



Annual Legumes

Common annual legumes adapted to the Southeast include both cool-season and warm-season species:

- **Cool-season species:** hairy vetch, arrowleaf clover, ball clover, berseem clover, and crimson clover
- **Warm-season species:** cowpea, sunn hemp, striate lespedeza, and Korean lespedeza

COOL-SEASON SPECIES

ARROWLEAF CLOVER

Arrowleaf clover is characterized by nonhairy, arrow-shaped leaves with a V-shaped white water mark. Its flower becomes tinged with pink or purple as it matures. It requires pH ranging from 5.8 to 6.5. The planting window is late September through early November. The recommended seeding rate is 5 to 10 pounds PLS per acre of inoculated seeds and the seeding depth is $\frac{1}{4}$ to $\frac{1}{2}$ inch.

For all legumes it is crucial that the inoculant is still active. If the information on the seed bag indicates the inoculation date has expired, the seed should be reinoculated before planting. It can be planted with other cool-season forages. The peak of production occurs in early April through May, and crude protein ranges from 16 to 20 percent. Recommended stubble height is 4 inches. When harvesting for hay, cut at bloom stage.

BALL CLOVER

Ball clover (figure 27) has nonhairy leaflets, white flowers, and late maturity. It is widely adapted and can tolerate poor drainage. The recommended seeding rate is 2 to 3 pounds PLS per acre and seeding depth is $\frac{1}{4}$ to $\frac{1}{2}$ inch. Peak of production ranges from late March through May and can be managed for reseeding under grazing. Crude protein ranges from 16 to 20 percent.



Figure 27. Ball clover is widely adapted and can tolerate poor drainage.



Figure 28. Berseem clover



Figure 29. Crimson clover.



Figure 30. Red clover

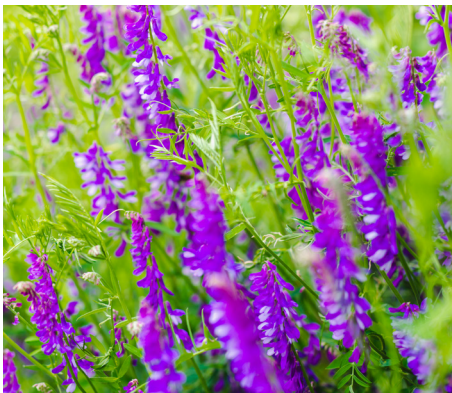


Figure 31. Hairy vetch.

BERSEEM CLOVER

Berseem clover (figure 28) has oblong leaflets and yellowish-white flowers. The optimal soil pH is 7.0 or higher, and it is adapted to loam soils. The recommended seeding rate ranges from 12 to 18 and 2 to 2.5 pounds PLS per acre for broadcasting and drilling, respectively. Seeding depth should be $\frac{1}{4}$ to $\frac{1}{2}$ inch. Recommended stubble height is 4 inches. Crude protein ranges from 18 to 24 percent and is a great choice to use in a mixture with other cool-season species due to high protein content.

CRIMSON CLOVER

Crimson clover (figure 29) has pubescent leaves and stems and crimson flowers. It requires well-drained soils and does not tolerate calcareous soils. The recommended seeding rate is 20 to 30 pounds PLS per acre and seeding depth is $\frac{1}{4}$ to $\frac{1}{2}$ inch. The peak of production occurs from March through April.

This clover can be used for grazing or hay production with a stubble height of 4 inches. Crude protein typically ranges from 16 to 20 percent and digestibility can be up to 80 percent.

RED CLOVER

Red clover (figure 30) is a biennial or short-lived perennial. It grows best on well-drained loamy soils with a pH of 6.0 or higher, but it can tolerate less well-drained and moderately acid soil.

Red clover is used as a winter annual in the Deep South. It is productive for one year in central and southern Alabama but may remain productive in a second year in the Black Belt region. The recommended seeding rate is 6 to 15 pounds PLS per acre and seeding depth is $\frac{1}{4}$ to $\frac{1}{2}$ inch.

