

New Interest in Sainfoin

Western producers are considering the potential of this old forage legume.

by Troy Smith

If your personal piece of cattle country is located in the intermountain West or the northern Great Plains, you may have heard of sainfoin. It has seen limited use in the Southwest, too, but many cattle producers are not familiar with this perennial forage legume.

An ancient crop originating in Asia and domesticated in Europe, sainfoin was introduced to the United States a century ago. Under some harsh growing conditions, it is a viable alternative to alfalfa. Safe for grazing, sainfoin does not produce bloat. Yet, it has never been widely produced in the U.S.

There are true believers though — producers who consider sainfoin a staple crop for haying and grazing. The Lau family, of Soda Springs, Idaho, ranks among the few forage growers who have produced sainfoin for decades. John Lau says his father first sowed a modest 20 acres in the early 1970s

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as part of a dryland crop rotation. Attributes of attraction included its adaptation to the area's calcareous soils, as well as its resistance to drought and frost damage.

"For dryland forage production in this area, it's better than alfalfa," Lau says. "We've seen sainfoin produce as much as four tons of hay to the acre, but that's unusual. I'd say one and a half tons is more typical. The disadvantage is you only get one cutting."

Lau Family Farm has had as much as 300 acres dedicated to sainfoin. During the years, however, more of their acreage has been

devoted to sainfoin-grass mixtures, rather than pure stands. Lau takes a cutting of hay and grazes the regrowth in the fall.

"We like the hay. It looks coarse, with big stems, but cattle really like it," Lau adds.

John Bagley agrees sainfoin is a more dependable forage crop than alfalfa in some environments. On his high-desert ranch, near Koosharem, Utah, Bagley harvests two cuttings of sainfoin per year under sprinkler irrigation.

"We tried to raise alfalfa, but our growing season is too short. Actually, at this elevation, we can get frost just about anytime. With alfalfa, we seldom got much of a first cutting," Bagley says.

After turning to other forage crops — mainly mixtures of grasses and milk vetch — Bagley discovered information about sainfoin. He experimented with it, conducting side-by-side field comparisons between a sainfoin-orchard grass mixture and a mixture containing milk vetch and orchard grass. He found that stands containing sainfoin typically were easier to establish.

"The milk vetch usually took two or three years to get going. Sainfoin took hold quicker. It's frost-resistant and usually starts growing in March. You don't want to overwater it, though. Frequent but light watering is best," Bagley says. "We've hayed it and grazed it. Usually, we can take two good cuttings of hay and then graze the aftermath. Having that regrowth to graze has been an asset to our stocker operation."

Renewed interest

According to Montana State University (MSU) Forage Specialist Dennis Cash, sainfoin was introduced to Montana prior to 1900. It didn't attract much attention until MSU developed new varieties during the 1960s and 1970s.

Many producers still shied away from sainfoin, since the forage's necessary high seeding rates made establishing a stand costly. Typically, pure stands are planted at 30-35



PHOTOS COURTESY OF JOHN AND LORI ANNE LAU

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pounds (lb.) of pure live seed per acre, and 40-45 lb. per acre on irrigated ground.

More recently, however, Cash has received many telephone and e-mail queries for information. Reasons may include the fact that drought-driven shortages of hay and pasture prompted producers to seek forage production alternatives. In some cases, ranchers are interested in establishing high-quality grass-legume pastures to extend their grazing season and reduce their dependence on hay. In addition, seed costs have moderated.

Even \$60- to \$80-per-acre seeding costs for a nitrogen-fixing legume sound more reasonable as fertilizer prices climb higher. Some seed companies have promoted sainfoin more aggressively, too, particularly for use in combination with cool-season grasses, so less sainfoin seed is required.

"Sainfoin's adaptability and production have been documented in Montana for the past 40 years, and we are encouraging producers to consider it for new hay or pasture plantings," Cash states.

Compared to most forage legumes, it's better-suited to growing conditions prevalent in many parts of the West. In regions where precipitation is very limited and the growing season is short, its production and stand longevity are competitive with alfalfa. First-cutting yields generally are as good or better.

Harvested at mid-bloom, sainfoin retains its leaves and nutrient content better than most legumes. Typically, crude protein (CP) content is slightly lower than alfalfa, while carbohydrate content is higher and digestibility is similar.

"It is well-adapted to the hay-stockpiling system used by ranchers in Montana and the Northern Plains. First-cut hay is harvested

and the resulting aftermath is used for fall grazing," Cash explains. "Sainfoin is bloat-free due to its levels of condensed tannins. However, it is highly palatable to livestock and wildlife."

Not without limitations

Cash says producers should be aware of sainfoin's limitations, too. It is only suited to well-drained soils with a pH greater than 7. It is sensitive to acidic soils and saline conditions. Stands of sainfoin do not persist long in heavy soils or under flood irrigation. Establishment vigor is similar to alfalfa, but seedlings do not compete well with cereal grains, like oats, when planted as a companion crop. And while some stands

are reported to have persisted for 20 years, pure stands of sainfoin typically decline after the fourth or fifth season.

Sainfoin seed also requires a specific bacterial inoculant to stimulate formation of nitrogen-fixing root nodules. The necessary *Rhizobium* bacteria is generally absent in soils of the western U.S.

Sainfoin's greatest weakness is its susceptibility to several root and crown pathogens that can limit longevity. Research has resulted in development of varieties with increased resistance to root and crown rot, increased yields and improved regrowth for multiple cuttings, but sainfoin often works best in short-term crop rotations. For long-term situations, planting sainfoin in combination with grasses will produce higher yields and higher-quality forage than grasses alone, and the legume's longevity is likely to be increased.

Producers living in areas where conditions support production of alfalfa are probably wise to stick with alfalfa. However, in western environments not conducive to raising alfalfa, sainfoin may be a viable alternative. Cash believes 2007 will see more acres

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planted to sainfoin, over a wider area, than ever in history. Then maybe the effort forage scientists devoted to sainfoin 30 years ago will finally be rewarded.

