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FOOD PLOTS FOR DEER ON CRP PINE AND OTHER SITES

Michael T. Mengak, Ph.D., CWB

Quality deer management includes quality bucks, does, and fawns. But there is more. Quality deer management involves quality habitat, healthy deer herds, and quality hunting or viewing experiences. A quality deer herd, in balance with the habitat, provides many benefits to landowners and other wildlife species.

A quality deer management program should include good record keeping, accurate assessment of herd size and health, proper harvest levels and vegetation management. Native vegetation management has the greatest potential for positive economic gain and improvement in deer herd health. In many cases this can be accomplished with thinning and prescribed burning of pines. However, in many cases, agronomic food plots can supplement native vegetation management and produce improvements in deer hear health and condition.

Recent legislation like the Farm Bill (Food Securities Act) provides monetary incentives to landowners who manage and maintain portions of their land holdings in permanent cover including pines. One program, Conservation Reserve Program (CRP), is often used by landowners to enhance their lands and provide income opportunities. This paper will cover some of the basics of establishing food plots in conjunction with CRP pine to enhance wildlife conditions and improve deer herds.

As a rule of thumb, to have a significant impact on wildlife habitat and carrying capacity, 10% of the land area should be maintained in food plots. But rarely can a landowner afford to dedicate this much land to food plots. However, even a few properly placed and properly maintained high quality food plots (as little as 1% of the land) can improve wildlife habitat or increase carrying capacity. Food plots should be integrated into a broad plan to improve and maintain suitable wildlife habitat. In addition to food plots, other management techniques might include thinning timber, prescribed burning, rotational disking, fallow field management, herbicide application, and timber harvest. Supplemental feeding, feeding stations, mineral supplements or baiting is not recommended. These practices can concentrate deer and other wildlife in unnaturally high numbers. This facilitates the spread of disease and degrades habitat due to over concentration of wildlife.

For landowners who want to supplement their management activities with food plots, the options can be overwhelming. Just as you would not hunt quail with your favorite deer rifle, a manager should not try to have just one food plot species. Greater success can come from multiple food plots with multiple plantings. A deer manager (or hunter)

Wildlife Outreach Specialist, D. B. Warnell School of Forestry and Natural Resources
University of Georgia, Athens, GA 30602 USA

embarking on a food plot program faces a number of up-front decisions such as how much money to spend? How much time should be spent working on the food plots? Should I use warm season or cool season plants, annual crops or perennial plants? Usually, the best plan is to include a variety of each.
Other factors to consider include access to food plots, equipment needs and availability, soil fertility, distribution of the food plots, and protection from poachers. Managers can use existing openings like powerline rights-of-way, or logging roads, log loading decks, fire lanes, and areas where pines were thinned in a harvesting operation.

In order to improve the opportunities for harvesting deer, a ½-acre plot planted cereal grains or succulent greens a month prior to the hunting season is all that one might need. However, for a sustained quality deer management program that includes a year round food plot rotation, you will need much more than one temporary annual cool season plot.

At a minimum, you should designate and manage 1 to 2 percent of your area in high quality food plots and many experts advise keeping up to 5% of the area as food plots. Plots that are long and narrow with easy access to escape cover are most heavily used by deer. Distribute the plots over the entire property. Food plots should be ½ to 3 acres in size and generally twice as wide as the height of the surrounding trees. However, this can be modified by the direction the food plot faces, the overall basal area of the forest, and the landowner objectives. Food plots should be irregularly shaped if possible. Space them about ¼-mile apart across your property. Avoid locations near public roads or property boundaries in order to avoid trespass and poaching problems.

The first thing you will need is a soil test through your local County Cooperative Extension Office. You should have an idea of the plant or plants you want to grow because this will influence the lime and fertilizer recommendations supplied by the soil test lab. A soil test will cost around five dollars per sample. One composite sample from each food plot should be adequate in most cases.

Have the soil test done about three months or more prior to planting because you will likely need lime and it takes lime about this long to dissolve and begin raising the soil pH. A good rule of thumb is that it takes about one ton of lime per acre to raise the soil pH by one-half a point. (For example, it would take a minimum of 2 tons of lime per acre to raise the soil pH from 5.5 to 6.5). It is extremely important to have your soil tested. Your county agent can help interpret the results.

Low pH (acidic) soils (< 5.0) will supply nutrients [Nitrogen (N), Phosphorus (P), Potassium (K), Calcium (Ca), Magnesium (Mg)] to plants but at low levels. On a soil with a pH of 5.0 to 4.5, 80% of the N, P, and K fertilizers are wasted because plant roots can not take up the nutrients in the soil at such a low pH value. Similarly, important soil nutrients such as zinc, manganese, and iron are unavailable or toxic to plants if the pH is acidic.

