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# CINQUEFOIL MANAGEMENT

I've received several questions recently from growers who are concerned about cinquefoil encroaching in cranberry beds. This article will briefly describe cinquefoil and its growth habits and offer a couple of suggestions for managing this weed pest.

Several species of cinquefoil invade Wisconsin cranberry beds. Perhaps the most common is Oldfield Cinquefoil, but others found include common cinquefoil, silverweed cinquefoil, silvery cinquefoil, rough cinquefoil and sulphur cinquefoil. Cinquefoil is a member of the rose family and the genus is potentilla. Cinquefoil is native to Wisconsin and the weeds are though to have been introduced as seed into beds in the sand used for construction or winter sanding. It reproduces by seed and by runners rooting at nodes. It is a troublesome weed because it grows to a height similar to cranberries and will grow intermixed among the uprights. More information about different cinquefoils is provided at the end of this article.

Oldfield cinquefoil tolerates acidic soils. It is an upland weed, and some studies were conducted to see if flooding would control it, but it is also tolerant of flooding. These two traits make it an "ideal" cranberry weed. Our cinquefoils are cousins to Pacific Silverleaf, which is a major weed pest in the Pacific Northwest.

Because cinquefoil stems are about the same height as cranberry it is impossible to selectively wipe the leaves with Roundup without getting some on the vines as well. Daubing with Roundup is time consuming but will give suitable results. Expect some vine injury. Use an appropriate dilution (10-20%), add liquid ammonium sulfate, and add a dye to mark what has been covered. Remember that the key to effective control with Roundup is to contact as much of the leaf surface as possible.

Several years ago Dr. Hopen did some research on using Casoron and 2,4-D along with 3 herbicides that are not currently registered for cranberry. One of the experimental compounds provided good control, but also damaged the vines. 2,4-D amine reduced cinquefoil growth, but did not completely kill the weeds by eight weeks after treatment.

Casoron applied early in the season (bud-break stage) was not effective at controlling cinquefoil. However, spot treatments of Casoron in June at the 25% bloom stage at the rate of 100 lbs/a did provide significant reduction of Cinquefoil growth compared to the control (Table 1). In these small plot treatments neither cranberry growth nor yield were reduced at these rates.

Obviously, treating entire beds with Casoron at 100 lbs/a is expensive and will damage the vines. In these

experiments the materials were applied with a "salt shaker" applicator. Drilling appropriate sized holes in the bottom of a coffee can so that the granules can be shaken out over a small area makes a dandy applicator. You'll still need to calibrate your shaker so that you don't over or under-apply the material.

I know that growers are not keen on these high rates of Casoron because they can cause vine injury. But comparing the yield reductions that can be caused by Cinquefoil to that caused by Casoron and it should be a relatively easy decision. Cinquefoil is one of our target weeds for our herbicide trials this year. Perhaps within a few years we could have a post-emergent herbicide with activity against cinquefoil.

As an aside, Dr. Hopen's research also showed that flooding cinquefoil at 70°F for 4 weeks also gave good, but not complete, control. This would also control cranberries!

In short, there are no magic answers to controlling cinquefoil. If we find a new material that will provide control it will take years for registration. For now daubing with Roundup and spot treating with high rates of Casoron are our best alternatives.

| Treatment | # leaves 8 WAT | Dry wt of weed |
|---|---|---|
| Casoron 25 lbs | 171 | 4.61 |
| Casoron 100 lbs | 58 | 2.55 |
| 2,4-D G low rate | 341 | 5.37 |
| 2,4-D G high rate | 460 | 7.03 |
| Control | 593 | 7.84 |

WAT = weeks after treatment.
From Sriyani, Hopen & Binning 1991. Weed Technology 5:297-303.

**All doors are open to courtesy.**

**Thomas Fuller**

# COMMON CINQUEFOIL

## NOMENCLATURE

*Other Names*: common cinquefoil, silverweed cinquefoil, silvery cinquefoil, rough cinquefoil, sulphur cinquefoil

*Scientific Name*: Potentilla spp.

