



The Speedwells

- *Veronica hederaefolia* L.
- *Veronica persica* Poir.
- *Veronica filiformis* Sm.
- *Veronica peregrina* L.

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Four speedwell species are important weeds in the Pacific Northwest:

- Ivyleaf speedwell (*Veronica hederaefolia* L.)
- Persian, birdseye, or winter speedwell (*Veronica persica* Poir.)
- Creeping speedwell (*Veronica filiformis* Sm.)
- Purslane speedwell (*Veronica peregrina* L.)

The present problem with speedwells is an example of "weed species shift," in which a previously insignificant weed developed into a serious problem because it was not controlled by commonly used

herbicides. Reduced competition from weed species susceptible to these herbicides allowed the tolerant speedwells to proliferate.

Ivyleaf speedwell and (less often) Persian speedwell are the major weeds in some wheat fields in western Oregon and Washington, where diuron and 2,4-D and/or MCPA have been used for more than 30 years. These herbicides have little effect on speedwells.

Creeping speedwell, the species common in lawns, is not controlled by most of the herbicides used on turfgrass—2,4-D, MCPA, dichlorprop,

mecoprop, dicamba, triclopyr, or clopyralid.

Other species in the same family are also becoming weed problems because of their tolerance for so many herbicides.



Figure 1.—Persian speedwell flowers are sky blue with white centers.



Figure 2.—Ivyleaf speedwell leaves (left) have a larger center lobe, compared with the toothed leaf margins of Persian speedwell (right). Fruits are round, compared with the flat, heart-shaped fruits of Persian speedwell.

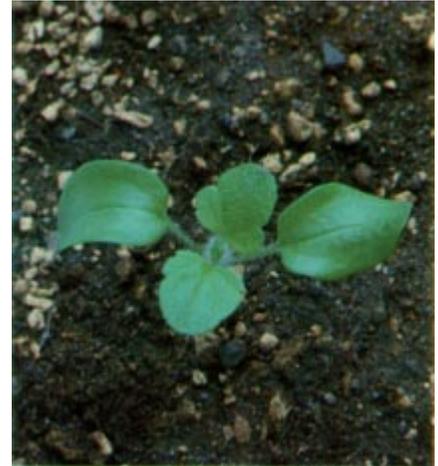


Figure 3.—The larger center lobe of the leaf is visible on the seedling of ivyleaf speedwell.

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Sharppoint fluvellin (*Kickxia elatine* L.) and lesser snapdragon (*Antirrhinum orontium* L.) are good examples.

Biology

Persian, ivyleaf, and creeping speedwell were introduced from Europe and have spread over much of the United States. These three species are the most common of the weedy speedwells in the Pacific Northwest.

Purslane speedwell is native to the United States and is widely distributed. It usually occurs in wet or moist habitats. In fields, it generally competes with the crop only in the wetter sections.

Like other members of the *Scrophulariaceae* family, speedwell flowers have an irregular corolla. Their corollas are

saucer-shaped and are deeply and unequally four-lobed. These four *Veronica* species have single flowers in each leaf axil on the upper part of the stem. (Other species may have either axillary or terminal flower clusters.)

Persian speedwell is a winter annual. It has prostrate stems with turned-up tips and spreads over the ground to form a dense groundcover, rooting at the lower nodes. The leaves and stems are covered with fine hairs. Leaves are oval to round and coarsely toothed, with short petioles. The lower leaves on the stem are opposite, while the upper leaves are alternate, with a flower in each axil. Flowers are about $\frac{1}{4}$ inch wide, blue with deeper blue veins and white centers, and borne on long slender stalks (Figure 1). Fruits are flattened, with a notch at the top, and are surrounded by four persistent sepals (Figure 4).

Ivyleaf speedwell is also a winter annual, prostrate or weakly erect, and hairy (Figure 9). It is distinguishable from Persian speedwell by leaf shape. Leaves have a three- to five-lobed margin with a larger center lobe, compared with the toothed leaf margin of Persian speedwell (Figures 2 and 3). Leaves are often broader than long. Flowers are small, about $\frac{1}{12}$ inch across, pale blue, and on short stalks (Figure 8). Fruits are round, with a slight dimple at the top (Figure 5).

Creeping speedwell is a winter annual or sometimes a perennial. Stems are slender and threadlike, creeping over the ground and rooting at nodes. Leaf blades are nearly

round, with a heart-shaped base and toothed margins. Flowers are deep blue with dark markings and are borne on slender stalks that are much longer than the leaves. Creeping speedwell resembles Persian speedwell, but stems generally are more delicate, leaves are all paired, blades are broader than long, and plants are more persistent and difficult to control (Figure 6).

Purslane speedwell is an annual. The stem is erect, simple or branching from the base, and up to 12 inches tall. Leaves are oblong to linear. The lower leaves narrow to a stalk, while the upper leaves are without stalks. On the lower stem, leaves are opposite; on the upper part, leaves are alternate and have minute white flowers in the axils (Figures 7 and 10). Plants may be hairless or hairy.

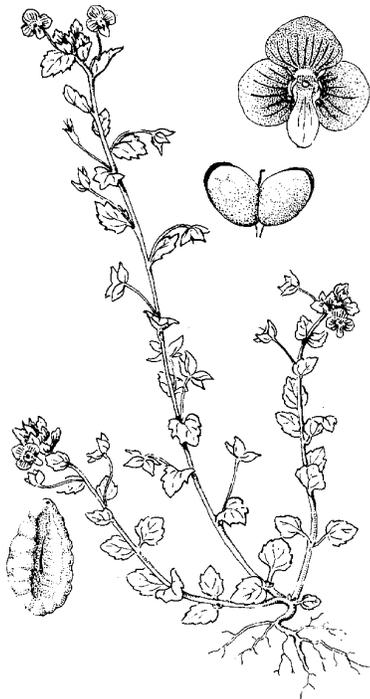


Figure 4.—Persian speedwell.

