

MANAGING WOOLLY CROTON FOR DOVES AND BOBWHITES

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Wild birds and animals often use native or introduced weeds as food or cover. One of these so called weeds is *Croton capitatus*, a native American plant. The standardized common name for this plant is "woolly croton" (Kelsey and Dayton 1942). Many biologists have called it hogwort, doveweed, or goatweed, but in some localities it may be known as stinkweed or wild sage.

Woolly croton grows from Oklahoma, Missouri and Ohio, south to Texas, and east to Georgia and Florida. It is quite common in West Tennessee but hard to find in Middle and East Tennessee.

As the name designates, it is a hairy plant, both leaves and stems (Figure 1). It grows erect, one to four feet tall, and has alternate leaves narrowly oval, stalked, and with smooth margins. Inconspicuous flowers are found at the ends of the stems and upper branches. The fruit capsule is in the bottom of the flower cluster and contains three seeds. It takes 21,000 woolly croton seeds to weigh a pound as compared to corn which takes approximately 1300 (Figure 2).

Bobwhites feed on woolly croton seed. Johnson (1940) found these seeds averaging 2.8, 0.4 and 0.7 percent in volume in 600 crops taken in three successive years from November to February. Lehman (1941) analyzed 118 bobwhite crops in which woolly croton averaged 8.92 percent of the volume during the winter. Korschgen (1948) rated hogwort (woolly croton) fifteenth by volume. It occurred as 1.1 to 2.9 percent of the contents in 5,472 quail crops. Davison (1942) in summarizing the contents of 5,189 quail crops for a 3-year average classified woolly croton seed in a group "which would supply considerable food under certain circumstances". These publications indicate that the rank of this plant would be higher if there were more available. When Davison (1958) reclassified bobwhite foods, he ranked woolly croton as one of their choice foods.

Mourning doves also find this seed attractive. Rosene (1939) in his Alabama study of 250 dove crops found doveweed (woolly croton) making up 3.28 percent of the food in 30 crops collected during December. Korschgen (1958) in his work in Missouri found hogwort (woolly croton) a major food from May through September. Its occurrence was 8.6 percent with volume measurement of 1.3 percent. Beckwith (1959) found croton an important dove food in Florida. During October in Southeastern Florida 137 crops showed a 21 percent occurrence with 13.2 percent volume, and in North Central Florida 90 crops had 38 percent occurrence with 4.7 percent volume. Davison (1960) recorded woolly croton in 12 crops out of 209 having a combined volume of 136 percent (averaging 11.3 percent). These were collected in 1938 in northern Mississippi. He also collected 3 crops in 1958 near Tillar, Arkansas, from a heavily pastured woolly croton area. The volume in these was 100 percent woolly croton.

Woolly croton is a summer annual. Growth starts in late spring but grows slowly during the early part of the summer. Seed production starts during August and the seed shatters out progressively as it matures. Growth and seed production continues until the first killing frost.

Indication of the possible seed yields of this plant was determined using the procedure outlined by Davison *et al.* (1955). Three seed traps (1 foot by 1 foot) were placed in a good stand of woolly croton in a pasture (Figure 3) in Madison County, Tennessee. One trap disappeared. The yields calculated from the collection of the two traps were 307 and 461 pounds per acre. Bobwhites were making use of this area for winter food. In December, 1957, a covey of 12 birds was flushed in middle of the field. One bird was taken out of the covey and its crop contained 100 percent woolly croton seed.

Soil adaptation of this plant is wide. It will be found growing on good cropland soils, drouthy soils, and also relatively wet soils. The most important factors that affect the growing of woolly croton are (1) getting the seed into the mineral soil so that it will germinate and grow, and (2) competition from other plants.



(Photo by Soil Conservation Service—Tenn.)

Figure 1. Woolly croton (*Croton capitatus*) plant in bloom and forming seeds.

Woolly croton is one of the few choice bird foods that are not destroyed by grazing. This is its chief virtue. Grazing animals seldom eat the plant due to its disagreeable taste. According to Tehon (1946) "the plant is believed to contain croton oil. This oil, besides being a powerful cathartic, is able to blister and irritate the skin."

Native stands are found most commonly in pastured lands. The more severely grazed, the better the stands of this croton. The seeds are pushed into the soil by hooves of grazing livestock, and the competitive plants are eaten. However, even under a moderate grazing program woolly croton appears to

