

# Yellow wild indigo

## *Baptisia sphaerocarpa* Nutt.

Plant Symbol = BASP

**Common Names:** yellow bush pea, yellow wisteria, green wild indigo, bushpea

**Scientific Names:** *Baptisia viridis*

### Description

**General:** Yellow wild indigo is a perennial warm season legume and a member of the *Fabaceae* or pea family. The plant is upright with many branching stems arising from an extensive root system. Plant height varies from 2 to 4 feet and maybe as wide as tall giving its rounded appearance. The leaves are bluish green, alternately arranged and palmately divided into three leaflets up to 3.5 inches long. Near the top of the stems the leaflets may be reduced to one or two. Bright yellow flowers up to 1 inch long are found on the upper part of the stems. The plants bloom from April to May. The flowers develop into rounded seedpods up to 3/4 inch in diameter. The seed pods or fruit turn from green to brown as they mature. The brown pod color is characteristic of *B. sphaerocarpa* as opposed to *B. bracteata*, longbract wild indigo, which produce black pods. The mature seed are medium brown and kidney shaped (Linex 2014, Missouri Botanical Garden 2016, Diggs et al. 1999, and Lady Bird Johnson Wildflower Center 2016).

**Distribution:** This plant is found in Texas eastward to Mississippi, then from Louisiana to Missouri. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

**Habitat:** Yellow wild indigo prefers open areas in full sun. It will tolerate light shade, however plants may not bloom profusely or be as compact in growth (Russ 2015). This plant grows in USDA Plant Hardiness Zones 5 to 8.

### Adaptation

Yellow wild indigo grows in a variety of soils. This plant prefers deep, rich, well-drained sandy or silty clays, but also occurs on dry hillsides in low fertility soil. Yellow wild indigo develops a deep, extensive root system which helps tolerate drought (Russ 2015 and Linex 2014).

### Uses

**Livestock:** Yellow wild indigo is slightly toxic to livestock, if eaten in large amounts (Linex 2014).

**Wildlife:** Bumblebees (*Bombus pennsylvanicus*) and carpenter bees (*Xylocopa virginica* and *X. micans*) use yellow wild indigo as a nectar source (Leebens and Milligan 1998). *Baptisia* species are host plants for Wild Indigo Duskywing (*Erynnis baptisiae*), and various Skipper (Hesperiidae family) and Sulfur (Pieridae family) butterflies (Mader et al. 2011). Songbirds may eat the seeds (Linex 2014).



Yellow wild indigo plant in bloom



Yellow wild indigo seeds



A bee pollinating yellow wild indigo blooms

Special Uses: Yellow wild indigo is used for ornamental landscaping in borders or as mass plantings because of their shrub-like appearance and foliage color. The seedpods are used in dried flower arrangements (Russ 2015).

### **Ethnobotany**

Native Americans and settlers used *Baptisia* species to make a blue dye as a substitute for the costly indigo dye (Everwilde 2016).

### **Status**

**Threatened or Endangered:** No. Yellow wild indigo is not mentioned as threatened or endangered in the US Fish and Wildlife Service Environmental Conservation Online System.

**Wetland Indicator:** Not listed in the Army Corps of Engineers 2016 National Wetland Plant List v 3.3.

**Weedy or Invasive:** This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, state natural resource, or state agriculture department regarding its status and use.

Please consult the PLANTS Web site (<http://plants.usda.gov/>) and your state's Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

### **Planting Guidelines**

Begin field preparation in advance of planting to establish a weed free seedbed with tillage and (or) herbicide application. Prior to planting, the seedbed must be firmed and accumulated soil moisture for improved establishment success. Freshly harvested seed can be sown directly in the fall without stratification or scarification. A seed drill is the preferred method for large conservation plantings. Drilling seed provides good seed placement and seed to soil contact. Seed should be planted ¼ inch deep into a prepared, firm weed free seedbed (Russ 2015). Avoid planting into a fluffy or loose seedbed because soil can sluff off into the tracks left by planter press wheels and bury the seed too deeply after the first rain event resulting in stand failure.

If seed is broadcast, a carrier agent such as cat litter or sand is required to help prevent planting at too high a rate and improve seed distribution. To incorporate seed after broadcast planting, the site should be dragged with a harrow or rolled with a culti-packer. Timing broadcast plantings to rain events will help incorporate seed into the soil and improve establishment.

For calibration purposes there are approximately 1,700 seeds per oz. or 27,200 seeds/lb (Prairie Moon 2016). A seeding rate of 5 PLS lb/acre is recommended (USDA-Natural Resources Conservation Service 2016) (which is 3 seeds/ft<sup>2</sup>). When planting seed mixes, adjust the seeding rate according to the percent of yellow wild indigo in the mixture.



**A young yellow wild indigo plant.**

### **Management**

To control weeds in large conservation plantings, mow above the *Baptisia* seedlings during the establishment year or use cultivation or hand roguing (Houseal 2007). Pugh (2012) mentions applications of Grazon P+D® show moderate suppression of yellow wild indigo. He also recommends herbicides containing the active ingredient triclopyr to control large populations. Consult with your local Cooperative Extension Service office in regards to appropriate herbicides and application rates. Apply all herbicides according to label guidelines. When yellow wild indigo is used in landscape plantings, the foliage can be trimmed after blooming, however this prevents seed pod development. After the plants are dormant, cut them back to 6 inches if the appearance of old foliage is undesirable (Everwilde 2016).

