

Field Bindweed

Convolvulus arvensis



FAMILY	Convolvulaceae- morning glories	ORIGIN	Mediterranean
LIFE CYCLE	Perennial	OTHER NAMES	Corn lily, Creeping jenny, Hedge bells, Wild morning glory

QUICK FACTS

- Native to the Mediterranean, field bindweed was introduced to Virginia in 1739, likely via contaminated seeds. It now exists on every inhabited continent, thrives in disturbed areas, and poses a significant threat to agriculture, reducing crop yields by 20-80%.
- Field bindweed is a perennial vine with trumpet-shaped white-to-pink flowers and deep, extensive roots capable of spreading over 20 feet. It germinates in dry, sunny conditions and produces seeds that remain viable for decades.
- This weed is difficult to eradicate because of its deep root system and seed resilience. Bindweed competes aggressively with crops, harbors plant viruses, and is toxic to horses.

One of the most difficult-to-eradicate noxious weeds you are likely to encounter is field bindweed. “Devil’s guts” or “chicken guts,” two of the 84+ common names for this prolific weed, refer to the tangled, writhing mess it makes of agricultural fields and other open areas. Field bindweed is a botanical tyrant—its creeping roots and vines strangle crops, defy eradication, and mock the efforts of even the most diligent landowner. For hundreds of years, it has spread its tendrils across the globe; today, it is listed as one of the ten most serious weeds on the planet.

What does it look like?

Field bindweed is a twisting, matting ground cover with distinctive white to pink flowers with shapes typical of morning glories. A common sight in North American gardens is the annual morning glory (*Ipomoea* spp.). This similar vine is distinguished by a thicker stem and larger ~2-inch flowers that are deeper shades of blue, purple, or white. Wild buckwheat is also commonly misidentified as bindweed but is set apart by its larger, more pointy leaves.



Eric Coombs, Oregon Department of Agriculture, Bugwood.org



Ohio State Weed Lab, The Ohio State University, Bugwood.org



Jan Samanek, Phytosanitary Administration, Bugwood.org



John M. Randall, The Nature Conservancy, Bugwood.org

Plant: Colonies of these plants form dense ground covers with twisting brown-purple vines that easily climb other plants. Each plant can extend ten feet or more.

Roots: A deep, slender taproot forms from each plant. Spaghetti-like in appearance, roots form a writhing mass that extends up to 25 feet both laterally and vertically.

Leaves: The arrow-shaped (sagittate) mature leaves are in an alternate pattern with smooth (entire) margins and shrink in size as they grow closer to the vine’s end. These leaves are between 1.5 and 2.5 inches long, with long petioles. The first leaves emerging from the seed are square-ish, between 0.35 and 0.87 inches long and 0.14 and 0.4 inches wide, with long stalks that are reddish near the base.

Flowers: The bindweed flowers are arguably the plant’s most recognizable part. Its trumpet-shaped flowers appear in leaf axils throughout the summer. In true morning glory fashion, the flowers open each morning and close in the evening. Each axil holds one to five 0.5-1 inch flowers. Flower bracts are less than 0.1 inch long.

Seeds: Smooth, round seed capsules are about 0.25 inches and contain 1-4 seeds. The seeds are dark brown, about 0.12-0.16 inches, and have a rough texture. Lateral roots spread to a 10-foot or greater radius from a deep taproot.

Impact and Management

Agriculture and Food Security

Bindweed carries a host of viruses that particularly affect nightshades, like tomatoes, tobacco, and potatoes. Horses can be harmed by ingesting field bindweed because the plant contains the alkaloid psudotropine, which may cause equine intestinal fibrosis.

Economic

Field bindweed's extensive root system endangers crops by aggressively competing for water and nutrients. Spain recorded annual losses of wheat/sunflower crops of 1.6 plants per square foot due to the presence of field bindweed. The presence of weeds makes harvesting crops both mechanically and manually much more difficult.

Ecosystem Health

Once established, field bindweed displaces native plants, resulting in a notable loss of floral biodiversity. This can significantly reduce forage availability for game, particularly during the winter months, and may even alter migratory patterns.

While toxic to horses, Cattle, sheep, pigs, and chickens will readily graze on the plant. While grazing will likely not eliminate the plant, it may significantly reduce seed production. Hogs and chickens can be more effective as they will dig up and consume the root crown. Smothering the weed with black fabric or plastic can be effective, but this process will take multiple years to eliminate the infestation completely.

As mentioned above, bindweed is not at all shade-tolerant. An experiment was performed in 1985 in Fort Collins, Colorado, by farmer John Mattingly. He wanted to see if pumpkins, the leaves of which grow quite large and naturally shade out many groundcovers, would impact the growth of bindweed in one of his fields. After fertilizing the pumpkins with liquid nitrogen, the bindweed became so stunted they could not produce seed. Mattingly claims this treatment effectively eliminated bindweed from his field for at least 9 years. He attributes this success to the combined shading ability and allelopathic nature of pumpkins.

DO's

- Routinely inspect your land and remove bindweed manually, ensuring to extract as much of the root system as possible.
- Always clean farm equipment to prevent the spread of rhizome fragments between fields.
- Plant dense or fast-growing crops to outcompete bindweed in fields or gardens.

DON'Ts

- Ignore new growth; Ignoring small patches of bindweed can allow it to spread rapidly, making control much more difficult.
- Compost bindweed plants or roots, as they can survive and re-establish when spread.
- Avoid leaving exposed soil, as this provides ideal conditions for bindweed to establish.



For more information on managing field bindweed, please visit www.nmweeds.org

