



CREEPING BELLFLOWER

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Creeping bellflower (*Campanula rapunculoides* L.: Campanulaceae), also called roving bellflower, is the plant species homeowners most frequently submit to the University of Idaho for identification, diagnosis and control information. In years past, it was often planted in flower beds as an ornamental and for food. Since, its aggressive nature has resulted in nearly unstoppable invasions of adjacent areas. It is now common in yards and gardens of older homes and around abandoned farmsteads. Seeds of this species are sold by many flower seed merchandisers. Some publish warnings about its weedy nature; some do not.

Biology

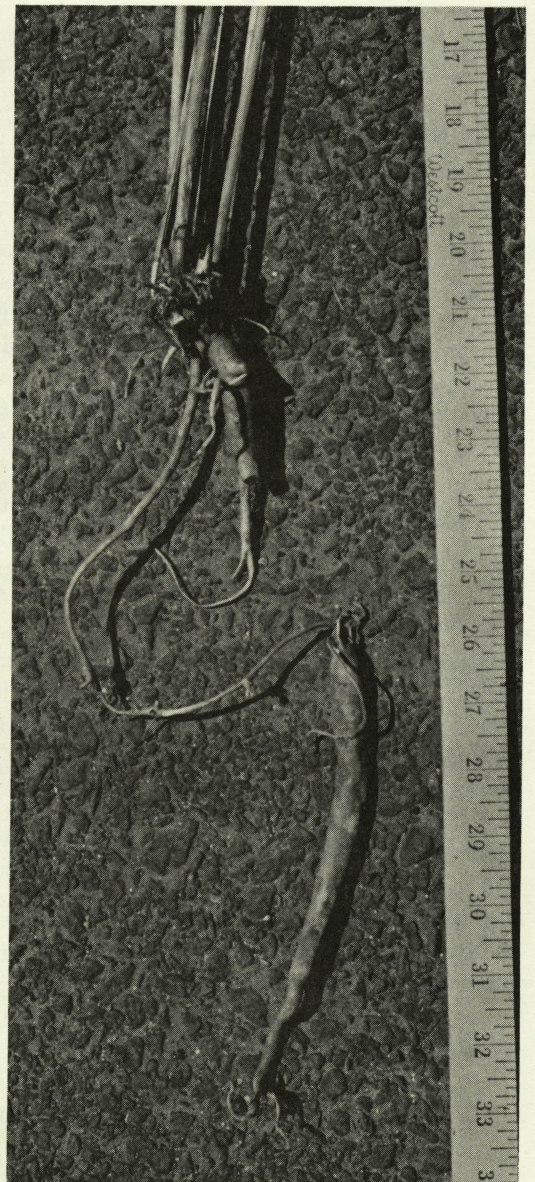
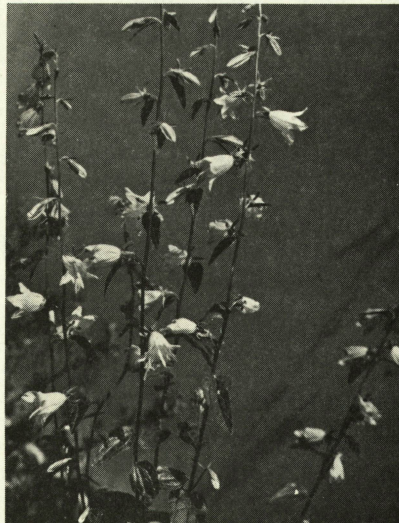
Creeping bellflower produces stems 1 to 3 feet tall that bear attractive five-lobed bell-shaped blue (occasionally white) flowers. These flowers develop on the upper 6 to 12 inches of the stalk during most of the summer (Fig. 1). They are 1 to 1½ inches long and hang downward. Each flower produces a large number of seeds as it matures. Creeping bellflower leaves are generally shaped like a spearhead (Fig. 2), but some may tend to be oval or heart shaped.

A related alien weedy species, clustered bellflower (*Campanula glomerata* L.), is distinguished from creeping bellflower by its cluster of flowers at the tip of the stem and by its nonthickened roots. A second related weedy species, *Campanula persicifolia* L., can be distinguished by its very narrow leaves. In addition to these two weedy bellflowers, at least eight native bellflowers, some also called

harebells, may be found in the Pacific Northwest. None of these looks like creeping bellflower.

