Weeds of Western Australia - Bindweed (Convolvulus arvensis L.)

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This quite attractive plant is a very troublesome weed in Europe and North America. It occurs in a few localities in Western Australia but nowhere has become widely established. Experiences in other countries having similar conditions, however, have prompted its declaration as a primary noxious weed.
BINDWEED

(Convolvulus arvensis L.)

BINDWEED is native to Europe, but is now found in most temperate countries. In England it is recorded as occurring in cornfields and waste places on almost all soils, especially those of a medium or sandy nature. It is found throughout Canada with the possible exception of two Provinces, being particularly troublesome in the Southern Prairies and the longer-settled areas of Ontario and Quebec.

Bindweed, was first reported in the United States in 1739 when plants were found in Virginia. By 1900 it had spread throughout the country except in the south-eastern region where the climate is unfavourable. It is considered among the worst of the weed pests in the western States. Since being first recorded in New Zealand in 1870, it has spread widely in both Islands, occurring in fields and waste places.

As one would expect, bindweed has become established in a large number of localities in the southern half of Australia. Although probably one of the later of our weed introductions, it occurred in many places by the beginning of this century and was declared a noxious weed in Victoria in 1908. First recorded in New South Wales about 1889 it is now common in the southern localities and has also spread to other parts of that State. It is widespread throughout the agricultural areas of both Tasmania and South Australia, occurring in vineyards, orchards and gardens as well as on land used for cereals. It has been found in a few places in Western Australia but no large infestations are known. Experiences in other countries having similar conditions, however, have prompted its declaration as a primary noxious weed.

DESCRIPTION

A perennial with a deep and extensive root system, it spreads by means of seeds and also by shoot buds produced on the roots, which are cordlike and fleshy. The fine stems, sometimes ten feet long, are either prostrate or twining around some support such as other plants. The stalked leaves are very variable in shape and size, the base having two sharp or rounded lobes. The pink or white funnel-shaped flowers, one inch or less across, may be solitary or in groups of two to four. The long flowering stems have two small bracts some distance below the flowers.

The seed pods, about ½in. across, contain one to four seeds each somewhat more than ¼in. long. These are dull grey, pear-shaped in outline with one side rounded and the other with a rounded central ridge. The surface is roughened with greyish warts and the prominent basal scar is reddish in colour.

Convolvulus, meaning to roll round or entwine, alludes to the characteristic twining habit of this group of plants, while arvensis means field. Besides bindweed and field bindweed other common names applied to this plant include small-flowered convolvulus, wild morning glory, creeping jenny, bell bind and cow bind.
BINDWEED (*Convolvulus arvensis* L.)

A—Showing the twining habit of the plant and also the root system; B—Seed about natural size and magnified.

(From Weeds of Canada.)
SIGNIFICANCE

Bindweed has all the undesirable characteristics of a vigorous perennial weed with the exception that it is not regarded as being toxic. It trails along the ground, over and among low growing crops, robbing them of those essentials for growth—food, moisture, light and air. The weight of the climbing stems can pull down cereal crops, thus hampering harvesting operations as well as reducing yields.

Although eaten by stock it cannot be considered to have forage value.

CONTROL

The destruction of bindweed is very difficult. There is ample evidence that the seeds retain their viability for many years. Seeds taken from a specimen collected 50 years previously germinated to the extent of 62 per cent while seedlings continue to appear for a number of years after a plant has seeded.

As with many other perennials, including sorrel, small portions of root are capable of producing new plants and working through a patch of bindweed, particularly with a tyned implement, will spread the weed. Although extensive work has been undertaken with this weed in many parts of the world, no very effective control measure has been evolved. Some degree of success has been achieved with cultivation, growing competitive plants and the application of chemicals. With trials undertaken in Iowa, before eradication was complete, it was necessary to cultivate a heavily infested area every ten days between June and October for a period of four years. Most of the weed had disappeared after workings during two growing seasons.

In Minnesota bindweed has been controlled after several years by a series of cultivations followed by the sowing of a competitive crop such as soyabees, sorghum or sudan grass. Minnesota experience has also shown that controlled grazing with sheep is helpful. Infested land was planted to rye or wheat in the autumn and sudan grass in the spring. Sheep grazed the bindweed along with the sown crops and after two to three years the weed was reduced to small proportions.

In England short rotations with extra root crops and persistent thorough hoeing are practised to exhaust the root system of food reserves and prevent seeding. It is obvious that any cultural or competitive methods calls for thoroughness and perseverance. The same may be said concerning chemicals, but for small infestations in particular they can be used effectively. Repeated applications of a 10 per cent solution of sodium chlorate have given good results but 2,4-D ester is the most economical and satisfactory chemical. Complete eradication is difficult but repeated applications give a high degree of control and this method can be used in conjunction with many cropping practices. One pound of acid equivalent per acre gives good results and the bud or early flowering stage appears to be the most appropriate time for application.

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