Red clover is low yielding in February through March compared with other legumes. It has the potential to provide a substantial amount of good-quality forage in late spring into the summer. It is quick growing, easily established, and provides a source of nitrogen and high-yielding forage rich in protein. It can be planted with small grains and other forage grasses as a companion crop and be overseeded into warm-season sods.

HAIRY VETCH

Hairy vetch (figure 31) is winter hardy and requires well-drained, fertile soils with optimal pH ranging from 6.0 to 7.0. The recommended seeding rate is 15 to 20 pounds PLS per acre and the seeding depth is $\frac{1}{2}$ to 1 inch. The planting window is late August through October, and it can be planted in a mixture with other cool-season forages. It can be managed under grazing or single-cut hay production. Peak production of hairy vetch is in late March through late April/May.



Figure 32. Cowpea.



Figure 33. Sunn hemp



Figure 34. Striate lespedeza

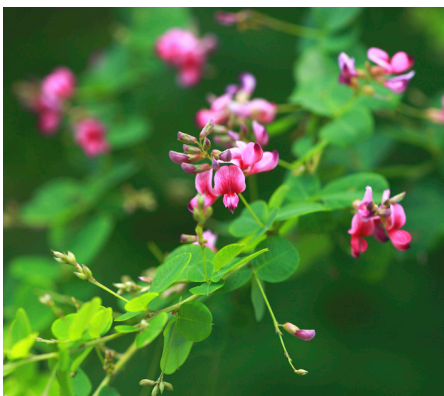


Figure 35. Korean lespedeza.

WARM-SEASON SPECIES

COWPEA

Cowpea (figure 32) is well adapted to growth under relatively dry conditions. Planting dates vary from mid-March for spring planting to late August for fall planting. Growers are typically advised to wait to plant until soil temperatures reach 60 degrees Fahrenheit. The recommended seeding rate is 30 to 40 pounds PLS per acre, the seeding depth $\frac{3}{4}$ to $1\frac{1}{4}$ inch, and row spacing 30 or 36 inches.

Due to its adaptability, cowpea can be grown in relatively poor soil. It does not tolerate grazing well; therefore it is recommended for use in mixtures with warm-season annual grasses that are intermittently grazed (e.g., pearl millet, sorghum \times sudangrass).

SUNN HEMP

Sunn hemp (figure 33) is a warm-season annual legume that can grow up to 6 feet tall. It tolerates drought and relatively low-fertility soil. The optimal soil pH ranges from 5.0 to 8.4. Sunn hemp grows best in sandy, well-drained soils and should be planted into a prepared seedbed when soil temperature has reached 65 degrees Fahrenheit. Sunn hemp works well in mixtures with warm-season annual grasses such as pearl millet and sorghum \times sudangrass.

The recommended seeding rate is 25 to 30 pounds PLS per acre and seeding depth is $\frac{1}{4}$ to 1 inch. Biomass accumulates in a substantial quantity between 30 to 60 days after planting, when plants reach 6 feet.

Start grazing around 45 days after planting, when plants are around $1\frac{1}{2}$ to 3 feet tall. The recommended stubble height remaining after grazing is 12 to 18 inches.

STRIATE LESPEDEZA AND KOREAN LESPEDEZA

Both striate annual lespedeza (*Lepedeza striata*) (figure 34) and Korean lespedeza (*Lepedeza stipulacea*) (figure 35) have shallow taproots and pink flowers. Optimal soil pH ranges from 5.5 to 6.0. Plant these from March to May at a recommended seeding rate of 15 to 40 pounds PLS per acre. Crude protein normally ranges from 12 to 15 percent with TDN from 50 to 55 percent.

Striate and Korean lespedezas grow well with cool-season bunch grasses, such as tall fescue, but require adequate management. Striate lespedeza exhibits narrower leaflets, and its flowers and seeds are borne in leaf axils, whereas Korean lespedeza flowers and seeds are found at the ends of stems.

The prostrate growth pattern of striate lespedeza makes it better suited for grazing over hay production. Korean lespedeza is more drought tolerant and is susceptible to bacterial wilt and tar spot, which can result in summer leaf loss and thinned stands. Korean lespedeza is less competitive than striate lespedeza with companion grasses.