

## Identification and Control of Hemp Dogbane (*Apocynum cannabinum L.*) in Virginia

Kevin W. Bradley, Postdoctoral Research Associate

Edward S. Hagood, Jr., Extension Weed Scientist; Virginia Tech

### Identification

A perennial weed that secretes a milky sap when broken, reaching 5-6 ft. in height. Leaves are entire, ovate or elliptic, 2-5 inches long, 1/2 to 1 1/2 inches wide, and arranged oppositely along the stem. Leaves have short petioles and are sparingly pubescent or lacking hairs beneath (1). Stems are without hairs, often have a reddish tint when mature, and are much-branched in the upper portions of the plant. Flowers are small, white to greenish-white, and produced in terminal clusters. The fruit are long (5 inches or more), narrow follicles that are produced in pairs (7). These plants tend to grow in colonies due to the long horizontal rootstock that develops after the original taproot; however, reproduction by seed may also occur.

### Control In Corn

In no-till corn production, the horizontal rootstock of hemp dogbane is often left undisturbed, allowing new plants to develop from lateral root buds and produce significant infestations the following year (2). Previous research revealed that these infestations caused an average corn yield loss of 5 to 10% over a 3-year time period (6). Results from several experiments on the short- and long-term chemical control of hemp dogbane are summarized in Table 1 and Figure 1. As illustrated in Table 1, Accent® in combination with 2,4-D or Banvel®, and Beacon® in combination with 2,4-D will afford similar levels of hemp dogbane suppression or partial control. However, relatively poor control was recorded

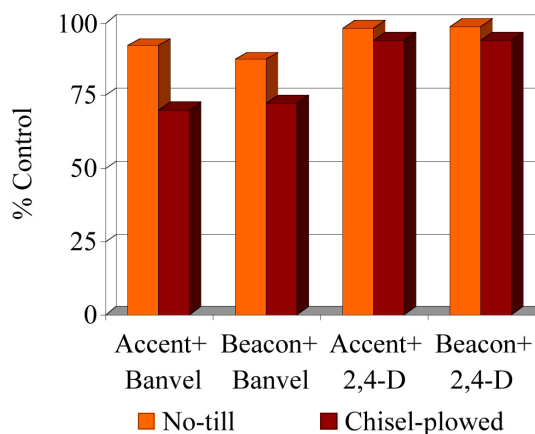
**Table 1.** Short- and long-term control of hemp dogbane in no-tillage corn with selected postemergence herbicides (3).

Treatment	Rate Product/ A	Dogbane Control	
		1993 7-8WAT <sup>a</sup>	1994 1YAT <sup>b</sup>
		-----%-----	
Accent	2/3 oz	69	28
Accent + 2,4-D	2/3 oz + 1/2 pt	88	40
Accent + Banvel <sup>c</sup>	2/3 oz + 1/4 pt	90	56
Accent + Atrazine	2/3 oz + 2 qts	48	27
Beacon	3/4 oz	42	27
Beacon + 2,4-D	3/4 oz + 1/2 pt	83	39
Beacon + Banvel <sup>c</sup>	3/4 oz + 1/4 pt	78	38
Beacon + Atrazine	3/4 oz + 2 qts	37	37
Banvel <sup>c</sup>	1 pt	77	23
Untreated		0	0
LSD (0.05)		11	21

<sup>a</sup>WAT, weeks after treatment

<sup>b</sup>YAT, years after treatment.

<sup>c</sup>Represents 1 of several dicamba-containing herbicides.



**Figure 1.** Hemp dogbane control with POST herbicides in no-tillage and chisel-plowed corn (5).

one year after treatment (YAT) indicating that regrowth from underground rootstocks is likely to occur. Figure 1 also illustrates that the addition of 2,4-D to either Accent® or Beacon® will provide higher levels of hemp dogbane suppression when compared to the addition of Banvel® to either of these herbicides. Suppression of hemp dogbane may also be achieved through postemergence applications of Roundup Ultra® to genetically engineered Roundup Ready® corn hybrids. Similarly, suppression of hemp dogbane may be achieved with Marksman®, or through applications of sulfonyleurea herbicides other than Accent® in combination with 2,4-D or Banvel®.

## Control In Forages

In pastures and hay fields, hemp dogbane represents a potential threat both as a weed capable of reducing yields and also as a poisonous plant to cattle, horses, and sheep. This weed may be poisonous whether green or dry, and only 15-30 grams of green leaves are required to kill one horse or cow (4). Crossbow® (a pre-package mix of 2,4-D and triclopyr) and Banvel® or Clarity® are two herbicides available for the suppression or partial control of hemp dogbane in grass pastures and hay fields. Each of these herbicides applied at the rate of 2 qts/acre should provide from 60 to 100% control of this weed. Additionally, 2,4-D in combination with lower rates of Banvel® or Clarity® will also provide suppression or partial control of this weed.

In established alfalfa stands, Gramoxone Extra (paraquat) at 3/4 pt/A applied post-cutting will provide suppression of this perennial weed. In forages with minor hemp dogbane infestations, spot treatments of a 2% Roundup Ultra solution (v/v) should be considered one of the most effective means of suppression or partial control; however, all nearby treated foliage will also be killed.

## Control In Soybeans

There are relatively few options available for the selective control of hemp dogbane in soybeans. Where appropriate, tillage to disrupt the perennial rootstock

will greatly enhance the effectiveness of herbicide treatments. Diphenyl ether herbicides commonly used for the desiccation of perennial broadleaf weeds in soybeans such as Blazer®, Reflex®, and Cobra® are much less effective on hemp dogbane due to the extremely waxy leaf cuticle of this weed and associated inability of the herbicide to reach the leaf cell membrane. Therefore, partial control or suppression of hemp dogbane in soybeans is limited to the use of Roundup Ultra® in a Roundup Ready® soybean variety. Applications of Roundup Ultra® at the highest labeled rate to these genetically-engineered varieties coupled with the competitive effects of good soybean canopy closure should be considered one of the most effective means of hemp dogbane control.

## References

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## Hemp Dogbane Images