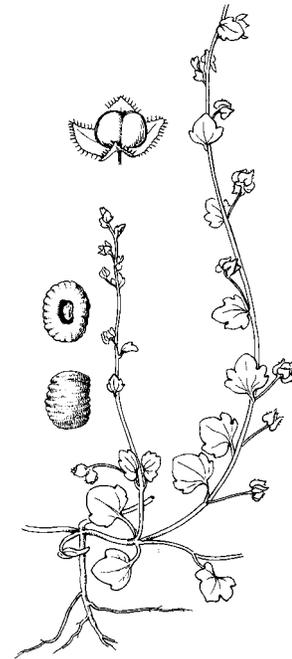


Figure 5.—Ivyleaf speedwell.

Control

Because Persian and ivyleaf speedwell germinate mostly in the fall and early winter, their populations are reduced by tillage for spring-planted crops. Research has shown that the *Veronicas* are among a number of small-seeded broadleaf weed species whose germination is markedly inhibited by tillage after dark. Post-harvest practices of disking only 2 inches deep or nontillage favored the emergence of these species requiring light for germination.

Herbicides that selectively control speedwells in wheat are metribuzin (Sencor or Lexone), chlorsulfuron (Glean), and chlorsulfuron plus metsulfuron (Finesse). Thifensulfuron plus tribenuron (Harmony Extra) and bromoxynil (Buctril) have some activity on speedwells

and can be effective when used in combination with other herbicides.

By spring the speedwells are almost mature and the damage from competition with the crop is done. Thus, fall or split applications in fall and spring should be used for a bad speedwell problem.

In other crops, oxyfluorfen (Goal) and terbacil (Sinbar) are effective. In turfgrass, DCPA (Dacthal), dithiopyr (Dimension), and isoxaben (Gallery) are also active on speedwells.

For current herbicide recommendations in specific crops, refer to the *Pacific Northwest Weed Control Handbook*, published and revised annually by the Extension Services of Oregon State University, Washington State University, and the University of Idaho.

Weeds such as speedwell raise an important question: Why control them at all in turf, especially home lawns? Many homeowners and turfgrass professionals have observed that no matter what grasses they plant, they end up with a mixture of species in 3 to 5 years.

Researchers are experimenting with mixing grasses and selected broadleaves to produce an ecologically stable mixture of plants that persists with less pesticides, fertilizer, mowing, and irrigation than a conventional lawn. Several companies are now marketing such seed mixtures. Available mixtures include clovers, yarrow, English lawn daisy, baby blue eyes, and Roman chamomile. Creeping speedwell could be a good addition; however, at present the seed is hard to find in affordable quantities.

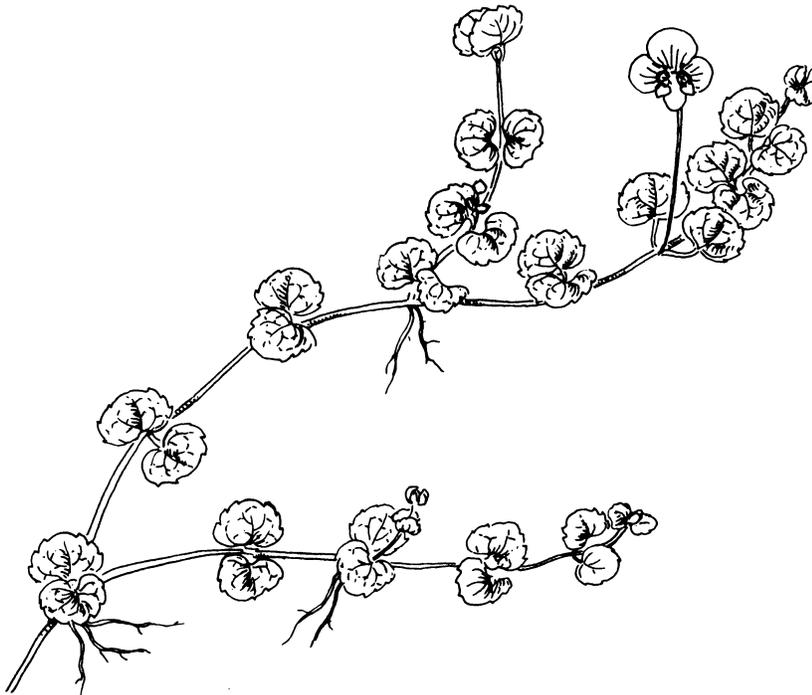


Figure 6.—Creeping speedwell.



Figure 7.—Purslane speedwell.



Figure 8.—Flowers of ivyleaf speedwell are tiny and pale blue.



Figure 9.—Persian, ivyleaf, and creeping speedwell spread over the ground, rooting at the nodes.



Figure 10.—Purslane speedwell has oblong leaves, with tiny white flowers in the leaf axils.

Use herbicides safely!

- **Wear protective clothing and safety devices** as recommended on the label. **Bathe or shower** after each use.
 - **Read the herbicide label**—even if you've used the herbicide before. **Follow closely** the instructions on the label (and any other directions you have).
 - **Be cautious** when you apply herbicides. **Know your legal responsibility** as an herbicide applicator. You may be liable for injury or damage resulting from herbicide use.
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