MISSISSIPPI STATE UNIVERSITY EXTENSION

Controlling White Wild Indigo *(Baptisia alba)* in Forages

Synonym: *Baptisia lactea* var. *lactea*

White wild indigo [*Baptisia alba* (L.) Vent.], or false indigo, is a herbaceous perennial shrub of the legume (*Fabaceae*) family. It is one of more than a dozen native *Baptisia* species found throughout eastern and midwestern North America. This particular showy plant is native to the eastern U.S. and is often identified by its distinctive white flower spikes produced in late spring or early summer in the Midsouth. White wild indigo is a desirable species in ornamental beds, native plantings, and pollinator habitat, but it is often viewed as a weed in pasture or livestock production. Because of its toxic properties, white wild indigo in pastures or hay fields poses health risks to grazing livestock.

Description

Growth

Established plants produce stout, smoky-purple stems that emerge in spring from a deeply branched root system. The main stem and sparsely branched side stems are smooth and gray-green, and they produce a mound of compound leaves. The trifoliate leaves are bluish-green and hairless. Ovate leaflets are up to 2 inches long with smooth margins and sometimes pointed ends (**Figure 1**). This mounding shrub usually reaches 3–6 feet tall and provides course-textured greenery to the spring landscape.

This plant is highlighted by the tall, highly visible inflorescence from which the name “alba,” meaning “white,” is derived. This showy collection of white flowers occurs in an erect spike up to 2 feet long (**Figure 2**). Individual blossoms are pea-like in structure and contain petals that range from ½ to 1 inch long. Flowers bloom from mid- to late spring in the Midsouth (early April to mid-May in USDA hardiness zones 7–8). Pollinated and fertilized flowers develop green, oval fruit pods approximately ¾ inch long, before turning black upon seed maturity (**Figure 3**).

Figure 1

Figure 2

Figure 3

Propagation

White wild indigo is propagated by root division, stem cuttings, and seed. Seed pods begin to dry and split when fully ripened in mid- to late summer, when they release numerous kidney-shaped seed. These are dispersed by gravity, birds, mammals, mechanical equipment, and surface water. Seed germination may require stratification because of the hard seed coat. Root division and stem cuttings result in quicker establishment, but flowering from new seedlings may not occur for 2–3 years.

Habitat

Plants are well distributed across the landscape, from open pastures and roadsides (**Figures 4** and **5**) to semi-shaded woodlands, tree lines, and clearings. This native is tolerant to well- to poorly drained and fine- to medium-textured soils and possesses a deep taproot that improves its hardiness. Because of its desirable use in ornamental markets, plants may escape and establish in unwanted areas such as pastures and hayfields, where they become a threat to livestock.

Threat

Baptisia species contain the quinolizidine alkaloids baptisin and cytisine, similar to plants of the genus *Lupine*. Expected symptoms, if consumed by livestock, include nausea, vomiting, or diarrhea. However, due to high alkaloid concentration and unpalatability, consumption may not occur except when present in hay or when desirable forage is unavailable.

Control

Mechanical control with rotary mowers and similar equipment removes vegetation, but regrowth from roots is likely, especially if the plant's life cycle is incomplete. Make sure plants do not reach seed maturity to avoid new seedlings in future years.

Chemical control measures have proven successful, and multiple options are available in forage and pastures. Several herbicides selectively control this broadleaf weed, which is ideal in grass-dominant forage systems. Mississippi State University research has shown that GrazonNext HL (aminopyralid+2,4-D) at 1.2 or 2.4 pints per acre, Weedmaster (dicamba+2,4-D) at 3 pints per acre, Surmount (picloram+fluroxypyr) at 3 pints per acre, and Grazon P+D (picloram+2,4-D) at 1 or 2 quarts per acre provide at least 90 percent control when broadcast-applied to foliage before fruit set (**Figure 6** and **Table 1**). Each of these products is active through plant foliage and root absorption with little to no detrimental effects to desirable grass forage.

Figure 4

Figure 5

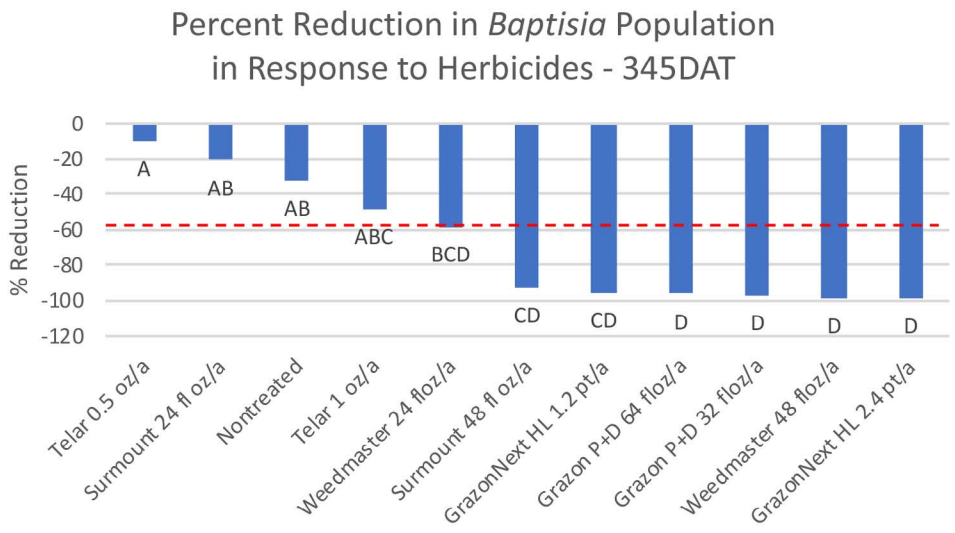

Figure 6. All herbicide treatments extending below the red line indicate significant reduction in plants compared to nontreated plots.

Table 1. Effective postemergence herbicide options to control white wild indigo.

Herbicide	Product	Rate (fl oz) Per Acre
dicamba + 2,4-D	Weedmaster	48
fluroxypyr + picloram	Surmount	48
aminopyralid + 2,4-D	GrazonNext HL	19.2–38.4
picloram + 2,4-D	Grazon P+D	32–64

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