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Hairy Indigo Control in Peanut[1]

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This publication provides county Extension agents, growers, and pesticide applicators with information on hairy indigo control options in peanut. Information is provided on the postemergence (POST) herbicide options and their control efficacy when applied to hairy indigo at different heights.

Hairy indigo (*Indigofera hirsuta*) is an annual legume that was introduced to Florida as a forage crop. It has since escaped cultivation and become a troublesome weed in some crop settings. Hairy indigo is particularly difficult to manage in peanut production because control of a legume weed in a legume crop is often challenging.

Hairy indigo germinates in late spring and continues throughout the summer. In general, it is the later-emerging (late May through June) plants that are often the most problematic because many of the postemergence herbicides have already been applied. Hairy indigo commonly grows from 2 ft to 5 ft in height, and the stem becomes increasingly woody with age. As the name suggests, the leaves are covered with a very dense mat of fine hairs that increase in thickness with age.

Figure 1. a) Hairy indigo plant. b) Fine hairs cover the leaves and stems of the hairy indigo.
Credit: Pratap Devkota, UF/IFAS

Hairy indigo in peanut can reduce yield in two ways.

1. The plant gains a significant height advantage over peanut and forms a dense canopy. This reduces photosynthesis, but also intercepts fungicide and leads to greater disease incidence.

2. The woody stems of hairy indigo complicate the peanut digging process, and significant peanut yield loss can occur.

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Control

Few soil-applied herbicides have been found to adequately control hairy indigo. In addition, the plant has a long germination window, which generally means that pre-emergence herbicide applications do not provide adequate control. Postemergence herbicides were tested to determine which program would adequately control hairy indigo in peanut production. The experiment was conducted at the UF/IFAS with five herbicide combinations on hairy indigo at 1–2 inches, 2–4 inches, and 4–6 inches in height. All herbicides were applied with crop oil at 1% v/v.

Hairy indigo control at 4 weeks after treatment (WAT), when sprayed at 1–2 inches, was acceptable for all herbicides tested (Table 1). Cadre alone provided a modest 78% control, but the treatments containing Cobra or Storm provided 90% control or higher. Surprisingly, spraying hairy indigo at 2–4 inches in height dramatically reduced control for most of the herbicide treatments. This small difference in plant height reduced control by 12% to 32%. As the plants reached 4–6 inches in height, the control with Cadre alone decreased to 42% at 4 WAT. However, control from the Cobra and Storm treatments stayed relatively stable (> 70%) as height increased from 2–4 inches to 4–6 inches.

The rapid reduction in herbicide activity was somewhat expected, because the density of leaf hairs increases rapidly as the seedling establishes and plants start to grow thereafter. The thick hairs intercept the herbicide and prevent the herbicide absorption into the leaf.

Conclusion

These results indicate that hairy indigo is a weed that can be managed with currently available peanut herbicides. However, if hairy indigo has been a problem in peanut production, it is essential to scout these fields often and spray herbicides when weeds are small. Note that applications of Cobra should be used with caution if the peanut is 8 weeks or older. Numerous trials have shown that yield reduction will commonly occur if Cobra is sprayed after peanuts reach 8 weeks. If hairy indigo is present at the late season, it would be advisable to use Storm + 2,4-DB to manage this weed.

Figure 2. Herbicide treatment was most effective when applied to hairy indigo at plant heights of 1–2 inches.
Credit: Blaire Colvin, UF/IFAS

Table 1. Hairy indigo control at 4 weeks after treatment when herbicides were applied to weeds at three different heights.

		Hairy Indigo Height (inches)		
		1–2	2–4	4–6
	Rate (oz/acre)	% control		
Cadre	4	78	58	42
Cadre + 2,4-DB	4 + 16	88	56	30
Cobra + 2,4-DB	12 + 16	97	82	84
Cobra + Cadre + 2,4-DB	12 + 4 + 16	99	87	90
Storm + 2,4-DB	24 + 16	90	70	70

Table 2. Postemergence herbicide options (see Table 1 for tank-mix and control efficacy) for hairy indigo control in peanut.

Herbicide Active Ingredient (Trade/ Product Names)	Mode of Action Group (MoA)	Application Rate per A (Total per A/Season or Year)	Reentry Interval (REI)	Specific Comments/Remarks
imazapic (Cadre or Impose)	2	4 fl oz (4 fl oz)	12 hrs	Cadre is very active on small weeds (3–4 inches in size). Excellent on both purple and yellow nutsedge. Very good on cocklebur, morningglory species, and wild radish as well as many other broadleaf weeds. Good activity on small grass weeds. Cadre has strict rotational restrictions with respect to following crops, the most notable of which is an **18-month restriction before planting cotton.** See label for complete spectrum of control and rotation restrictions. Do not apply within 90 days of harvest. Cultivation 10–21 days after application may provide additional control under drought conditions.
2,4-DB (2,4-DB Several brands) 1.75 EC **or** 2.0 EC	4	9–18 fl oz (max. of 2 applications per year) or 8–16 fl oz (max. of 2 applications per year)	48 hrs	Provides control of morningglory, sicklepod, and cocklebur. Poor control of Florida beggarweed and hairy indigo if applied alone. Apply 2–12 weeks after planting. Do not apply to drought-stressed peanuts. Do not apply within 30 days of harvest.
lactofen (Cobra)	14	8–12.5 fl oz (25 fl oz)	12 hrs	Good to excellent control of morningglory, pigweed, hemp sesbania, and other broadleaf weeds. Apply after peanuts have 6 true leaves. An adjuvant must be used. Any adjuvant may be selected, but oil-based products will increase peanut injury and weed control relative to nonionic surfactants. Do not apply within 45 days of harvest.
bentazon + acifluorfen (Storm)	6 + 14	1.5 pt (3 pt)	48 hrs	Prepackage mix of bentazon + acifluorfen. Apply when weeds are small and actively growing from cracking stage up to 75 days before harvest. Add 1 pt/A of a crop oil concentrate.