

CONVOLVULUS ARVENSIS – C. SEPIUM

Field bindweed – Great bindweed

Scientific name: *Convolvulus arvensis* – *C. sepium*

English name: Field bindweed,
Great bindweed

French name: Liseron des champs,
Liseron des haies

German name: Ackerwinde

Spanish name: Corregüela,
Corregüela mayor

Italian name: Convolvolo, Vilucchio

Danish name: Agersnerle

Dutch name: Akkerwinde

Slovene name: Njivski slak

Bindweeds or morning glories are weeds that everyone is familiar with, as they are found in many different environments (urban wastelands, lawns, vineyards, agricultural fields). Two species account for most of the bindweeds found in agricultural fields. The lanceolate (**arrowhead-shaped**) leaves and the stems that climb by twisting (**twining**) around other stems are easily identified. The two climbing species - field bindweed and great bindweed - are common throughout Europe but are distinguished by certain ecological characteristics. Their capacity to reproduce vegetatively (rhizomes) and sexually (seeds) make them especially difficult weeds to control. These species have major direct (reduced yields) as well as secondary (lodging, interference with harvest) pest significance.



Figure 1 - Great bindweed - flower

BOTANY – ECOLOGY

Family: Convolvulaceae (morning glory family)

The survival of these species in fields is linked to vegetative propagation (rhizomes) and sexual reproduction (seeds).

Field bindweed

Life cycle: perennial plant (geophyte) with rhizomes (underground stems). Emergence or regrowth is in the spring.

Favourable environment: all types of soils except acid soils. Warm, dry and marginal soils. Tolerates drought well.

Botanical characteristics: alternate, lanceolate leaves, sparsely haired, with pointed lateral lobes. The branched stems can grow as long as 1.5 m. Seeds ovoid, angular, brownish black, 2.5 x 3.5 mm.

Bloom: May to October. Flowers white or pinkish white and funnel-shaped. Small bracts at the base of each flower.

Seeds: seeds contained in a capsule. Seeds are ovoid, slightly compressed (1.5 to 2 mm), brownish-black.

Great bindweed

Life cycle: perennial plant (geophyte) with rhizomes (underground stems) and deep suckers (underground stolons). Emergence or shoot growth also occurs in the spring.

Favorable environment: all soil types, prefers soils rich in nitrogen and with a high useful reserve.

Botanical characteristics: alternate, arrowhead-shaped leaves, glabrous with two large, entire lobes. Stem up to 3 m in length.

Bloom: June to October. Large (4 to 6 cm) white flowers with fused petals. Two large leafy bracts are found at the base of each flower.

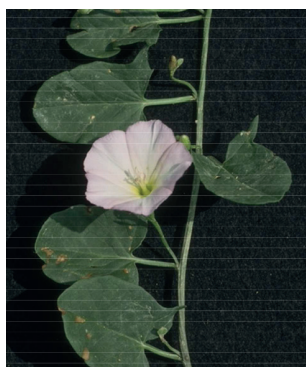


Figure 2 - Field bindweed - flower



Figure 3 - Field bindweed - seedling



Figure 4 - Field bindweed - seeds

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WHAT ACCOUNTS FOR THEIR PRESENCE IN NO-TILL?

In theory, the underground organs of bindweeds only stand to benefit from minimum- or no-till. These two species can emerge and/or grow at the end of the winter crop cycle and continue growing during the intercropping period. They thrive under a seeded cover crop.

Field bindweed, which is more sensitive to crop rotation, is more common in winter crop rotations and it also thrives during the intercropping period.

Great bindweed, a meso-hygrophilic species found in irrigated fields, benefits from the increased water retention capacity of no-till soils with cover crops. It is more prevalent in summer crops.

CONTROL

The control of these species has always been problematic for farmers. The deep underground system escapes shallow cultivation and enables the species to regrow, even when surface conditions are less than ideal for the growth of vegetation cover. Cultivation disturbs the rhizomes and can move them to the surface, where they desiccate. However, the risk of breaking up the rhizomes and thus propagating the plants also needs to be taken into account.

The use of herbicides has proven very effective against these species. Auxin-type herbicides (HRAC O group; fluroxypyr) provide effective control in the main crops. In the intercropping period, glyphosate (HRAC G group) or an auxin (dicamba) can significantly limit the growth and seed production of these perennial species, which are often found in patches.

RISK OF CONFUSION

The two species are very similar to one another morphologically in the vegetative stage. However, a few criteria enable them to be distinguished easily:

- Field bindweed: flowers white and/or pink. Latex not very abundant. Slight pubescence. Plant smaller overall.

- Great bindweed: large leafy bracts at the base of the flowers. Flowers large and exclusively white. Latex often abundant.

Great bindweed may also be confused with black bindweed or wild buckwheat (*Polygonum convolvulus*), which is an annual plant recognizable by its minute flowers and the presence of an ocrea at the base of the petioles.



Figure 5 - Field bindweed



Figure 6 - Great bindweed



Figure 7 - Infestation of bindweeds