

QDMA Articles :

Summer Nutrition

By: Kip Adams

All deer managers realize that deer have critical nutrient requirements in autumn. Bucks are gearing up for the rut and does and fawns are adding fat for winter. While autumn nutrition is important, spring and summer nutritional needs should not be overlooked. Spring and summer are critical times for body growth, antler growth, gestation (pregnancy), lactation, fawn development, and fat deposition. Managers must understand these seasonal requirements and tailor their nutritional programs to meet these needs.

Spring

Spring forage is critical for whitetails since adults can lose 15 to 30 percent of their body weight during winter. Rigors of the rut and winter take their toll on bucks and they are second only to fawns to succumb to winter mortality. Bucks begin growing new antlers in spring, but antler growth is secondary until body resources lost in winter are replenished.

Whitetails have a relatively long gestation (about 200 days) and does have increased nutritional demands during spring. Although breeding occurs during autumn, over 80 percent of fetal growth and 90 percent of the energy spent on gestation occurs during the final trimester. In northern regions, new antler growth and the last trimester begin in April and correspond to spring green-up.

Spring foods high in protein and energy are necessary to meet the increasing nutritional demands. Spring foods include green leaves and stems of woody and herbaceous plants, leftover mast, forbs, and legumes. In northern regions, preferred deciduous woody plants include red, white and black oak, yellow and white birch, and red maple. Preferred herbaceous plants include Canada mayflower, raspberry, and blackberry. Preferred mast includes acorns, beechnuts, apples, crabapples, grapes, and blackberries. Preferred forbs and legumes include chicory, clover, alfalfa, and trefoil.

Summer

Fawns are born as spring turns to summer. Does now require even more nutrition as lactation is two to three times more costly than gestation. Their nutrient-rich milk contains about 78 percent water, eight percent fat, eight percent protein, five percent sugar, and one percent ash, and has twice the protein and energy per unit volume as cow's milk. Undernourished does still produce nutrient-rich milk but at reduced rates. Well-nourished does with twins generally produce 67 percent more milk than does with single fawns.

Fawns have very high energy demands. They weigh five to 10 pounds at birth, will double their weight within two weeks, and can triple it within a month. Fawns depend heavily on their mother's milk for nutrition the first two to three months but can survive exclusively on vegetation by around two months of age.

Maximum antler growth occurs during summer and is directly linked to nutrition. Bucks with

access to high-quality nutrition have significantly larger antlers than those on poor quality diets. Minerals are also important for antler growth. Hardened antlers consist of 54 percent minerals, 45 percent protein, and one percent fat. Calcium and phosphorus are the most abundant minerals and occur in a 2:1 ratio. Deer get calcium and phosphorus from their diet and from reserves in their bones. Bucks store these minerals prior to the antler growing season for use during summer. A good way to ensure bucks are receiving enough calcium and phosphorus is to provide mineral licks. Although there is no scientific data showing measurable benefits to free-ranging deer, there is evidence of benefits from the livestock industry. Mineral licks can be created every 100 to 150 acres and should include a granular mix (not a block) of calcium and phosphorus in a 2:1 ratio, trace minerals, and salt (<50% of mix).

Habitat Management

Once managers understand the seasonal needs of their deer herd, they can begin improving the habitat accordingly. It is important to realize that property boundaries are meaningless to wildlife. The habitat quality and management practices on adjacent properties should be considered before undertaking a habitat management program on your property. Managing a forest for wildlife requires careful timing and work over many years. The first step is developing a forest management plan.

Managers can develop a forest management plan themselves, although the assistance of a qualified wildlife and forest manager is recommended. At a minimum, the plan should include the following seven items: 1) Management objectives for the entire property — it is important these objectives are stated as clearly and specifically as possible. 2) Maps detailing the property's location, boundary, and individual stand types — U.S. Geological Survey topographical maps are ideal for marking the property's location. Boundary and stand maps should show the compass bearings and lengths of boundaries and be drawn to scale. They should also identify boundaries and the methods used to mark the corners (e.g., iron pipes, concrete monuments). Boundary and stand maps should also show the division of forest stands on the property, the acreages in each stand, and topographic features such as hills, streams, ponds, swamps, ledges, and roads.

3) Management goals by stand type — management goals are specific to each stand and are developed from the management objectives stated at the beginning of the plan. 4) Stand descriptions — important vegetational characteristics such as tree species, age, diameter, stand density, volume, quality, and growth rate of each stand are listed. You should also include wetlands and other sensitive areas. 5) Site descriptions by stand type — site descriptions include the stand's aspect, slope, and site index (i.e., indicator of site quality). 6) Recommended treatments by stand type — the recommendations detail the treatments or techniques used to manipulate the habitat to meet the landowner's stated objectives. These may include timber management practices, prescribed burning, mowing, discing, fertilizing, and applying selective herbicides. 7) Procedures for updating the plan — most plans should be updated every five years. A written plan assists managers in improving the existing habitat, creating new habitat, and provides an element of continuity if the land changes ownership or managers.

