



## NOXIOUS WEEDS

Status: Introduced

# FIELD BINDWEED

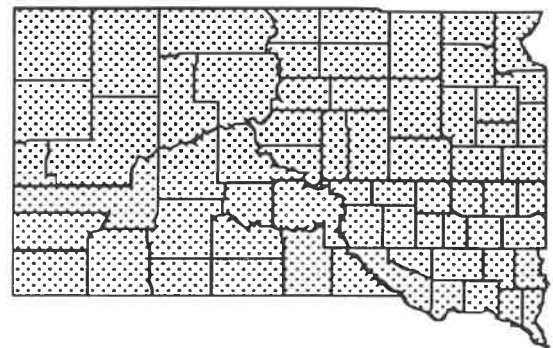
(*Convolvulus arvensis*)

## Description

This member of the morning glory family, commonly called creeping jenny, can be recognized by its arrowhead-shaped leaves, white or pink funnel-shaped flowers, and the presence of 2 finger-like *bracts* below the flowers. The plant ranges from 2 to 7 feet (30.5 to 213.4 cm) tall and has smooth stems that twine and spread to form a mat on the ground surface. The arrowhead leaves are located alternately along the plant's vine. The leaves usually have a rounded tip and smooth margins. The 1-inch (2.5 cm) pink to white funnel-shaped flowers are the plant's most distinctive characteristic. Flowering occurs from late June until frost in the fall. The 2 small *bracts* located 1 inch below the flower distinguish this species from other vine weeds. The irregular-shaped seed pod usually contains 4 pear-shaped seeds. Seeds are dull brown, rough, 1/8 to 1/6 inch (3.2 - 4.2 mm) long with 1 rounded and 2 flattened sides. Seedlings emerge from the seeds with 2 leaves similar to alfalfa or radishes.

## Distribution

This species is native to Eurasia and was introduced from Europe as a wheat seed contaminant in the late 1800's. Because of its remarkable adaptability to different environmental conditions, including dry conditions, it can be found all across the state.



## Natural History

Field bindweed is a *perennial* plant with several adaptations that make it very successful. Bindweed roots can penetrate up to 4 feet (1.2 m) deep after 1 year, and

as deep as 20 feet (6.2 m) after 3 years. A 2 to 3 year supply of food can be stored in the roots as carbohydrate. The deepest roots, more than 2 feet (61 cm) below the surface, have the greatest capacity for food storage. The mature root system features a 20 to 30 foot (6.2 to 9.2 m) tap-root with many long, lateral roots. The roots have many white buds, each capable of producing a new shoot.

The stems of this vine plant smother other plants by climbing over them. This ability allows the bindweed leaves to reach sunlight, making some crops less effective as competitors. In addition, this species has one of the longest seed *viabilities* of all *noxious weeds*. Tests have shown that the seeds can remain viable after being buried 50 years. An average bindweed infestation can produce more than 4.5 million seeds per acre. Seed production is greatest under dry, low humidity conditions. The seeds become viable in just 10 to 15 days after pollination.

## Significance

Field bindweed, or creeping jenny, is the most widespread *noxious weed* in South Dakota. It is also one of the world's 10 worst weeds. Nearly 3 million acres are infested in South Dakota, with 75 % of the infestations occurring in cultivated fields. Field bindweed causes millions of dollars in crop yield loss each year and requires expensive control measures.

## Management Considerations

Field bindweed is persistent and difficult to eradicate. Preventing infestation is vital. Prevention measures include planting weed-free seed, feeding grain and forage free of seed, and spreading only manure free of live noxious weed seeds.

Field bindweed requires a 2 to 4 year control plan centering around starving the root system. As long as the roots have food, the plant will continue to live. Farmers should cultivate at 2-week intervals during the growing season and 3-week intervals late in the season. Frequent tillage encourages the plant to use energy to put out new shoots. As long as the new weed growth is regularly removed, the roots can't replace the lost energy. Other important measures include crop rotation and use of herbicides.

Biologists are researching possible biological control agents but currently solutions in this area are limited.

The South Dakota Weed and Pest Control Commission has the legal responsibility for developing and implementing a statewide control program for all noxious weeds. South Dakota law requires that all land owners control noxious weeds on their land. If land owners do not comply with noxious weed control requirements, fines, tax levies, and liens against their land could result.

## Glossary

**Bract** - a modified leaf growing at the base of a flower.

**Noxious weed** - designation of the State Weed Control Board. These are weeds that are difficult to control once they are established.

**Perennial** - a plant that lives more than two years.

**Viability** - ability to germinate and develop.

## References

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## Selected Resources For Teachers

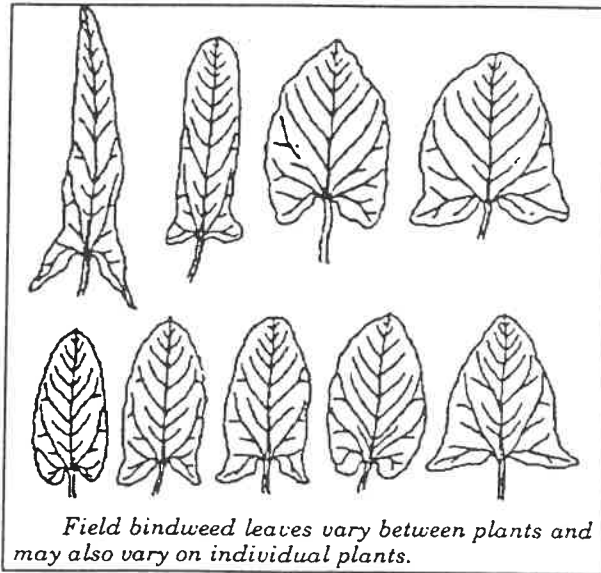
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### Technical Reference:

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