

Which Morningglory Do I Have?

With the adoption of herbicide resistant crops in today's crop production systems, weed population shifts can and do occur. In particular, fields where crops resistance to glyphosate are grown in a continuous or semi-continuous basis, morningglory populations will increase due to the tolerance of this species to glyphosate (Roundup and other names). This, of course leads to the question of 'Which morningglory do I have in my field?' In North Carolina, we have many morningglory species. Generally, four species occur most frequently. These are ivyleaf, entireleaf, tall, and pitted.

SCIENTIFIC NAMES:

Ivyleaf Morningglory (*Ipomoea hederacea*)

Entireleaf Morningglory (*Ipomoea hederacea* var. *integrifolia*).

Tall Morningglory (*Ipomoea purpurea*)

Pitted Morningglory (*Ipomoea lacunosa*)

COTYLEDON SHAPE AND CONFIGURATION:

Of course, the earlier a weed is identified, the better chance a grower has of controlling it. So the first feature to try to identify morningglories is the cotyledon. If a grower knows what the weed is before the first true leaf appears, he/she has the upper hand. Most morningglories have cotyledons that are shaped like butterfly wings. The shape and configuration of these "wings" will help separate the species.

Ivy/Entire. As you can see by the scientific names above, ivyleaf and entireleaf morningglory are very similar. In fact, when you look at the cotyledon, you can not distinguish between the two. The butterfly wings on the cotyledons of both of these have rounded tips and the angle of the wings is <90 degrees. The outer edges of the wings are not parallel with one another. This is sometimes referred to as an "open butterfly" cotyledon.

Tall. The cotyledonary wings of tall morningglory have rounded tips like the ivy/entire complex, but can be easily identified by looking at the angle of the wings. Generally, the outer edges of the two wings of tall morningglory cotyledons are parallel to each other. This creates what I call a "Box butterfly". This is a very good way to identify tall morningglory.

Pitted. The cotyledon of this morningglory are quite different than those listed earlier. The wings of these cotyledons are long and narrow and deeply lobed between them. This cotyledon looks much like two fingers forming a "V" for victory or "peace" sign or "rabbit ears".

LEAF CHARACTERISTICS:

The next identifying features that can be used for morningglories are the true leaves. Sometimes a weed isn't discovered until after the cotyledon leaves have dropped. Here also, we can distinguish between the four most common morningglories in North Carolina.

Ivyleaf. As the name implies, ivyleaf morningglory leaves have a similar shape to that of decorative ivy. It has a leaf with three distinct lobes. These lobed leaves may not appear until the second or third leaf. The first leaf may be heart-shaped, but soon thereafter they will be lobed if the morningglory is indeed ivyleaf. The leaf surface of ivyleaf morningglory has many hairs that stand upright, making it feel rough to the touch. These hairs are easily seen if you fold back the leaf and look across the surface toward a light source. Even in the cotyledonary stage, leaf hairs can often be seen.

Entireleaf. The dense, upright hairs described for ivyleaf morningglory are also present on the leaf surface of entireleaf morningglory. The difference between these two is the leaf shape. Entireleaf morningglory always has heart-shaped leaves.

Tall. The density and configuration of the leaf hairs are the keys in identifying tall morningglory as well. Like entireleaf morningglory, tall morningglory has a heart-shaped leaf but the leaf hairs are more

sparse and don't stand upright. These hairs grow in a prostrate fashion. This creates a smoother feeling leaf.

Pitted. The leaves of this morningglory have two distinctive characteristics to use for identification. The first is the leaf shape. Like other morningglories, pitted morningglory has heart shaped leaves. However, the leaf is longer and more narrow than the leaves of entireleaf and tall morningglory. The appearance is as if the leaf was stretched longitudinally. The second feature to look for in pitted morningglory is the maroon border that appears around the leaf margin. This sometimes appears early in the season and appears later sometimes. This maroon marking is usually no wider than a felt tip pen, but is easily seen.

FLOWER:

If you wait to identify a morningglory by its flower, you have obviously waited beyond the time to control it. However, there are cases where you need to know the flower characteristics. One instance would be in the case of mapping a field for next season's expected weeds.

Ivy/Entire. Blue flower, 1 to 2 inches long.

Tall. White to purple flower in clusters of 3 or more

Pitted. White flower

What if my morningglory isn't any of the common four?

Several other morningglory species are present in North Carolina fields. Identification characteristics of some of these other species are described below.

Red (or Scarlet) Morningglory (*Ipomoea coccinea*). The cotyledons of red morningglory are "open butterflies" like those of ivyleaf and entireleaf morningglory. A key difference, however, is that the wings of these cotyledons appear to have been snipped off near the end. The end is not rounded, but straight across. Red morningglory

cotyledon leaves also have very pronounced maroon colored veins. The leaves of red morningglory are similar to the elongated heart shaped ones of pitted morningglory, except that these have small points extending out along the edge of the leaf. These points are mostly found around the shoulder of the leaf, but may occur all along the margin. The flower of red morningglory is actually reddish-orange and is usually about 1" long.

Cypressvine Morningglory (*Ipomoea quamoclit*). This plant is sometimes found in garden shops sold as "Hummingbird plant" due to its long, slender, red (occasionally white) flower that appears to be perfect for hummingbird feeding. The cotyledon leaves are extremely slender and do not touch each other. When looking at the cotyledon from above, it resembles the letter "H" due to the thin lines created by its parts. The leaves are nothing like the other morningglories. They resemble fern leaves. This adds to its popularity as an ornamental.

Bigroot Morningglory (*Ipomoea pandurata*). This morningglory is a perennial species. Its growth emanates from an underground tuberous root. Several stems can emerge from one root per season. Being a perennial, bigroot morningglory cotyledons are a bit different from others. The cotyledonary node is below ground, so the two cotyledon leaves appear to not be connected when viewed above ground. These cotyledon leaves are similar to those of pitted morningglory. Leaves of bigroot morningglory are elongated and heart-shaped. The flowers of this morningglory are white with a purple center and are about 2 to 3 inches long.

Purple moonflower (*Ipomoea turbinata*). Cotyledons of this plant are similar to those of red morningglory, except that these are much larger. The veins are again prominent and the butterfly wings appear to be snipped across near the end. The leaves are heart-shaped with few hairs, if any. Flowers are light purple with dark centers.

Palmleaf Morningglory (*Ipomoea wrightii*). The leaves of this morningglory have 3 to 7 lobes radiating from a center and does indeed resemble the palm of a hand. The cotyledon is similar to pitted morningglory with a deep divide between the two wings. The flowers are 0.6 to 1.0 inches long and are lavender with dark centers.

Smallflower Morningglory (*Jacquemontia tamnifolia*). Note that this isn't in the same family as the others listed here. This morningglory is different in many ways. The first difference is that the cotyledons are not butterfly in shape. Their appearance is similar to that of a mustard plant. The cotyledon leaves resemble two lima beans connected together instead of a butterfly. The next difference is that the leaves are not heart-shaped. They are egg-shaped instead. You can also find leaf hairs extending out from the edges of these leaves. The flowers are also different from the other morningglory. These blue flowers are quite small (0.5 inches or less in length) and are in clusters of 20 or more.

Go to <http://www.ppws.vt.edu/weedindex.htm> to see photographs of the morningglory species.