### **Pests and Potential Problems**

Diseases and most insects are not a problem. However, the larvae of the wild indigo weevil (*Apion rostrum*) will eat the seeds of *Baptisia* species (Mundahl and Plucinski 2010). Fungus may appear if plants are in crowded moist conditions (Russ 2015).

### **Environmental Concerns**

Yellow wild indigo is considered a desirable plant within its range of occurrence and has no known negative effects on the environment.

## Control

Yellow wild indigo may be controlled by mechanical means such as mowing or by applying a broad spectrum herbicide. Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method. Trade names or control measures appear in this document only to provide specific information. USDA NRCS does not guarantee or warranty the products and control methods named, and other products may be equally effective.

## Seed and Plant Production

Use soil test recommendations to determine soil fertility and pH of the planting site. *Baptisia* species can grow in mildly acidic to neutral soils. For seed production, amend fertility (P and K) according to soil tests after plants have had at least one growing season to establish. This will minimize competition from warm season weeds during the growing season.

Transplanting seedlings in the spring is the recommended method for establishing *Baptisia* seed production fields (Houseal 2007). Transplanting reduces the time needed to achieve a solid stand, allows for use of pre-emergent herbicides and reduces the amount of weed competition typically seen in fields planted from seed. Allow enough space between rows for cultivation, herbicide application, and harvesting. To start *Baptisia* transplants in the greenhouse, stratify (chill) the seed in the refrigerator for 6 to 12 weeks then scarify (scratch) the hard seed coat with sandpaper or nick the seed with a sharp knife. Soak the seeds in water for 24 hours before planting. Sow the seeds ¼ inches deep into a seed mix of 3 parts perlite to 1 part peat. Provide bottom heat at 75° F to growing trays until seedlings emerge. Monitor seedlings for “damping off” disease while they are in the greenhouse. Plant outside after the last spring frost date. The transplants will need extra care during the first year of establishment (Russ 2015).

Once plants are beyond the seedling stage, mowing, cultivation and selective post-emergence herbicides are recommended to reduce weed competition and maintain stand integrity (Houseal 2007). Consult your local extension weed specialist for recommended herbicides. Always read and follow label directions when applying herbicides.

*Baptisia* seedlings grow slowly and produce a seed crop 2 to 3 years after planting. *Baptisia* seed pods are harvested by either direct combining or by hand. If the seed pods are hand harvested, use a hammer mill (see below) to break apart the seed pods (see inset below). Scalp the harvested material (whether combine or hand harvest) with a ½ inch mesh screen to remove large pieces of debris. Afterwards, clean the remaining material with an air screen cleaner. Remove any shriveled or discolored seeds during cleaning. Seed yields for *Baptisia* species vary from 50 to 150 lb/acre (Houseal 2007). For seed longevity, store clean seed in a temperature and humidity controlled environment of 50° F and 30% relative humidity (Houseal 2007).



### Yellow indigo Seed Harvest and Cleaning

Left: Harvested mature yellow indigo seed pods.

Inset left: Mature yellow indigo seed in the pod.

Upper right: Harvested yellow indigo material (in green trash can) ready to be hammer milled.

Lower right: Hammer milled (processed) material being cleaned using an air-screen cleaner.

Another method of propagation is rooting from stem cuttings. Take the stem cutting in the spring (late April/early May) when the stem is soft. On each cutting, include at least one set of leaf buds to be inserted below the potting mix surface. Dip the cutting into rooting hormone and insert into a mix of 3 parts composted bark to 1 part peat. Keep humidity high around the cuttings to avoid drying out. Cuttings should root in approximately 8 weeks (Russ 2015).

Dividing and transplanting of established yellow wild indigo plants is difficult because of their deep woody root system. In the spring, dig deeply around the plant to get as much root system as possible and avoid breaking new shoots. Trim any broken roots and divide the plant using a sharp handsaw or knife. Replant quickly before the roots dry, then water around the plant to settle air pockets in the planting hole (Russ 2015).

### **Cultivars, Improved, and Selected Materials (and area of origin)**

*Baptisia sphaerocarpa* is commercially available as container plants, bare root, or seeds. 'Screaming Yellow' wild indigo is a cultivar from Ridgecrest Nursery in Wynne, Arkansas. This selection was chosen for its profuse number of blooms and compact growth habit. The blue-green foliage of 'Screaming Yellow' remains dense and sturdy throughout the growing season. It is adapted to USDA Cold Hardiness Zones 6-9 and prefers moderate to dry well drained mildly acidic to neutral soils (Coombs 2016 and Almost Eden 2017).

Cultivars should be selected based on the local climate, resistance to local pests, and intended use. Consult with your local land grant university, local extension or local USDA NRCS office for recommendations on adapted cultivars for use in your area.

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**Citation**

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