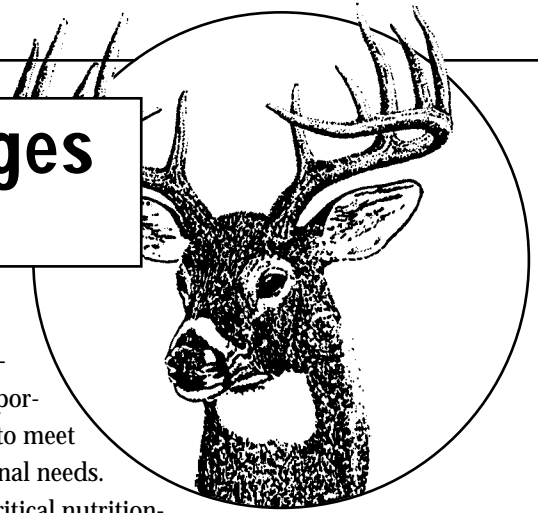


Planting Warm-Season Forages for White-Tailed Deer



The white-tailed deer is the most popular big game animal in the country. It is also one of the most plentiful, with more than 30 million in the U.S. Annual harvests in North America increased from 2 million deer in 1978 to more than 5.3 million in 1994. Certain regions (including the Southeast) are facing overpopulation problems.

Overpopulation damages forest regeneration and agricultural crops and increases deer-vehicle collisions and disease. Annual U. S. damage may be as high as \$1 billion or more.

Overpopulation creates unhealthy deer herds because of inadequate food supplies and can reduce health and abundance of native plant communities. Plant communities, which provide staple deer browse foods like vines, forbs, woody plant leaves, and twigs, decline over time from overbrowsing.

Deer herd health, including fawn production, body weight, and antler development, depends on good nutrition, age, and genetics. Nutritional requirements, including adequate protein and mineral levels, must be met through adequate habitat management. Habitat management involves proper manipulation of commercial forestland and agricultural crops. Management of native vegetative species, from forbs (weeds) to mature trees, impacts habitat quality more than any food planting or supplemental effort.

As an example, timber clearcuts, if planned, harvested, and reforested properly, can provide diverse habitat edges, excellent escape cover, and large quantities of nutrient-rich forage/foods as they grow back into young forests. Small, irregularly-shaped harvest cuts with streamside management zones (strips of timber left along drains) provide excellent habitat if these areas are part of a mix of habitat types. Depending on initial tree spacing and site quality, areas that are replanted to pine trees may provide good forage production for 3 to 7 years, and even longer for hardwood regeneration areas. Forage production eventually declines as the amount of sunlight reaching the forest floor declines. Later in the forest cycle, with proper fertilization, pruning, thinning, and other timber stand treatments, these areas can again provide excellent habitat.

While native vegetation management has a much greater potential to increase total deer forage production than food

plantings, plantings may be important seasonally to meet specific nutritional needs.

The two most critical nutritional times annually for white-tailed deer are late summer, when deer population levels are high and native food quality is low, and late winter, when forage quality and quantity is low and mast (fruit) from oaks and other trees is scarce.

Research has indicated that if at least 1 percent of an area is planted to year-round cool- and warm-season forages, the plots can positively affect the nutritional plane and quality of whitetails. Cool-season forages can aid hunter harvest and improve deer condition, but the benefits of warm-season forage management are often overlooked. Planting summer forages may be as important as planting cool-season forages, since antler growth, fawn production, and initial rearing take place then. Therefore, both bucks and does face special nutritional demands. Seasonal comparisons indicate deer eat the most food in late summer. We know that deer use of warm-season plantings declines from highest in March to lowest in early June. Use increases in late June, peaks in August, then declines slowly through September.

