

## FIELD BINDWEED



### DESCRIPTION

Field bindweed (*Convolvulus arvensis* L.) is a twining perennial forb native to Europe and Asia. It reproduces by seeds and rootstocks. The root system is extensive, extending to a depth of twenty to thirty feet. The smooth, slender stems twine or spread over the soil and vegetation. Leaves are up to two inches long and are alternate, simple, petioled, and highly variable in shape and size. The leaf blade may be oblong to elliptical or may be rounded to pointed with spreading basal lobes. Flowers are white, pink or white with pink, funnel-shaped, about one inch across, and usually borne singly in the axils of leaves. Each flower stalk has two tiny, scale-like bracts one-half to two inches below the flower; the bracts, along with leaf shape and small flower size, distinguish field bindweed from hedge bindweed. Seeds are dark brownish-gray, about one-eighth inch long, and have one rounded and two flattened sides. Flowering occurs from June until August, and fruiting occurs from August until October.

## PREVENTION OF SPREAD

The Kansas Noxious Weed Law (K.S.A. 2-1313a et. seq.) requires all people to control the spread of and to eradicate field bindweed on all lands owned or supervised by them. Methods used for control must both prevent the production of viable seed and destroy the plant's ability to reproduce by vegetative means. Because field bindweed is a perennial, two or more of the control methods listed below must be used together to control field bindweed, with the exception that herbicide applications may be used alone as a control. Infestation sites must be monitored after control methods have been implemented to ensure that dormant seeds in the seedbank do not germinate and establish new infestations.

### FIELD BINDWEED CONTROL PRACTICES

Field bindweed control means that both the roots and the flowers must be destroyed. The seeds of field bindweed will remain viable in the soil for up to fifty years, so even repeated control practices may fail to deplete the seedbank, which can result in the re-establishment of the infestation. Contact your county noxious weed director for more information.

#### Cultural Control

Cultural weed control involves land and vegetation management techniques used to prevent the establishment or control the spread of noxious weeds.

Using no-till farming methods, utilizing crop rotation to break weed cycles, and keeping the soil covered to decrease weed seed germination are practices that minimize the establishment of new field bindweed populations.

Planting a dense cover crop in the spring, after a period of intensive cultivation, may provide effective competition for field bindweed. The effectiveness of all competitive crops depends on intensive cultivation during the field bindweed growing season when land is not in crop.

Frequent surveys of fence lines, roadways, ditches, and other susceptible areas for new infestations and the timely removal of any new plants will prevent field bindweed from becoming established.

#### Mechanical Control

Mechanical weed control involves the physical removal of weeds or the reproductive parts of weeds.

As a perennial species, field bindweed is difficult to control mechanically. Deep, repeated cultivation has been shown to reduce field bindweed infestations. Once cultivated, the plant will regenerate its root system in about three weeks, and any piece of a root that was broken during cultivation may establish a new plant. Therefore, to be effective, cultivation should occur every two to three weeks throughout the growing season. Such repetitive cultivation throughout the growing season will deplete the root system and provide control. It is important to clean roots and root fragments from equipment before entering uninfested areas of the field or other fields to prevent the spread of field bindweed. This is not financially practical for most agricultural production systems and may also increase erosion of the topsoil. In general, mechanical control is not a good option because of field bindweed's ability to reproduce from roots and because the plant's seeds remain viable in the soil for such a long period of time.

#### Chemical Control

The herbicides listed below may be used for cost-share with landowners to control field bindweed. Other products labeled and registered for use on this noxious weed in Kansas may be used in accordance with label directions but are not available for cost-share. Be sure to read and follow all label directions and precautions. For additional information, consult the most recent edition of the Kansas State University publication of "Chemical Weed Control for Field Crops, Pastures, Rangeland, and Noncropland."

Any two or more of the herbicides listed below may be available for cost-share as a pre-mix or a tank mix if allowed on the respective labels. Contact your county weed program for availability.

Switching often between herbicides with different modes of action is highly recommended.

Herbicide	Mode of Action	Herbicide	Mode of Action	Herbicide	Mode of Action
2,4-D ( <i>Platoon, LV4 Amine, etc.</i> )	4	diquat ( <i>Reward, Diquat, etc.</i> )	22	imazapyr ( <i>Arsenal, Habitat, etc.</i> )	2
dicamba ( <i>Banvel, Diablo, etc.</i> )	4	glyphosate ( <i>Buccaneer Plus, Imitator Plus, etc.</i> )	9	picloram ( <i>Tordon 22K, Grazon, etc.</i> )	4
diflufenzopyr ( <i>Overdrive</i> )	19	imazapic ( <i>Plateau, Panoramic 2 SL, etc.</i> )	2	quinclorac ( <i>Paramount, Drive 75DF, etc.</i> )	4

#### Biological Control

Biological control refers to the deliberate application of a living organism to control the spread of weeds. These agents will not eradicate their host plant; therefore, other control methods must be used in addition to the use of biological control agents as part of an integrated pest management strategy. The importation of biological control agents is regulated by USDA-APHIS and is allowed by permit only.

While the biological control agents listed below are available for application to field bindweed, they have proven to be ineffective in Kansas, and the Kansas Department of Agriculture will therefore not provide them for use. Other agents may be available for use if the appropriate permit is obtained.

Aceria malherbae

gall mite

Tyta luctuosa

leaf-feeding moth