

# FIELD BINDWEED: Options for control

Field bindweed, a class-C noxious weed in Lincoln County, Washington (*Convolvulus arvensis*) is of the Morning Glory family. Also known as Morning glory and Creeping jenny, derives from Eurasia, is a viny perennial with an extensive system of deep creeping roots and rhizomes. Field bindweed is considered one of the most noxious weeds of agricultural fields throughout temperate regions of the world. Plants typically develop large patches and are difficult to control. It is troublesome in numerous crops, but is especially problematic in cereals, beans, and potatoes. It interferes with harvesting operations due to its twining growth habit and often causes lodging of the crop. It is an alternate host of the viruses which cause potato X disease, tobacco streak, tomato spotted wilt

and vaccinium false bottom. are pollinated by insects such as moths, honey bees, and butterflies. Most seeds fall near the parent plant, but some seeds may disperse to greater distances with water, agricultural activities, and animals. Seeds are hard coated and can survive ingestion by birds and other animals. Most seeds can take in water and germinate 10-15 days after pollination. However, seed coats mature 15-30 days after pollination, and 80% of seeds become impermeable to water. Impermeable seeds require scarification or degradation of the seed coat by microbial action to absorb water and germinate. Seeds germinate throughout the growing season, but peak germination usually occurs mid-spring through early summer. Dry, sunny conditions and limestone soils favor seed production. The stems can grow over 5 ft., with a taproot up to 21.7 ft. long, and rhizomes 8.5 ft. long.



Field bindweed seedlings are dull green with white veins and indented at the tips.



Leaves are alternate, arrow-head-shaped, rounded or blunt tipped.



The flowers are solitary and usually have two small bracts at the base of the flower.

and vaccinium false bottom.

Field bindweed reproduces by seed and vegetatively, from deep creeping roots and rhizomes. The small flowers

21.7 ft. long, and rhizomes 8.5 ft. long.

Since it has the ability to reduce row crop production up to 100% in dry years, a loss of \$377.88 million from lost production resulted in 1998



Field bindweed pre-bloom. Once pollinated, each flower produces 1-4 seeds 30 days after fertilization.



Blooms open in the morning and close late in the day, are white with pink hues running from the edge to center.



By choking out native plants, Field bindweed quickly becomes established and prevents other plants from growing.

## Key identifying traits

- **Leaves** are alternate and arrow-shaped.
- Grows as a **creeping vine** 1 to 5 ft. long.
- **Flowers** are white or pink funnel-shaped, 5-lobed, that open in morning & close late day.
- **Roots** are cord-like, white, fleshy and brittle.

## Biology and ecology

- Field bindweed is a **perennial** plant.
- **Spreads** from seeds and root **rhizomes**.
- **Flowers** from June till fall frost.
- **Seeds** can remain **viable** in the soil for up to **50 years**.
- Common **invader** of agricultural crops.
- Can **grow** up to **20 ft.** in a season, with many shoots branching out.
- **Spreading root system** makes control difficult.
- **Vines** can form dense tangled mats.
- **Root fragments** as small as 2 in. can produce a plant and can survive temperatures as cold as -76 degrees Fahrenheit.
- **Dry sunny weather** and **habitat** are **most favorable** to seed set.
- **May fail** altogether in **rainy periods** and on **poorly drained soils**.

# CONTROL MEASURES:

For this and other publications, see our website at: [www.co.lincoln.wa.us/weedboard](http://www.co.lincoln.wa.us/weedboard)

## Prevention:

- Prevent Field bindweed from entering “clean” areas include cleaning off machinery and vehicles after tilling or driving through bindweed, purchasing weed-free seeds and quarantine livestock that have grazed bindweed. Early detection is vital to prevent invasion.

## Biological:

- None available at this time.

## Cultural:

- Healthy competitive crops such as winter wheat or perennial forages are able to reduce infestations signifi-

cantly after 3 to 5 years, particularly when combined with herbicide use.

## Mechanical:

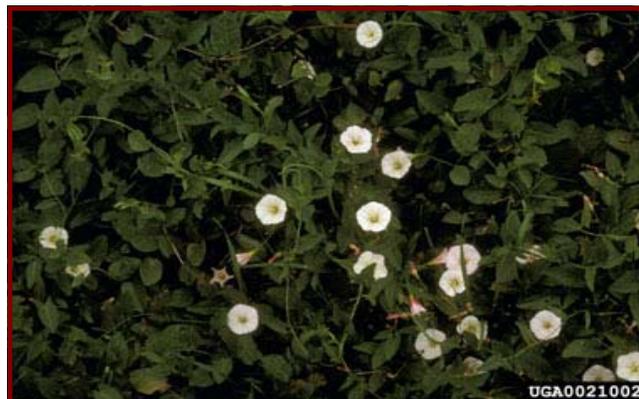
- From 1 to 5 years of repeated tillage may be required to exhaust root carbohydrate reserves.

## Chemical:

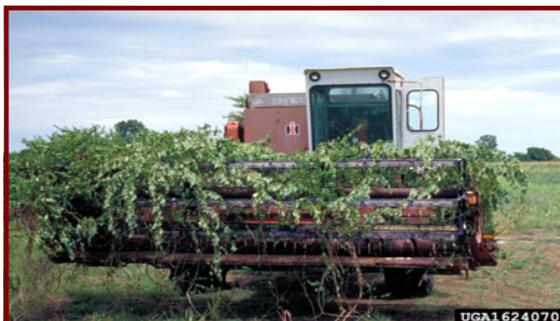
- Weedmaster (dicamba + 2,4-D), Tordon (Picloram) and or other residual products used separate or together along with a surfactant..
- **Always** use a **surfactant** due to the hairy leaf surface.
- **Read the label** instructions before applying.



The picture on the right shows how bindweed grows in a vine formation to create dense mats as shown on the right.



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This picture shows how the bindweed has clogged the head of this piece of equipment, making harvesting virtually impossible, let alone costly!



Photos and references courtesy of: Photos: Rich Old, XID Services; WSU, Dean G. Swan, University of Idaho; Texasinvasives.org; ,msu.edu; IPM Images; Weeds of the West, 9th edition.

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