Warm-season food plot planning requires careful thought and on-the-ground evaluation. Existing openings like pipeline and transmission line rights-of-way, abandoned secondary roads, and firelines can provide economical locations for food plots. Carefully plan and consider equipment needs and access points, soil quality, fertilization or liming requirements, size and distribution of plots, seedbed preparation, and choice of planting materials. Landowners should approve planting locations. Designate enough planting sites $\frac{1}{2}$ to 3 acres in size to plant 1 to 2 percent of the managed area. Make plots long and narrow, but do not exclude sunlight from plots in forested areas. Evenly distribute warm- and cool-season plantings by dividing plots and planting half to each type, or at least distribute both food types evenly across the area.

The abundance and condition of wildlife are related directly to soil fertility. Soil fertility may vary widely on a given area, with higher fertility generally being found near

drainages and in low areas. These are locations which, if available for planting, will produce the best warm-season forage plots, since they are both fertile and generally hold moisture better during the summer months. Initially, conduct a soil test for each new food plot location. Your Extension Service office can provide soil test kits and soil analysis. Soil test results will be tailored to give the fertilization and lime requirements for each planting material specified for use. Proper fertilization will dramatically increase forage produce and is critical to deer use. Liming, if recommended, will bring the pH up and dramatically increase the efficiency of fertilizer and forage production. To be effective at the time of seed germination, lime generally requires application 3 months before seed planting. Legume seeds must be treated with the proper inoculant at the time of planting and will produce their own nitrogen.

Plant and manage forage with a farm tractor and 5-foot wide implements including a disk, broadcast seeder/fertilizer distributor, and mower. A harrow, 2-row planter, and a hand and/or electric seeder are also useful. Plots should be limed, disked, and allowed to settle before planting. Broadcast seeding increases seeding rate over similar drilled crops. Most seeds should be lightly covered with a harrow or by dragging a heavy timber, log chain, or piece of chain-link fence over the plot. Frost planting, or overseeding crops such as red or arrowleaf clover, birdsfoot trefoil, or winter hardy forage oats over closely mowed or grazed vegetation in late winter can be effective and inexpensive. Frozen ground allows seeds to contact and germinate in mineral soil.

Choices for warm-season deer plantings are limited compared to the many cool-season favorites. However, several meet criteria of spring-summer production, resistance to overbrowsing, high protein levels, and digestibility to deer. The best choices for the Southeast include Alyceclover, cowpeas, jointvetch, Lab Lab, and soybeans. Alyceclover is a legume that produces forage through the early fall. It produces abundant forage and withstands browsing pressure better than most of the other choices. Plant it with cowpeas, another favorite warm-season annual legume, to help prevent overbrowsing of the peas. Cowpea varieties such as Catjang, Iron-clay, Tory, and Wilcox have a wide soil tolerance and grow well with a pH as low as 5.5.

Large plots tend to withstand deer pressure best. The same is true of soybeans, a favorite annual legume for deer plots. Soybeans may be 40 percent protein, and deer readily use both the green leaves and beans. Unfortunately, small plots and high deer densities may leave a field of "stems" after deer find them, and thus they are useful for only a lit-

tle while. Corn, another favorite, is planted as a general crop for deer, doves, turkeys, and other animals. While not accurate to call it a summer forage, the grain matures in around 90 days, making it available mid-to-late summer. It is more important as a food resource during fall and winter, and while low in protein, it provides a good source of carbohydrates and energy. Thus, it is an important food to develop energy reserves in the fall deer herd.

Plant peas with corn at the final cultivation and fertilization to help control weeds and add much needed nitrogen. Jointvetch is a fern-like appearing plant that is adapted to moist soils. It may reseed if disked the following spring, and since it is a legume, it does not require nitrogen fertilizer. Lab Lab, a relative newcomer to the deer forage scene, is planted in the spring as are the others we have discussed. Lab Lab differs in that it is very drought tolerant and is used widely in arid climates.

Another forage to plant is Forage Brassica (rape). There are several varieties of these leafy plants. They are highly attractive to deer, average 30% or more protein, and may be available commercially in blends with Chicory and Plantain.