There are several forms of lime available for use in food plots. Powdered and pelletized forms are frequently used. A large spreader truck or special pull type spreader is required with powdered lime so access and good roads are critical. A good rule of thumb is to apply 2 tons of lime per acre every three years. A better rule is to have the soil tested regularly. Clay soils typically require more lime than sandy soils but sandy soils require more frequent applications.

A balanced fertilizer mix such as 13-13-13 or 10-10-10 is often recommended. The numbers refer to the percent of each of three critical nutrients (N-P-K) that are supplied in the fertilizer. The first number is nitrogen (critical in non-legume plants for the production of proteins, DNA, and enzymes). The second number is phosphorous (as P_2O_5) (critical to cells for energy conversion both in plants and animals). The third number is potassium (as

K_2O) and is a critical element used to balance the water in cells and for muscle function and heart and kidney function in animals. The recommended amount of each of the three primary nutrients can vary based on soil fertility and plants to be grown. Typical application rates are much lower than liming rates. Fertilizer is usually applied as a few hundred pounds per acre compared to a few tons per acre for lime. Keep in mind that 200 lbs/acre of 5-10-10 is equivalent to 100 lbs/acre of 10-20-20.

To demonstrate how this works remember that the numbers represent the percentage of each nutrient in the fertilizer. One hundred pounds per acre of fertilizer with 5% nitrogen delivers 5 lbs/acre of nitrogen. Likewise, one hundred lbs/acre of fertilizer with 10% phosphorous delivers 10 lbs/acre of phosphorus.

Many plants species and varieties are available for use in food plots. Most plants can be planted alone but often mixtures supply more variety of food choices to deer in less land area. Many plants are sold in mixtures by local feed and seed stores, seed companies and others. Or you can purchase seeds locally and create your own mix. There is no single plant, single variety, or single mix that will meet everyone's needs. The most important thing is to maintain a variety of plants species – both in food plots and natural vegetation - and a deer herd that is in balance with the food resources. Food plots can be an important part of an overall deer management program. Food plots are not – by themselves – a management program. They are only a tool.

Finally, a landowner must consider the costs of establishing and maintaining a food plot program. Considering the cost of the soil test, lime, fertilizer, herbicide, and seed, a good food plot will cost around $150 to $200 per acre or as much as $300 per acre. This does not include costs for fuel or equipment. It is assumed the landowner or hunter will perform the work.

Table 1 lists common agricultural plants often planted in food plots and grouped by growing season. Table 2 lists planting dates, seeding rates, soil characteristics, plant tolerance (shade, drought) ranges and other important information for selected plants commonly used in food plot programs.

Table 1. Common agricultural plants often planted in wildlife food plots.

Common Warm Season Annual Legumes
Cowpeas (Iron clay is a common variety)
Soybeans
Alyceclover
American jointvetch (Aeschynomene)
Partridge Pea
Lablab

Other Warm Season Forages
Corn
Buckwheat
Millet (Pearl or Browntop)
Grain Sorghum
Egyptian wheat
Sunflower
Chufa
Sesame

Common Cool Season Legumes
Austrian winter peas
Crimson clover
Arrowleaf clover
Hairy vetch
Red clover
White clover (Durana or Regal Ladino)
Subterranean clover
Alfalfa

Other Cool Season Forages
Winter rye
Annual Ryegrass
Wheat
Oats
Triticale
Chicory
Brassicas (rapes and kales)

References

Buntin, David and Barry Cunfer. 2000. Southern small grains: Resource management handbook. University of Georgia - Cooperative Extension Bulletin No. 1190.

Harper, Craig. 2000. Planting chart for wildlife food plots in Tennessee. University of Tennessee, Agricultural Extension Service SP 550-A

Lee, Dewey and Robert Stewart. 1997. Pastures in Georgia. University of Georgia - Cooperative Extension Bulletin No. 573.

Kammermeyer, Kent, Karl V. Miller, and Lindsay Thomas, Jr. 2006. Quality Food Plots - Your guide to better deer and better deer hunting. QDMA, Watkinsville, GA. 310 pages.

Table 2. Characteristics of selected plant commonly used in wildlife food plots. Food plot information was obtained from a variety of published sources; see references for a complete list and additional information on wildlife food plots.

