an average of ½ to 2 inches of new growth when they are burned. This occurs in mid to late spring. At this stage the plants are able to grow back quickly. Ideally, the soil profile should have adequate water at the time of burning, and the surface should be damp. Big bluestem and Indiangrass are increased when the range is burned in late spring. In the tallgrass prairie area, the amounts of sideoats grama, blue grama, and buffalograss increase only slightly. Little bluestem and switchgrass decrease or are maintained by a late spring burn.

**Recommended burning dates for native warm-season grasses for livestock production for north central Kansas generally ranges from April 30 to May 5.** It should be noted that these dates may be as much as 10 days earlier or later depending on growing conditions for a particular year.

According to long term studies, repeated annual burns does result in a gradual decline in the percentage of broadleaved forbs and cool-season grasses and an increase in the percentage cover of warm-season grasses. In addition, with no burning over the long term, the cover of woody plants increases by about 1 percent per year initially, but then accelerates such that prairie grasses and forbs can be completely displaced by 100 percent tree and shrub cover in less than 40 years.

Prescribed burning must be integrated into grazing management to gain the full benefits. Combining stocking rate with prescribed burning will allow the desirable vegetation to be competitive and help reduce the establishment of many undesirable plants.

Fire is an excellent management practice for improving grazing distribution. Areas that are not usually grazed or are under-grazed can be burned while leaving the over-grazed areas unburned. The animals are attracted to the grasses in the burned areas since they are more accessible and palatable.

A safe burn involves planning, skill, and experience as well as knowing safety requirements and state regulations. Landowners are encouraged to check weather for at least three days following any planned burn, as it has not been uncommon for an ember to get whipped to life by dry winds a day or two after a prescribed burn. Homeowners in rural areas, or any area where natural vegetation borders their property, should clear debris, keep their lawn mowed, clean out gutters and corners that collect fallen leaves, and remove anything that a blowing ember could light on fire and threaten homes, barns or other farm buildings. A plan for burning should outline weather conditions, manpower, equipment, and other needs as well as how to conduct the burn.

Prescribed burning is an excellent management practice for grassland. Properly used, it can be a cost effective method for increasing the productivity of rangeland as well as controlling many undesirable plants. It also can reduce the hazards of wildfires and benefit domestic livestock and wildlife. Safety of people on and around the burn as well as public roads and airports must be considered.

K-State Research and Extension has an excellent resource available, “**Prescribed Burning as a Management Practice**” available online or at any of our Post Rock Extension District Offices in Beloit, Lincoln, Mankato, Osborne or Smith Center. If you have any questions regarding prescribed burning, contact me at any of our Post Rock Extension District Offices.

*Post Rock Extension District of K-State Research and Extension serves Jewell, Lincoln, Mitchell, Osborne, and Smith counties. Sandra may be contacted at [swick@ksu.edu](mailto:swick@ksu.edu) or by calling Smith Center, 282-6823, Beloit 738-3597, Lincoln 524-4432, Mankato 378-3174, or Osborne 346-2521. Join us on Facebook at “Post Rock Extension” along with our blog site at [postrockextension.blogspot.com](http://postrockextension.blogspot.com). Also remember our website is [www.postrock.ksu.edu](http://www.postrock.ksu.edu) and my twitter account is @PRDCrops.*