*Plant Family*: Rosaceae

## GENERAL INFORMATION

*Botanical Description:* Several species of cinquefoil are problematic herbaceous weeds. Differences in stems, leaves and flowers distinguish between species.

Common cinquefoil (*Potentilla canadensis* L.) stems are hairy and grow somewhat prostrate along the ground. Silverweed cinquefoil (*Potentilla anserina* L.) stems rise in clumps or tufts. Silvery cinquefoil (*Potentilla argentea* L.) stems reach 2 foot lengths, growing nearly prostrate along the ground. Rough cinquefoil (*Potentilla norvegica* L.) stems are rough, hairy, semi-erect or spreading, reaching 1 - 3 feet tall. Sulphur cinquefoil (*Potentilla recta* L.) stems are rough, hairy, stiffly erect, 1 - 3 feet tall.

Common cinquefoil leaves are palmately divided into 5 leaflets similar to strawberry leaves. Silverweed cinquefoil leaves are pinnately compound and fern-like. Silvery cinquefoil leaves are palmately divided into 5 or 7 narrow leaflets, with fine hairs on the undersides, giving it a silvery look. Rough cinquefoil leaves are alternate and palmately divided into 3 rough, hairy, coarsely toothed leaflets. Sulphur cinquefoil leaves are alternate and palmately divided into 5 or 7 hairy, coarsely toothed leaflets that have pale undersides.

Common and silverweed cinquefoil flowers are yellow, one per

stem and fairly conspicuous. Silvery cinquefoil flowers are also yellow and 0.5 inch across, but arise from short multiple stalks in leaf axils near branch ends. In contrast, rough cinquefoil flowers are small, inconspicuous, and found in clusters at tips of branches. Sulphur cinquefoil flowers are conspicuous, sulfur yellow, 1 inch across, have lobed petals and are found in terminal clusters.

*Stems*: as above

*Leaves*: as above

*Roots*: stoloniferous except for silvery cinquefoil, which has a shallow taproot

*Flowers*: yellow, 5-petaled; bloom May-August

*Seeds*: very small, about 1/32 inch long, yellowish (silvery cinquefoil), light brown (rough cinquefoil), or dark brown (sulphur cinquefoil), somewhat kidney-shaped, may be ridged.

*Seedling*: Seed leaves are tiny and smooth (with the exception of sulfur cinquefoil, which may have hairy seed leaves).

Subsequent leaves are alternate with soft hairs and very long, hairy, grooved leafstalks. Earliest leaves are gently lobed; later leaves are composed of three leaflets with toothed or serrated edges. Stem is not apparent.

## LIFE CYCLE

*Reproduction*: Common, silvery and sulphur cinquefoil are perennial, rough cinquefoil is an annual, winter annual, or biennial.

*Propagation*: Common and silverweed cinquefoil spread prolifically by slender runners (stolons) that may reach several feet long by the end of the season. All species reproduce by seed.

*Dispersal*: Cinquefoil is often introduced as a sand, soil, or cuttings contaminant. Common cinquefoil may not be a natural invader; silverweed cinquefoil definitely is.

## DISTRIBUTION

*State*: Common, silvery, rough, and sulphur cinquefoil are found throughout Wisconsin. Silverweed cinquefoil is generally confined to wet, sandy areas.

*National*: At least one cinquefoil species can be found throughout much of the continental U.S. excluding the desert southwest and southern states.

*Origin*: Common cinquefoil is native of North America. Rough and sulfur cinquefoil are natives of Europe.

## ENVIRONMENTAL FACTORS

Silverweed cinquefoil is basically a wet sand species; silvery cinquefoil is especially common on sandy lawns, pastures, and meadows. Rough and sulphur cinquefoil are found in fields, meadows, pastures, roadsides, and wastelands. Various cinquefoils are often found along cranberry bed edges and in bare, sandy patches. Once introduced, cinquefoil can be very competitive, overtaking existing cranberry vines throughout the summer.

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