The root system of creeping bellflower (Fig. 3) is unique and well

designed for colony expansion, long-term survival, persistence in cultivated conditions and vigorous recovery after destruction of top growth. The plants have creeping lateral roots that



Figs. 1-3. (top) showy, bell-shaped blue flowers are produced on tall stems; (bottom) spearhead-shaped leaves of creeping bellflower have irregularly serrated edges; and (right) creeping bellflower taproots can grow to ½ inch in diameter. They may start from lateral roots and may lack shoots.

grow horizontally below the soil surface. These intermittently develop long, carrot-shaped taproots that frequently lack above-ground stems or leaves, but serve as carbohydrate storage organs from which more lateral roots may continue to grow. Taproots of creeping bellflower are edible, much like those of the related European vegetable "rampion" (*Campanula rapunculus*), though not as large or productive. Some taproots produce buds that develop leaves and stems, and any taproot will do so if separated from the parent root system.

Since many taproots develop from deep lateral roots, hoeing or cultivating the soil 2 or 3 inches deep does not damage the taproot. Since some taproots have no above-ground growth, they cannot be located visually. If the connecting lateral roots are broken, they, as well as the isolated taproots, will produce shoots and become independent plants. Small taproots that grow from seedlings or shallow lateral roots get smaller with depth as most roots do, then may suddenly expand into a large storage taproot, thus forming a two-stage taproot. The homeowner who is attempting to remove the roots may be consequently misled into digging no further than the base of the smaller, upper portion of the taproot. The problem of taproots in the soil may seem to be solved when in fact very little weed control has been accomplished.

Control

Mechanical

Consistent removal of all top growth of creeping bellflower within 10 days of its appearance from spring through autumn will deplete the stored foods in the roots and kill them over a period of 3 to 5 years. If any lapse in this schedule occurs, the weed will regain its root storage, and time spent removing shoots will be wasted. Control can be speeded up by digging out the roots. Deep, thorough digging and soil sifting to a depth of at least 1 foot can remove most lateral roots and large

storage taproots capable of regrowth. Most homeowners are not willing to commit enough time and energy to make such a demanding program successful. If the homeowner is interested in using the roots as table vegetables, this process may seem more productive and interesting.

After the roots are removed, all new above-ground growth arising from missed roots must be removed or killed within 10 days of its appearance or new storage taproots will be formed. If the digging procedure leaves only small root fragments to regenerate, repeatedly hoeing, pulling or treating new leaves with a suitable herbicide within 2 weeks of their appearance will help eliminate the weed. This combination should eliminate creeping bellflower growth within 2 years. Control of new plants from seeds that remain in the soil will require attention for many more years.

Cultural

Roots of creeping bellflower can be excluded from clean areas by placing edging strips or walls to a depth of 1 foot or more around the border. Seed can still invade clean areas, so flowering stems of nearby creeping bellflower plants should be removed from mid-summer on, before the flowers produce seed. Homeowners who plant seeds or roots of creeping bellflower should do so only in contained areas or containers such as pots or flower boxes. The plant normally becomes pot-bound in such containers, losing vigor and flower productivity. To correct this, thin the plant by periodically digging roots. Do not discard roots in compost heaps or

waste areas, because the roots can survive and continue to infest other sites.

Chemical

Several effective herbicides are available to homeowners. These herbicides must be applied to vigorously growing leaves during the growing season. They are useful for control of certain other weeds as well. Commercial preparations of glyphosate, triclopyr, dicamba, MCPP and 2,4-D or mixtures of these are available from garden stores or agricultural suppliers (Table 1). These herbicides will destroy an infestation of weeds such as creeping bellflower, but only when used repeatedly within 2 weeks of appearance of new foliage during the growing season and consistently for 2 or more years. Professional lawn care specialists who are licensed for pest control may use procedures such as soil fumigation, which can be highly effective for some perennial weeds, but fumigation is suited only to certain situations and normally is complex and costly.

Herbicides effective on creeping bellflower are also toxic to many ornamentals, vegetables and fruits, and therefore must be used with extreme caution to avoid injury to valuable plants. Splashes or fine mist from herbicide spray may drift to sensitive valuable plants even under calm conditions. Specific directions for use are on the label of each herbicide container.

The Authors

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Table 1. Examples of herbicides that may be used on creeping bellflower.¹

| Trade name | Common name | Comments |
|-------------------------|------------------------|------------------------------------|
| Banvel | dicamba | Applicator's license required |
| Weed-B-Gone Jet Weeder | 2,4-D + MCPP | Ready-to-use formulation |
| Lawn & turf weed killer | 2,4-D + MCPP + dicamba | Active on many broadleaf weeds |
| Turflon | triclopyr | Applicator's license required |
| Formula 40 | 2,4-D | Only in commercial size containers |
| Dandelion Killer | 2,4-D | Active on many broadleaf weeds |
| Kleenup Super Edger | glyphosate | Ready-to-use, no mixing needed |

¹Labels for these herbicides do not list creeping bellflower among weeds controlled, but permit use on weeds not listed on the label.