

● ALTERNATIVES

# COPING WITH FIELD BINDWEED WITHOUT USING HERBICIDES

BY SUE DOCKSTADER

Field bindweed is more than a nuisance; it's a pernicious weed. Like many nonnative invasives, bindweed is a tough plant that threatens to take over once it gets a toehold. Its cosmopolitan presence in many temperate climates has earned it 84 names in 29 different languages—most of those names are not kind.<sup>1</sup> There aren't many positive things to say about a plant that can smother a garden in a season and reappear Terminator-like after the most conscientious yanking. However, bindweed can be managed and even eliminated if you are persistent.

## History

Field bindweed's Latin name, *Convolvulus arvensis* describes the plant well, being derived from *convolvere*, "to entwine," and *arvensis*, "of the fields."<sup>2</sup> It also goes by the common names wild morning glory, creeping jenny, creeping charlie, cornbind, greenvine, and lovevine.<sup>3</sup> Not to be confused with the annual ornamental morning glory (*Ipomoea* spp.), field bindweed is an aggressive perennial weed.<sup>3,4</sup>

Bindweed, a native of Eurasia, was sold as an ornamental in the U.S. in the early 1800s. It was firmly established in the West by the end of that century.<sup>1</sup>

## Description

Bindweed's leaves are arrowhead shaped and about 1/2 to 2 inches long.<sup>6</sup> The mature leaves at the base of the plant are the largest, while the young leaves are progressively smaller towards the end of the stem.<sup>6</sup>

Bindweed has an extensive, deep



Sue Dockstader is an NCAP member who fights bindweed in her garden.



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network of roots and rhizomes (underground stems) enabling it to strongly compete with other plants for water. The roots are white, cord-like, and brittle. Horizontal creeping roots produce buds and new shoots.<sup>3</sup>

The flowers are funnel-shaped, about an inch wide and range in color from white to pink.<sup>7</sup>

Bindweed favors heavy soils.<sup>5</sup>

## Prevention

Keeping bindweed out of your fields or garden is the best way to prevent problems with this weed.

Since bindweed seeds and roots can hitchhike with contaminated seed and plants, it is important to buy clean seed and nursery stock.<sup>6</sup> If you think you have planted something that is contaminated, keep a close watch and remove bindweed seedlings quickly.<sup>6</sup>

If you bring soil into your garden, it should be free of bindweed seed and roots.<sup>6</sup> Borrowed equipment should be cleaned thoroughly before use in your fields or garden.<sup>2</sup> If you have livestock, be sure their feed doesn't contain bindweed seeds.<sup>8</sup>

## Getting Rid of Bindweed

"When dealing with field bindweed,

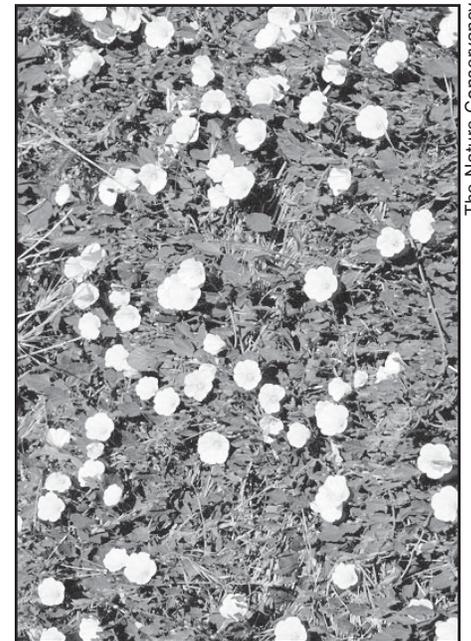
the farmer, land manager, or home owner must recognize that there are no 'quick-fix' solutions to eliminate it."<sup>3</sup> All techniques require persistence and patience.

## Weed Barriers and Mulches

Black plastic or landscape fabric weed barriers covered with an organic mulch deprive bindweed of sunlight and have been used successfully to manage this pest.<sup>6</sup>

When employing this method, you must be sure to overlap the sheets of plastic or fabric to prevent the weed from receiving sunlight and be sure that there are no holes in the material, as the weed is very effective at finding light.<sup>6</sup> This method can take up to three or four years, so be patient.<sup>8</sup>

An old (1915) U.S. Department of Agriculture publication suggests using organic mulches such as straw and paper to smother bindweed, but they need to be used so thickly<sup>10</sup> that most experts now recommend



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plastic sheets or landscape fabric.<sup>5-8</sup>

### Hand-pulling, Hoeing, and Clipping

Seedling bindweed (until it's about a month old) is easy to control by pulling it up or cultivating with a hoe.

These techniques are also important for managing older bindweed even though you won't kill the plant once it has developed its root system. Eliminating flowers before they set seed is critical, because one plant may produce 500 seeds that can remain viable for 50 years if conditions are right.<sup>3</sup> In addition, removing the above-ground part of the weed repeatedly can deplete the carbohydrate reserves stored in the roots.

Allow the plant to grow for about ten days, or until it's about 6 inches long. Then remove the growing parts



Union Tools

Hoes are useful for killing seedling bindweed.

to force it to draw on energy stored in the roots while depriving it of the ability to make more.<sup>5</sup> Eventually, the plant will die.<sup>2</sup> Be careful when using this method, as bindweed happily propagates itself from pieces of roots.<sup>7</sup>

### Flame Weeding

Flame weeding serves the same purpose as hand-pulling or clipping. A flame weeder is a device that uses propane gas and a wand or other structure to deliver heat (130° F) to a plant's cell walls, causing them to rupture. If you choose this control method, follow the manufacturer's instructions and be careful that you do not ignite



Flame Engineering

Using a flame weeder.

dry materials and start a fire.<sup>9</sup>

### Cultivation and Competition

Some literature suggests hoeing or cultivating in combination with growing plants that shade out bindweed.<sup>2,8</sup> The basic idea is to bring in plants that compete with the weed for food and light. Heavy shading is the key to this control method.<sup>5</sup>

Farmers have successfully used sequences of plantings to manage bindweed. One sequence is rye and vetch, planted in the fall and disked or hoed down in late spring, followed by buckwheat or oats with peas, disked or hoed down in late summer. The final step repeats the rye and vetch. The next spring, the land is ready for growing vegetables.<sup>8</sup> According to the National Sustainable Agriculture Information Service, farmers have also used pumpkins and sunflowers to out-compete bindweed.<sup>8</sup> One farmer reported no bindweed problems for nine years after his bindweed was "shaded and strangled by the pumpkins."<sup>8</sup> Alfalfa, legumes, and corn have also reduced bindweed infestations.<sup>5</sup> Small-scale versions of these strategies can be used in a home garden.

### Gall Mites

Bindweed gall mites cause galls to form on the leaves and stems of bindweed; the result is stunting of the plant, reduced flowering, and some reduction in the amount of bindweed. During the winter these mites feed on root buds, stunting root growth.

Bindweed gall mites have done well in Texas and New Mexico.<sup>11,12</sup>

### Conclusion

When the California Department of Food and Agriculture's summarized information about bindweed, the agency concluded that even when chemicals are used, control of this tenacious plant is difficult. "Chemical control of field bindweed generally requires a multiple year approach. There are few herbicides that provide effective control."<sup>3</sup>

All sources, regardless of their perspective about herbicides, stress that in order to control bindweed ongoing vigilance and effort is required. With persistence, you can achieve a garden that is free of both pesticides and bindweed problems. ♣

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