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WEC315

Wildflowers Susceptible to Deer Damage in North Florida[1]

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White-tailed deer (*Odocoileus virginianus*) can cause extensive damage to ornamental plants and agricultural crops. The frequency and extent of damage inflicted on ornamentals and crops by deer have increased throughout the southeastern U.S. over the past few decades because of to rapidly growing deer populations and increased contact between humans and deer.

Coping with deer damage

Deer damage to ornamentals reduces aesthetics and can cause economic losses to homeowners and growers. A variety of options is available to deter deer from browsing favored plants. Options include erecting fences, deploying scare tactics, spraying chemical deterrents, and harvesting offending animals. However, nearly all these options are costly, unsightly, work for only a brief period of time, or are considered objectionable by some people. In addition, chemical deterrents, scare tactics, and fences usually provide only short-term relief from browsing deer. Additional information on coping with deer damage is available at http://edis.ifas.ufl.edu/pdffiles/UW/UW12800.pdf.

Selecting plant species that deer do not find palatable is a tactic that can provide more long-term prevention of deer damage. This approach requires knowledge of deer foraging preferences, which varies geographically because preferences are dependent upon which other plants are available to eat.

Determining deer foraging preferences

Many studies that have attempted to determine deer preferences have been conducted under unnatural conditions with captive deer. Deer confined to captivity may not feed the same way as wild individuals. Therefore, assessing the preferences of free-ranging deer whose behavior has not been altered is a more accurate way to measure deer preferences and evaluate the impacts of deer on the plants they browse. This is particularly true when such assessments are conducted in areas with naturally high densities of deer.

We investigated foraging preference of wild white-tailed deer among annuals and perennials native to north Florida and south Georgia at two sites in Gadsden County for two years. These areas had high deer densities. We selected 11 native annual to short-lived perennial species in the Asteraceae family to investigate:

- *Coreopsis basalis* (goldenmane tickseed)
- *Coreopsis floridana* (Florida tickseed)
- *Coreopsis gladiata* (coastalplain tickseed)

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- *Coreopsis integrifolia* (fringeleaf tickseed)
- *Coreopsis lanceolata* (lanceleaf tickseed)
- *Coreopsis leavenworthii* (Leavenworth's tickseed)
- *Gaillardia pulchella* (firewheel)
- *Ratibida pinnata* (pinnate prairie coneflower)
- *Rudbeckia fulgida* (orange coneflower)
- *Rudbeckia hirta* (black-eyed Susan)
- *Rudbeckia mollis* (softhair coneflower)

We protected 198 of the 528 plants from deer with tall fences and left the other 330 plants unprotected. Deer damage was recorded once every 2 weeks throughout the growing season (7 months).

Which wildflowers did deer prefer?

Deer showed a strong preference for four of the species investigated: fringeleaf tickseed, Florida tickseed, coastalplain tickseed, and orange coneflower (see Figure 1 and Table 1).

Figure 1. Deer clearly preferred some wildflower species over others. Note the difference in the size and vigor of the plants in the foreground versus those in the background.
Credits: James H. Aldrich

Fringeleaf tickseed plants browsed by deer produced 58% fewer flowers than those that were not browsed, and 65% of these plants died. Similarly, Florida tickseed plants browsed by deer produced 49% fewer flowers than those that were not browsed, and 25 % of these plants died.

Because of their susceptibility to browsing, cultivation of the four most preferred species (fringeleaf tickseed, Florida tickseed, coastalplain tickseed, and orange coneflower) for aesthetic purposes may be extremely difficult in areas with high deer densities in north Florida and south Georgia unless exclusion fences or other deterrents are in place. When planning a wildflower garden in areas with high densities of deer in this region, we recommend selecting from the other seven less preferred wildflower species tested.

When was deer damage severity highest?

In general, damage was much lower during the spring and early summer than during late summer and fall. The most intense damage to fringeleaf, Florida, and coastalplain tickseeds occurred between late July and mid-November, but differed slightly from one year to the next. Deer damaged orange coneflower between early June and early September. Temporary exclusion fences or chemical deterrents may be helpful in protecting the preferred species during those months when browsing pressure is highest.

All evidence of deer activity in the wildflower plots occurred at night. Motion-sensitive cameras set up to photograph wildlife activity in the plots captured 30 photos of deer (see Figure 2). Every photo triggered by deer was taken after dark (between 6:45 pm and 5:45 am). Growers of large quantities of wildflowers with an interest in protecting them could try erecting temporary fencing in the evening and removing it in the morning to protect plants from deer.

Figure 2. Most deer browsing of wildflowers occurred at night.

Concluding recommendations

The four species of wildflowers we found to be most susceptible to deer damage should not be planted along roadsides in areas with high densities of deer. If these species are

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planted as ornamentals in areas with high densities of deer, substantial losses may occur. Late summer and fall are the times of year when pressure from foraging deer is likely to be highest for these species. Individuals interested in attracting deer may want to consider planting these four species in areas where they want to attract deer.

Sources of additional information

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Table 1. Average percentage of plants of each wildflower species damaged by foraging deer.

Wildflower species	% of plants damaged
Fringeleaf tickseed	67%
Florida tickseed	60%
Coastalplain tickseed	48%
Orange coneflower	42%
Leavenworth's tickseed	27%
Black-eyed Susan	23%
Softhair coneflower	17%
Firewheel	5%
Goldenmane tickseed	5%
Pinnate prairie coneflower	3%
Lanceleaf tickseed	3%