

# Tropic Croton Identification and Control In Cotton and Peanut

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## Introduction

Recent surveys in Georgia show that tropic croton (*Croton glandulosus* var. *septentrionalis*) is the third most troublesome weed in peanuts and fifth most troublesome weed in cotton (Table 1). The increase in its prevalence in Georgia can be attributed to several factors including a change in herbicides, particularly the loss of dinoseb in 1986, and the fact that many standard herbicides currently used in cotton and peanut are ineffective on this weed. Also, mature seeds are forcibly discharged from the plant and are readily eaten by birds, which facilitates dispersal and spread.

## Biology

Tropic croton, also known as northern croton, is a member of the Euphorbiaceae (Spurge) plant family. Other members of this family include such common weeds as hophornbeam copperleaf (*Acalypha ostryifolia*), spotted spurge (*Euphorbia maculata*), and wild poinsettia (*Euphorbia heterophylla*). It is a summer annual that can grow up to 20 inches tall. Tropic croton has oblong to egg-shaped leaves with sharply toothed margins. Separate male and female white flowers, approximately 0.4 inch long, occur in terminal, unbranched, elongated inflorescences



Figure 1. Tropic croton in cotton. (S.M. Brown)

Table 1. The 10 most troublesome Georgia weeds

Rank	Crop	
	Cotton	Peanut
1	sicklepod	Florida beggarweed
2	pigweeds	nutsedges
3	morningglories	<i>tropic croton</i>
4	nutsedges	sicklepod
5	<i>tropic croton</i>	Texas panicum
6	wild poinsettia	bristly starbur
7	bristly starbur	morningglories
8	Texas panicum	wild poinsettia
9	common cocklebur	citronmelon
10	Florida beggarweed	pigweeds

called *racemes*. One of the keys to identifying seedlings of this plant is the presence of stellar (star-shaped) hairs on all plant parts. These stellar hairs help distinguish tropic croton from other look-alike weeds such as prickly sida (*Sida spinosa*), velvetleaf (*Abutilon theophrasti*), and spurred anoda (*Anoda cristata*). Research-based information on seed production, seed response to burial depth, and soil pH extremes is not available.



Figure 2. Tropic croton in peanut. (S.M. Brown)



Figure 3. Tropic croton seedling. (E.P. Prostko)

## Competition

### Cotton

Research on the competitiveness of tropic croton in cotton is limited. In one study conducted in North Carolina, researchers measured a 4.1 percent loss in yield for each tropic croton plant per 32 feet of cotton row. These yield losses were based on season-long interference. Although this weed is much less competitive than several other weeds such as common cocklebur (*Xanthium strumarium*) and Palmer amaranth (*Amaranthus palmeri*), tropic croton can still cause significant cotton yield losses. Thus, it is critical to manage this weed during the first six to eight weeks after cotton emergence to eliminate potential yield losses. Additionally, tropic croton present at harvest may affect harvest efficiency.

### Peanut

Limited research has been conducted on the competitive effects of tropic croton in peanut. Preliminary full-season competition studies conducted in North Carolina have shown that tropic croton at a density of 32 plants per 20 feet of row has the potential to reduce peanut yields between 28 and 54 percent. Consequently, tropic croton is considered to be less competitive than many other troublesome broadleaf weeds of peanut including Florida beggarweed (*Desmodium tortuosum*), sicklepod (*Cassia obtusifolia*), bristly starbur (*Acanthospermum hispidum*), and wild poinsettia.



Figure 4. Tropic croton immature plant. (E.P. Prostko)

## Control

### Cotton

*Roundup Ready Cotton.* Tropic croton can be effectively controlled in Roundup Ready cotton with timely labeled applications of glyphosate (Roundup and other products) applied over-the-top of cotton during early season followed by a timely postemergence-directed herbicide application. Effective directed herbicide options include glyphosate alone or tank-mixed with labeled partners, MSMA plus Cotoran (fluometuron), MSMA plus Cobra (lactofen), MSMA plus Caparol/ Cotton-Pro (prometryn), or MSMA plus Direx (diuron). All of these directed materials effectively control tropic croton that is less than 3 inches tall at application and growing in a favorable environment. Additionally, Cotoran, Direx and Caparol/ Cotton-Pro will offer several weeks of residual weed control. If tropic croton is larger than 3 inches at application, glyphosate or Cobra mixtures will likely be more effective. Low rates of Cobra (6 to 9 fl oz) may be mixed with Direx or Caparol/Cotton-Pro plus MSMA in directed applications to obtain postemergence and residual tropic croton control.

*Conventional Cotton.* Tropic croton can be quite challenging to control in conventional cotton since there are no effective over-the-top herbicide options





**Figure 5. Tropic croton flower. (S.M. Brown)**

available. Staple (pyrithiobac) or MSMA applied over top of cotton and tropic croton only provides suppression of croton if it is less than 2 inches tall. Thus, it is critical to use a preemergence herbicide for managing this weed. Cotoran may be adequate in fields with very light infestations. However, Cotoran plus Command (clomazone), Zorial (norflurazon), or Staple applied preemergence would be a better choice in fields with moderate to severe infestations. Selecting Command, Zorial or Staple as a tank-mix partner with Cotoran should be based on other weeds present, rotational concerns, and herbicide application restriction limitations. Before using Command, refer to the most recent product label or edition of the Georgia Cotton Production Guide for use of in-furrow insecticides that protect cotton from potential Command injury.

A timely postemergence-directed herbicide application will be required in most fields infested with tropic croton. In conventional cotton, postemergence-directed control options include MSMA plus Cotoran, MSMA plus Cobra, MSMA plus Caparol/Cotton-Pro, or MSMA plus Direx. If the weed is greater than 3 inches at application, apply Cobra plus MSMA or add a low rate (6 to 9 fl oz) of Cobra in combination with other conventional herbicide mixtures.

## **Peanut**

There is no herbicide labeled for use in peanut that provides full-season weed control with a single application. The best approach to controlling weeds in peanut is to use a combination of both soil-applied and postemergence herbicides.

Soil-applied herbicides labeled for use in peanut that have some residual activity on tropic croton include Strongarm (diclosulam) and Valor. Of these herbicides, Valor is the most effective.

As with any soil-applied herbicide, moisture after application is critical to obtaining optimal performance. At least 0.5 inches of rainfall or irrigation within 7 to 10 days after application is required to activate soil applied herbicides. However, rainfall or irrigation that occurs at peanut emergence after a Valor application will increase the potential for crop injury.

Postemergence options for tropic croton control include an “at-cracking” application of the combination of paraquat<sup>1</sup> + Storm (acifluorfen + bentazon) or an early-postemergence application of Cobra (lactofen), Ultra Blazer (acifluorfen) or Storm. Make these postemergence treatments when the tropic croton is in the cotyledon to two-leaf stage of growth. None of these postemergence treatments provide residual control of tropic croton.

Cadre (imazapic) does not provide effective control of tropic croton. However, research conducted in Georgia and South Carolina has shown that the addition of Ultra Blazer with Cadre greatly improves control of tropic croton compared to Cadre alone. The rate of Ultra Blazer used in this tank-mix is dependent on the weed stage of growth at application. Control of small weeds (2" or less) can be improved with 8 ozs/A of Ultra Blazer while larger weeds will require at least 16 ozs/A or more.

<sup>1</sup>Paraquat is sold as Gramoxone SL, Firestorm or Parazone



**Figure 6. Mature tropic croton plant. (S.M. Brown)**

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