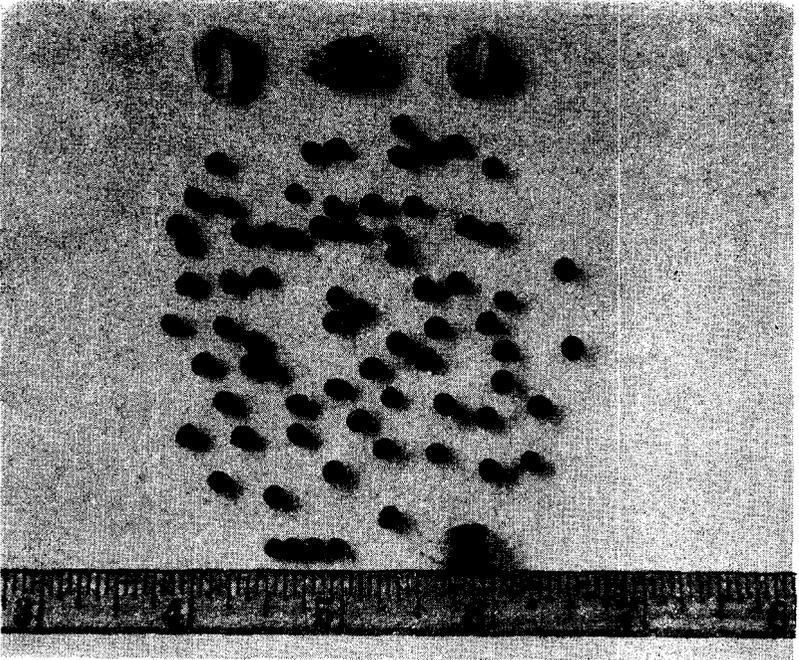


Figure 2. Woolly croton seed compared to corn. (Photo by Soil Conservation Service—Tenn.)



Figure 3. Natural stand of woolly croton growing in a pasture in Madison County, Tennessee. Photograph taken October 26, 1956 just prior to the first killing frost. (Photo by Soil Conservation Service—Tenn.)

grow well with bermuda-grass (*Cynodon dactylon*). Bermuda-grass, by not starting to grow until early summer, allows the woolly croton to stay above it.

Controlling woolly croton in a pasture will not be a problem. The recognized pasture management practice of clipping at least once or twice each year will confine the plants to the area where it is wanted. Eradication, if wanted, can be accomplished by using a herbicide such as 2, 4-D.

Establishment can be accomplished by seeding. Sow the seed in late winter or early spring and cover the seed by disking. Fertility requirements are not known. However observation of existing stands indicates the more fertile the soil the better the growth and production. Quite often there is sufficient seed present to establish a stand by disking or plowing. If not, broadcast 15 to 20 pounds of seed per acre.

Lay (1952) reported this plant occurring most in Texas as the result of soil disturbance. Then as plant succession progressed it disappeared. The length in time varied—in abandoned fields over 4 years old it was gone; in cut-over timberland it stayed from 5 to 9 years into the second stage he called "early intermediate".

In Tennessee, stands on lands not pastured or disturbed in any way usually disappear in three years. One example was an area in Chester County, Tennessee, that was planted to shrub lespedeza. The site was a sandy ridgetop. The seedbed was prepared by plowing and disking. Plants were set in three foot rows. A good stand of woolly croton volunteered the first year but had completely disappeared by the third year. Another example was an area in Madison County, Tennessee, that was planted to woolly croton. The area had been planted to cotton for years. Woolly croton was seeded on a good seedbed and an excellent stand was obtained. The second year just a few plants of woolly croton appeared and they were dwarfed by a heavy stand of other annual weeds. Woolly croton did not appear the third year.

The problem of growing attractive foods for bobwhite and dove in livestock areas has long been recognized by Wildlife Biologists and landowners. It appears as though this plant could be managed in pasture fields (not hay fields) and partially alleviate some of the problems of bird food management encountered in grassland farming.

LITERATURE CITED

- Beckwith, Stephen L. 1959. Mourning Dove Foods in Florida During October and December. *Jr. Wild. Mgt.* 23(3): 351-354.
- Davison, Verne E. 1942. Bobwhite Foods and Conservation Farming. *Jr. Wild. Mgt.* 6(2): 97-109.
- . 1958. A Summary and Reclassification of Bobwhite Foods. *Jr. Wild. Mgt.* 22(4): 437-439.
- . 1960. Unpublished data.
- Davison, Verne E., L. M. Dickerson, Karl Graetz, W. W. Neely, Lloyd Roof. 1955. Measuring the Yield and Availability of Game Bird Foods. *Jr. Wild. Mgt.* 19(2): 302-308.
- Johnson, J. A. 1940. Bobwhite Foods—in Northern Mississippi. *Trans. Fifth. N. Am. Wild. Conf.*: 337-343.
- Kelsey, H. T., W. A. Dayton. 1942. Standardized Plant Names. 675 pp.
- Korschgen, Leroy J. 1948. Late-Fall and Early-Winter Foods of Bobwhite Quail in Missouri. *Jr. Wild. Mgt.* 12(1): 46-57.
- . 1958. Food Habits of the Mourning Dove in Missouri. *Jr. Wild. Mgt.* 22(1): 9-16.
- Lay, Daniel W. 1952. Bobwhite Quail in Relation to Land Management in Pine Woodland Type. Federal Aid Report Series 10, Texas Game and Fish Commission, Austin, Texas.
- Rosene, Walter, Jr. 1939. Food Habits of the Mourning Dove in Alabama. Mimeo. U.S.D.A. Biological Survey Leaflet B. S.—133.
- Tehon, L. R., C. C. Morrill, Robert Graham. 1946. Illinois Plants Poisonous to Livestock. University of Illinois Extension Service Circular 599: 88-89.