It can be important to document deer use of summer plots. To do this, exclosures of 3 inch wire formed into a tube 2 to 3 feet in diameter and 6 feet high can be staked to the ground on selected food plots to estimate deer use. Some forages, such as Alyce clover, hold up better to deer browsing pressure than others. Plant soybeans or peas with these types of forages to ensure adequate stands, particularly if 2 acres or smaller.

Following are recommendations for some of the common warm-season forages. Ladino clover, although it is a cool-season forage and normally planted in the fall, is included because it produces abundant forage through the summer months and, in some years, may provide a near year-round forage resource. In contrast to most cool season forages, summer forages may need herbicides to control competition.

Alyceclover

Description: A warm-season legume that provides forage in the summer and early fall. Especially important to white-tailed deer as one of the few warm season forages that hold up well to browsing.

Soil Adaptation: Most moderate to well-drained soils, including bottomland sites.

Fertilization: Apply according to soil test or apply 200 lbs./acre of 1-14-14 after planting is established.

Lime Requirements: Apply according to soil test or

apply amounts necessary to bring pH to 6.5-7.0.

Planting Dates: May 1 - June 15

Planting Rate: Inoculate seed. Broadcast 15-20 lbs./acre or drill 16 lbs./acre

Soil Preparation: Disk and plant in a firm seedbed.

Companion Plants: Plant with forage cowpeas and/or jointvetch. Reduce seeding rate to 10 lb./acre when planting combinations.

Ladino Clover

Description: A cool-season annual legume. A very popular clover for providing deer forage, and foliage and insects for quail and turkey.

Varieties: Osceola, Tillman, Regal, Louisiana S-1, and California

Soil Adaptation: Fertile, bottomland, moist soils.

Fertilization: Soil tests are recommended or use 300 lbs./acre of 0-20-20.

Lime Requirements: Apply according to soil test or use amounts necessary to maintain a soil pH of 6.5.

Planting Dates: September 1 - November 15.

Planting Rate: Requires white clover inoculant. Drill 3 lbs./acre at 1/4 inch or broadcast 4 lbs./acre and cover 1/2 inch.

Soil Preparation: Plant in a firm seedbed. In wet areas, broadcast and lightly disk in seed and fertilizer.

Companion Plants: Ryegrass, cool-season, annual small grains, and vetch. Reduce planting rate to 2-3 lbs./acre broadcast when planting combinations.

Management: Re-seeding can often be enhanced by fall disking or mowing and fertilizing at the rate of 40 lbs./acre of 0-20-20.

Cowpeas

Description: A warm-season annual legume. Browsed by deer and rarely eaten by doves, but heavily used by turkeys and quail.

Varieties: Varieties are Thorsby Cream, Tory, Wilcox, Iron Clay, and Catjang.

Soil Adaptation: Well-drained soils, from sandy loams to heavy clay soils.

Fertilization: A soil test is recommended, or use amount required to maintain a soil pH of 5.5-7.0

Planting Dates: May 1 - July 1

Planting Rate: Plant 15 lbs./acre in 24-36 inch rows or broadcast 25 lbs./acre and cover 1 inch. Inoculant required.

Soil Preparation: Plant in a firm seedbed.

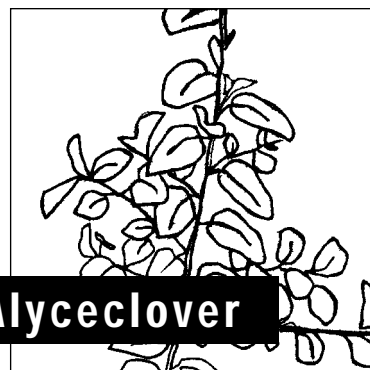
Companion Plants: Other warm season annual peas, Alyce Clover, and Brown Top Millet. Reduce planting rate to 12-15 lbs./acre broadcast when planting combinations.

