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# SAINFOIN: AN OPTION TO EXTEND THE GRAZING SEASON

## Can this pink-flowered forage plant put you in the black?

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The cost of feeding hay or other harvested forage during winter is the largest expense of owning or raising livestock in Montana. For owners or producers of grazing animals such as horses, cattle, sheep, goats, llamas, or alpacas, one of the best ways to reduce costs is to extend the number of months that livestock graze on pasture or rangeland. In other words, a great way to reduce costs is to “let your livestock do the walking (and feeding)” by spending more of the year grazing and less time being fed processed feed.

Sainfoin (*Onobrychis viciaefolia*), with its striking pink flowers, is a beautiful Montana forage plant that offers opportunities to extend the grazing season. One option is to cut sainfoin for hay in early summer (when 50 to 100 percent of sainfoin plants are blooming; about the same time that 10 percent of alfalfa plants are blooming) and then have livestock graze the hay aftermath and regrowth during fall. Another option is to not harvest it for hay but, instead, graze sainfoin twice per year, once during its bud or early bloom growth stage in early summer and again during fall. Sainfoin begins its growth about the same time in spring as alfalfa, but sainfoin reaches its flowering stage one to two weeks earlier, allowing sainfoin to be grazed earlier in the year than alfalfa. Grazing sainfoin in

early summer also provides opportunities to delay grazing of native rangeland or other pastures until later in summer when those plants are more tolerant of grazing.

Sainfoin is an ideal pasture plant because it is nutritious and palatable to grazing animals and, unlike alfalfa, sainfoin does not cause bloat. Bloat is a serious sickness in grazing animals where the stomach and bowels become distended with gas. Bloat makes breathing difficult and is often fatal. Bloat can be avoided with alfalfa by delaying grazing until alfalfa plants are dormant, but no such delay is needed when grazing sainfoin. Also, compounds contained in sainfoin naturally control internal parasites of grazing animals, reducing the need for pesticides. One cautionary note is that sainfoin is very palatable to all grazing animals, not just livestock. Deer, elk, pronghorns, and bighorn sheep all are attracted to sainfoin. This can make for great wildlife viewing, but wildlife use of sainfoin sometimes exceeds tolerable levels where large numbers of grazing wildlife congregate.

Sainfoin is suited to both dryland or sprinkler-irrigated sites, but it does not grow well with flood irrigation or where soils remain saturated. In these conditions sainfoin suffers from

crown rot and root rot. Similarly, sainfoin grows well on light-to medium-textured soils such as sandy loams or silt loams, but not clay soils that hold moisture tightly. Sainfoin is shorter-lived under irrigation than on dryland sites, and shorter-lived under haying than when properly grazed. Sainfoin will remain healthy and vigorous when grazing ceases with at least eight inches of stubble remaining on sainfoin plants.

Sainfoin is easy to establish and can be planted alone or in simple mixtures with one or two grass species. Sainfoin plantings will persist longer when planted in alternate rows with grasses. Nine to 12 inches should separate the rows. Crested wheatgrass or Russian wildrye are good companions seeded with sainfoin on dry areas, while meadow brome grass or orchardgrass are good companions on wetter or irrigated areas. Sainfoin should not be planted with aggressive rhizomatous grasses such as smooth brome that will outcompete sainfoin. Preferred sainfoin cultivars for Montana conditions are 'Shoshone', 'Nova', 'Remont', 'Eski', or 'Melrose'.

Sainfoin is a legume (see below), making it possible to grow well without needing to fertilize heavily with nitrogen. However, the specific rhizobium bacteria suited for sainfoin is not found in most Montana soils, so it is important to buy pre-inoculated seed (i.e., seed with effective rhizobium already added), or be sure to buy inoculants to treat sainfoin before planting. Sainfoin may need more nitrogen fertilizer than other legumes such as alfalfa or birdsfoot trefoil, but sainfoin requires less phosphorus fertilizer than either alfalfa or birdsfoot trefoil. ■



## Underground Teamwork: Doubles Tennis Anyone?

Some species of forbs and shrubs, called legumes, can grow without having to add much, if any, nitrogen fertilizer. The reason is that legumes can produce their own nitrogen in the soil with the help of specialized bacteria (rhizobia) that live in nodules on legume roots. The rhizobia bacteria convert nitrogen gas from the air into nitrogen that the legume plant can use to grow. In return, the legume plant uses solar energy to convert carbon dioxide from the air to produce sugars (i.e., the process of photosynthesis) that the plant uses to feed itself and the rhizobia bacteria. In this way the legume plant and the rhizobia bacteria work together to benefit each other—nature's version of two tennis players partnering to play doubles!