Whether developing a plan individually or with a forester, you should understand what constitutes quality deer habitat. Good habitat includes a mosaic of stand types from open ground to mature forest with a good mix of areas in early succession (young regrowth after

disturbance). The habitat should include several heights, ages, and species of trees and both forested and open areas interspersed throughout the property. Edge is the transition area between habitat types and is an important component of deer habitat. Edge is created where two or more habitat types meet. Interspersion of habitat types maximizes the amount of edge and typically provides dense cover and a variety of different plants.

A property's potential for deer habitat is not fixed. Forest management techniques can be used to manipulate vegetation to increase high-quality deer forage. Clearcuts and seed-tree cuts create abundant food and cover at ground level. Clearcuts completely remove the overstory and seed-tree cuts remove most of the overstory but leave a few trees to help "reseed" the residual stand. These cuts should be laid out in strips or irregularly-shaped patches to maximize edge. Available tree species may influence your harvest method. For example, aspen grows quickly and regenerates in high density. Aspen provides abundant browse and thick cover for deer and other wildlife. Aspen regenerates better by stump sprouts and root suckers following a clearcut than it does from seed.

Fuelwood cuts or small patch cuts also can create high quality deer habitat. Cuts should be one to five acres in size and scattered throughout the property. Brush piles created from slash provide shelter for deer and other wildlife and will protect new seedlings from being browsed. Managers can promote stump sprouts and enhance hardwood leaf production by conducting timber harvests or fuelwood cuts during winter.

The importance of mast cannot be overstated. Mast is most important during fall but is also heavily used during spring and summer. Timber harvesting strategies can be used to increase acorn and other mast production. Thinning around mast species reduces crown competition and enables trees to get additional light and nutrients and produce additional fruits and nuts. You can do this to overstory oaks and beeches or to smaller apples and persimmons. Pruning and fertilizing mast species are also useful strategies, as well as planting additional trees. Year-round food plots are important. Research suggests a minimum of one percent of your property needs to be in high-quality food plots to have a measurable impact on the deer herd. I suggest planting three to five percent. You can use old fields, logging roads, log landings, or clear land to create new plots. Like timber cuts, new plots should be laid out in strips or irregularly-shaped patches to maximize edge. About 70 percent of the acreage dedicated to food plots should be planted in cool-season perennials, 10 percent in cool-season annuals, and 20 percent in warm-season annuals.

Cool-season forages are typically planted in fall through spring and are utilized in fall through early summer. Warm-season forages are planted in spring and early summer and are utilized in summer and fall. Perennials are plant species that live for more than one year and are more economical and productive than annuals in the long-term. They are harder to establish and slower growing than annuals during the first few months and require periodic mowing, fertilization, and weed control. Annuals live for one year, are easier to establish than perennials, and produce more biomass than perennials during the first few months. Annuals need to be replanted every season and are more expensive and labor intensive than perennials. Cool-season perennials include red and white clover, alfalfa, orchardgrass, timothy, and trefoil. These species mixed together and/or with cereal grains or other grasses make great cool-season plots. Planting mixes allows faster-growing species to act as a nurse crop for slower-growing species that spend more time developing root systems. Mixes take advantage of

different maturity rates, and provide insurance that at least some species will be suited to the site and weather conditions and guard against total crop failure. Mixes containing legumes fix some of the needed nitrogen and decrease fertilizer costs.

Cool-season annuals include cereal grains such as rye, oats, and wheat, and brassicas such as turnips, rape, and canola. Brassicas are high in protein (up to 38 percent), highly digestible, and extend the growing season into winter. Brassicas are more palatable to deer after a frost, can stay green under the snow, and should be included in every food plot program. Warm-season annuals include corn, soybean, Lablab, millet, sorghum, and peas. Corn is great since it is used for food and cover. Soybeans and peas are highly preferred by deer. Deer will heavily browse these species and you may need to plant more than two acres of each to get any pods. Food plots are a great way to provide high-quality year-round nutrition to deer. Be sure to conduct a soil test and lime accordingly prior to planting.

Water is the final habitat component and deer get water from three sources:

1) Free water is available from streams, springs, ponds, and as rain or dew on plants. 2) Preformed water is found within a food source. Hardwood browse contains about 50 percent water and succulent forage contains about 70 percent water. 3) Metabolic water is produced within an animal's body by the oxidation of carbohydrates, fats, and proteins. Adults need three to six quarts of water per day but this varies by season. Deer need more water during summer due to higher temperatures and lactation. Deer can also concentrate their urine and "dry out" their feces to conserve water. In northern regions, deer fulfill much of their water requirements with daily forage.

Spring and summer are a nutritionally demanding period for deer. It is important for managers to provide enough high-quality forage to meet those demands. Conducting adequate doe harvests to keep deer populations in balance with available habitat is the first step. Natural vegetation management and food plots are next. Applying a little knowledge and some hard work to the habitat can pay big dividends to the deer herd.

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