Soybeans

Description: A warm-season annual legume. Provides food and cover for rabbits, turkeys, quail, doves, and ducks. Browsed heavily by deer in early stages of growth.

Varieties: There are hundreds of varieties; re-seeding varieties such as Bobwhite and Quailhaven have been researched at the Natural Resources Conservation Service Plant Materials Center in Coffeerville, Mississippi. Select "forage" type varieties for best performance.

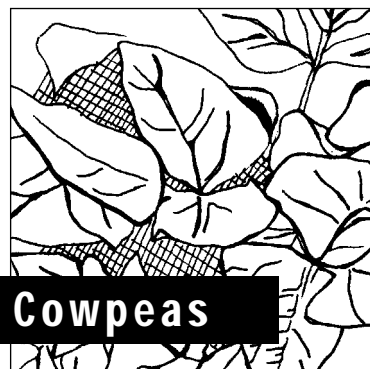
Soil Adaptation: Well drained, medium-textured soils such as sandy loams and



Alyceclover



Ladino Clover

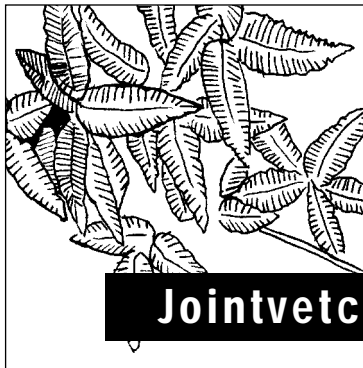


Cowpeas

For more information on wildlife food plantings, check out the Mississippi State University Web Site ext.msstate.edu and look up publications entitled "Wildlife Food Planting Guide to the Southeast" and "A Guide to Sources of Conservation and Wildlife Food-Planting Materials." Order the Food Planting guide and other wildlife-related publications from MSU-Extension Service/Department of Wildlife and Fisheries, Box 9690, Mississippi State, MS 39762.



Soybeans



Jointvetch

clay loams.

Fertilization: A soil test is recommended or use 300 lbs./acre of 0-20-20.

Lime Requirements: Apply according to soil test or use amounts required to maintain a soil pH of 5.8-7.0.

Planting Dates: May 1 - June 1

Planting Rate: Plant 30 lbs./acre in 24-36 inch rows or drill 30 lbs./acre at 10 inch row spacing or broadcast 50 lbs./acre and cover $\frac{1}{2}$ inch; inoculant required.

Soil Preparation: Plant in a well disked, firm seedbed.

Companion Plants: Corn. Reduce planting rate to 30-35 lbs./acre broadcast when planting combinations.

Management: If planted for waterfowl, remember that non-reseeding variety seeds will spoil in 30 days after flooding. Also, waterfowl do not utilize the protein in soybeans very efficiently, even though they readily consume them. Plant large plots in areas with high deer densities, or plots will be overbrowsed quickly.

Jointvetch (Deer Vetch)

Description: A warm-season annual, re-seeding legume. Provides excellent forage for deer and succulent foliage and seeds for dove, quail, and turkeys. Will grow on wet sites and can be flooded 18-24 inches for ducks.

Soil Adaptation: Moist and wet, light-textured soils. Do not plant in sandy soils.

Fertilization: A soil test is recommended or use 300 lbs./acre of 0-10-20.

Lime Requirements: Apply according to soil test or apply amounts necessary to keep a soil pH of 5.5-6.5.

Planting Rate: Broadcast 8-10 lbs./acre and cover $\frac{1}{2}$ inch; inoculation required.

Soil Preparation: Plant in a well disked, firm seedbed.

Companion Plants: Warm-season perennial grasses.

Management: Re-seeding can be enhanced by spring disking; reapply 200 lbs./acre of 0-10-20. Not very competitive – may require preplanting herbicide application.



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By **Dean Stewart**, Extension Associate, Department of Wildlife and Fisheries

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