Plant Species	**Planting Date**[@]	**Seeding Rate Lbs/Ac**	**Best Soils for Planting**	**pH**	**Shade Tolerance***	**Drought Tolerance***	**Crude Protein (%)***	**Notes**
American jointvetch	May 1 to Jul 31[1] Apr 15 to Jul 4[2] Apr 1 to Jun 30[3] May to July[4] May to June[5] Apr to Jun15[6] Mar 1 to Jun 1[7]	20 to 30	Poorly drained or wet; tolerates wet, relatively infertile soil	5.8 to 6.5	Good	Poor – drought sensitive ---------- Tolerates wet soils		Fertilize: 400 lb/ac 0-10-20[2] 300 lb/ac 10-10-20[5] 250 lb/ac 20-5-10[6] 300 lb/ac 0-10-10[7]
Chufa	May 15 to Jun 30	30 to 40 if broadcast ---------- 20 if row planting	Sandy loam and best on sites that have not been cultivated or planted	5.0 to 7.5	Poor	Moderate		Plant on plots 1 acre or larger ONLY ---------- 300 – 400 pounds of 10-10-10 fertilizer
Clover, Crimson	Sep 1 to Oct 31	10 to 20	Well-drained soil	5.7 to 6.5	Moderate to Good	Moderate	20 to 30	Good cold tolerance 15% loss of yield with 40% shade[3]
Clover, Ladino White	Sep 1 to Oct 15	3 to 8	Moist bottoms and fertile uplands	6.5 to 7.0	Good	Good	16 to 28	Tolerates wet conditions and cold
Clover, Red	Aug 15 to Oct 15	10 to 20	Well-drained, fertile	6.2 to 7.0	Good	Low to Moderate	12 to 16	High cold tolerance Intolerant of flooded soils
Cowpeas	After last frost	30 to 90	Sandy loam to loam	5.5 to 7.0	Very low	Good	20 to 30	Grows well in hot weather
Millet, Browntop	Apr 1 to Jul 1	25 to 30	Almost any upland or bottomland soil	5.5 to 6.5	Low	Good	10 to 20	Tolerant of acid soil[3]

Plant Species	Planting Date[@]	Seeding Rate Lbs/Ac	Best Soils for Planting	pH	Shade Tolerance*	Drought Tolerance*	Crude Protein (%)*	Notes
Oats	Sep 15 to Oct 31	80 to 100	Sandy loam to clay loam	6.0 to 7.0	Poor to Fair	Fair	8 to 10	Killed by frost; not winter hardy
Rye	Sep 15 to Nov 15	85 to 100	Sandy to clay	5.6 to 6.0	Fair to Good	Most drought resistant of the cereal grains[8]	10 to 20	More winter hardy than other cereal grains
Ryegrass, Annual	Aug 1 to Oct 15	20 to 40	Clay loam; best on fertile soil	6.0	High shade tolerance	Moderate Drought tolerance	15 to 20	Moderate cold tolerance
Grain sorghum ---------- Egyptian Wheat	Apr 15 to Jul 15	20	Well drained, fertile; clay loam	Must be over 5.8	Fair	Good		
Soybean	May 1 to Jun 30	50 to 100	Bottomland and deep loam	5.8 to 6.5	Fair	Fair	20 to 30	
Wheat	Sep 15 to Nov 15	90	Loams & Clays	6.0 to 6.5	Poor to Fair	Fair	15 to 25	Good cold tolerance

References:
[1] Yarrow and Yarrow. 1999. Managing Wildlife. Alabama Wildlife Federation. Page 125.
[2] Yarrow and Yarrow. 1999. Managing Wildlife. Alabama Wildlife Federation. Appendix E – page 485.
[3] Ball, Hoveland, and Lacefield. 1996. Southern Forages, 2nd Edition. Potash & Phosphate Institute, Norcross, GA, Page 228.
[4] Pennington Seed Company. 2003. Guide to successful wildlife food plots. www.peningtonseed.com. Page 6.
[5] Castle and Spencer. March 2002. Supplemental warn season plantings for white-tailed deer. MS Dept. Wildlife, Fisheries and Parks. www.mdwfp.com/level1/wildlife.asp?article=36&submit=Go&subject=Deer
[6] Fears. 1999. Planting for Wildlife – Progressive Farmer. Birmingham, AL. Page 9.
[7] Causey. 2001. White-tailed deer nutrition: spring and summer food crops. Wildlife Trends. Volume 1, Issue 4, Page 2.
[8] Buntin and Cunfer. Editors. 2000. Southern Small Grains Resource Management Handbook. UGA Cooperative Extension Bulletin 1190. p. 71.

Footnotes:

[*] Missing values indicate that no information was available for the plant.
[@] Planting dates are for USDA Zone 2 or Temperature Zone B in Ball, Hoveland and Lacefield book.

Warnell School of Forestry and Natural Resources
Athens, Georgia 30602-2152
Telephone 706.542.2686 Fax 706.542.8356