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Winter Burning Can Enhance Stands of Summer Legumes

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Several summer-growing legumes occur naturally in Florida pastures and rangelands. Others, such as *aeschynomene* and *carpon desmodium*, are often planted in pastures. Regeneration of legume stands from seed supplies in the soil can be enhanced by burning areas which have accumulations of old growth. Rough wooded portions of rangelands often contain native legumes such as *Galactia* species, *Desmodium* species, and others which contribute substantially to wildlife food supplies. Opening these areas with a burn can stimulate growth of existing legume plants and provide improved conditions for establishment of additional seedlings. Since native legume stands are typically rather sparse, they can be quickly consumed by cattle at normal stocking rates. When the objective is provision of food for wildlife, care must be taken not to over-utilize spring legume growth with livestock. Also, sufficiently large areas must be burned for existing wildlife, especially deer, or concentration of animals on preferred plants will result in over-use and deterioration of stands of these plants.

In pastures which were not heavily utilized during the preceding growing season, burning can also be beneficial to some introduced legumes. Burning has been observed to enhance stands of *carpon desmodium* in some situations. As with the native legumes on rangelands, caution must be taken not to overgraze initial legume growth in early spring following burning when available forage supplies are low. Legume stands might be damaged by excessive grazing rather than enhanced by the reduced competition. Old grass growth restricts legume growth through shading but also protects it from being readily accessible to grazing livestock. In addition to adverse effects of overgrazing in early spring, *carpon desmodium* seedlings are especially vulnerable to loss from drought. Thus, in extremely dry years, stands of this legume may not improve even with the most favorable management. By late spring or early summer when moisture and temperatures

favor rapid grass growth, grazing benefits carpon desmodium by restricting grass competition.

While burning can remove old growth which limits aeschynomene establishment, aeschynomene typically germinates late enough in the spring that some grazing following a winter burn is needed to prevent excessive grass accumulation before seedlings establish. Burning late in the spring can be more beneficial to aeschynomene than winter burning. However, since moisture is the first limiting factor to establishment of aeschynomene stands each spring, favorable moisture conditions are necessary for any burning or grazing approach to be beneficial.

Some pasture legumes are not tolerant of burning. The recently released Cultivar, Savanna stylo, and the Australian cultivar, Shaw creeping vigna (which has shown considerable promise in recent evaluations on Florida flatwoods), are not tolerant of burning. While stands of the Shaw creeping vigna have been considerably damaged by burning, Savanna stylo, stands have recovered rapidly from winter burning. Stylo plants living over the winter appear to be readily killed by burning, however, germination and establishment of new seedlings appears to be greatly enhanced by burning.

Burning can be an effective means of enhancing stands of some legumes when moisture and grazing pressure are favorable. Differing effects of burning on various legume species and even differing effects due to different burning conditions complicate the use of burning for such specific responses.