

Intercropping in Perennial Grass Pastures



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Planting annual forage species such as small grains and legumes into perennial grass pastures can be a great way to supplement your livestock's summer and winter nutrition program. Intercropping can also help save fertilizer and money through the reduced need for other supplemental feeds. In many instances the success of these intercropping efforts depends on preparation, practices used and management.

Variety and Blend Selection Considerations

There are a few important characteristics to consider when selecting varieties and/or blends of varieties that will impact the success of your annual forages.

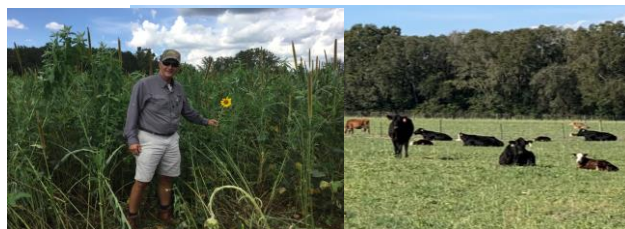
Site Characteristics - Depending on things like soil type, irrigation, and perennial grass species present your variety selection can make a huge difference in forage production. For example, dry sandy soils with no irrigation would dictate selection of drought hardy species while the availability of irrigation or the presence of heavier soils will allow you more flexibility in variety selection. Also planting annuals into established Bahia grass pastures may dictate you use a fast germinating and growing variety compared to planting into Bermuda grass pastures.

Grazing Strategy - How you plan to graze your annual forages should be a major consideration in selecting varieties and blends.



Grazing Strategy Continued - Your grazing strategy takes into account your stocking rate, mob grazing or continual grazing, duration of grazing period, and your overall grazing scheme. Annuals that plan to be grazed over the entire summer or winter and/or continually grazed would dictate variety with good regrowth potential while annuals planted for calving season that will be flash grazed might not require such high regrowth potential. These grazing strategies also dictate how many species you should include in your annual grazing blend. A general rule of thumb is that the more species in the blend the more robust that blend is to grazing and environmental conditions meaning you are likely to obtain greater nutrition, grazing duration and cost savings from blends like this.

Planting Methods - The final important consideration is planting method. Whether you use a no-till drill, conventional drill, or broadcasting this will dictate what varieties you plant and how many species you include in your blend. Will you do any land preparation such as applying herbicides ahead of planting, aerating and tillage, or apply fertilizers at start. All of these things can dictate which species and varieties you including in your blend based on how the characteristics of those varieties and species fit the practices you plan to use.



Varieties and Blends

Summer Annuals – An ideal summer annual blend is usually a combination of grasses and grass hybrids and legumes. Some of the most common grass/grain varieties are sorghum-sudan grass, sudan grass, forage sorghum, pearl millet, and crab grass. Legumes used are typically things like sun hemp, vetch, and cow peas. Many blends also include forage turnips and sunflower. Although summer blends can have very high nutritional value caution should be used when grazing them in hot and dry conditions because of the build up of nitrates that can lead to nitrate toxicity.

Winter Annuals – An ideal winter annual blend will consist of 2-3 small grains like oats, cereal rye or triticale of which numerous varieties exist for various situations. Consult the UF/IFAS Small Grain Program for yearly forage variety recommendations. They also include 1-2 legume species such as clovers and peas of which varieties exist for a wide range of environmental conditions. Finally including 1-2 species of brassicas like mustard or daikon radish provide an additional source of forage protein and soil health benefits. A blend like this should provide you season long grazing while requiring minimal inputs and creating soil health improvements.

Planting Methods

Land Preparation – Planting into perennial pastures can be difficult because you are planting directly into a well-established competing crop making how we prepare these pastures very important. When planting winter annuals grazing off perennial pasture low and waiting until dormancy is the simplest approach. However, this could lead to difficulty in hitting the ideal timing for planting annuals in the fall/winter. Many producers may utilize other equipment such as aerator or disk to lightly disturb the perennial grass to slightly reduce competition with the winter annuals they are planting. Another option is to apply a very low rate of herbicide to stunt or bring on early dormancy in perennial grass that allows for better germination and growths in winter annuals.



This isn't an option for summer annuals as we are also relying on our perennial grasses as a forage at this time.

Planting Equipment – Also using equipment like a no-till drill or a plant-o-vator can allow you to plant into these perennially pastures with more success and less preparation. Essentially these pieces of equipment create a very small prepared seed bed to plant into compared to a conventional drill or broadcasting which rely on the seed bed present when planted. For summer annuals using a piece of equipment like a no-till drill or a plant-o-vator are essential to have a successful summer annual forage. Conventional drills and broadcasting do not give the annuals an advantage over the perennial grasses like the no-till drill or plant-o-vator. Choosing the right combination of land preparation techniques and equipment can make a substantial difference in the performance of annual forages.

Fertilization and Grazing Management

For summer annuals apply 30 lbs. of N/acre and 50% of the soil test recommended rate of Phosphorus and Potassium. Apply 50 lbs. of N and the remaining Phosphorus and Potassium. If intercropping in perennial grass pasture during the growing season the recommended fertilization rates for that forage should be sufficient for summer annuals. See EDIS: Fertilizing and Liming Forage Crops.

For winter annuals fertilization is usually based on soil test recommend rates for phosphorus and potassium. With the inclusion of legumes nitrogen fertilizer is typically not recommended. However, many producer apply 40 lbs. of nitrogen at planting to provide nitrogen until legume nitrogen fixation has started. See EDIS: Winer Forage Legume Guide.