

Wild Chervil Trials ♦ Results Summary – 2004/05

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Introduction

During the growing seasons of 2004 and 2005 Susan Delattre and Victoria Weber carried out experiments to determine **which methods work to control wild chervil** (*Anthriscus sylvestris*).

On Susan's land on Windover Road in Randolph, Vermont, we established one-yard-square test plots and tested four potential control methods: cutting at various intervals and heights, 'stabbing' to sever the tops of the plants from their roots, weeding and smothering with black plastic.

We did not test for herbicide effectiveness and we did not try to use sheep or goats, both of which are potential control methods. We also did not attempt to duplicate our experiments in both sunny and shady locations. The weeded plots were in sun, the stabbing and official cutting plots were in shade. The smothering plot was in mostly sun.

Generally, in sunny locations other plants, especially grasses, can co-exist with chervil. In shaded locations, typically there are few or no other plants and the chervil plants are usually surrounded by bare ground all season long. The cutting plots that received the most sun also had the most other plants.

Following are brief summaries of our results.

1- Weeding

Weeding out wild chervil plants worked. We weeded at rates of roughly every 2 weeks, every 4 weeks and every 8 weeks. The more frequent regimes worked best, but 2 or 3 weedings over a season, with a follow-up of one weeding the next early summer resulted in no chervil plants in the plots. These plots were in the sun and some grasses and a few other plants had remained among the invading chervils. These plants expanded to cover the plot once the chervils were weeded out.

Weeding does disturb the soil and make it more vulnerable to weeds and invasives coming in. We were careful to cause as little disturbance as possible.

While weeding is labor-intensive, it is also very effective. The key is to do it early in an infestation so there are relatively few chervil plants to remove, and the original vegetation has not been compromised and can easily reclaim the spots the weeded chervil plants leave behind.

2- Stabbing

Severing the plants by cutting just below the crown with a knife, but not pulling up the root, had mixed results. We stabbed different plots at different times, such as May 1st and June 1st or July 1st only, and in some cases we removed the cut tops from the plots and in others we left them on the plot. Because the roots were not removed, and because of the density of the chervil plants, it was difficult to be sure every root was completely severed.

The number of plants per plot was significantly reduced – on average from 76 plants per square yard initially to 19 plants in late September - and some other plants grew in, for example some mosses, burdocks and ferns, but the remaining chervil plants spread to fill the

plots. In the end it seems to us that it does not matter if there are 97 or 10 chervil plants per square yard if the chervils dominate and there are few or no other plants surviving.

3- Cutting

Cutting did not work effectively. Susan carried out elaborate regimes to cut with 4 variables:

- a) **frequency of cuts:** at 2-week to 6-week intervals,
- b) **height:** cut to ground level, or 4" high,
- c) **beginning date:** begin cutting early in spring or just as flowering begins.

Research in Sweden had showed that this may make a difference in effectiveness of using cutting as a control. In 2004 there was only a 5-day difference – May 12th to May 18th. Ideally we would have begun in April, as chervil begins growing very early in the spring – it is the first deep green that is seen as the snow melts (in time this may prove to be a significant early food for wildlife).

d) **shade/sun:** The yard-square cutting plots were in the shade. Those at the sunniest end did have more other plants growing and this fact may be more important than the cutting regimes that these plots were subjected to. Also, larger sunny areas in other parts of the yard that were mowed showed more growth of grasses and some other plants among the chervil plants.

Overall our assessment of mowing/cutting is that it does not kill *Anthriscus sylvestris* plants and the plants may even be adapted to cutting/grazing so that cutting stimulates the plants to grow. The plant is classified as monocarpic which means it dies once it has successfully set seed. Therefore any interference, such as cutting or stabbing, encourages the plant to keep growing, and indeed the plants we dealt with had central flowering stalks that died back after flowering, but the plants produced approximately 5-10 new 'crown offset' plantlets around the original taproot. Thus each plant went from an initial single tap root to multiple plants and stems and an ever-widening crown. A 3-year old plant I have growing in my garden now has an 8" wide crown.

4- Smothering

Covering the plants with black plastic for 1 ½ years and then seeding with conservation mixture of grasses does work to control wild chervil. The downsides are that the area must be fairly flat and smooth or the plastic cannot be laid down and kept in place and there cannot be a variety of other plants that one might want to preserve as the plastic will kill everything under it (including, potentially, micro-organisms in the soil). We would like to try using clear plastic as well to compare it with black. The greenhouse effect under the clear plastic may cause even higher heat and may work faster.

This method requires re-planting the area immediately and caring for it until the introduced plants become well established. Just as with the weeded plots, there is significant danger of nearby chervil re-seeding the area and the whole infestation repeating itself. We would recommend that any area that seems to have had chervil eliminated be monitored and weeded by hand at least a couple of times a year for several years to prevent re-infestation.

Conclusions:

Weeding and smothering work quite well, but require follow-up monitoring and seeding with alternate plants. Cutting and stabbing do not appear to work effectively as the existing plants re-grow remarkably fast (growing up to 10" in 2 weeks) and fill in the area.

Any method takes multiple applications/treatments over multiple years, and all methods work best if begun early in an infestation and early in the growing season.

Suggestions for future experiments:

- Trial using **sheep and/or goats**, bringing them in for different periods of time and at different stages of the plant's life cycle. Generally we have heard that sheep, goats and even heifers and horses will eat chervil when it is young. Will they also eat it when it is older? 'Applying' grazing animals in rough areas, such as road shoulders and ditches and woodland margins may be difficult. Using fence or staking the animals should be tried. Keeping the animals from eating desired plants would be a challenge.
- Trial different **herbicides** and application regimes. Foliar spraying vs. cut-and-dab methods. Different timing. Assess the impact on other plants that you want to grow back in to replace the chervil. Assess if, and for how long, chervil remains knocked down by herbicides. Antidotal reports are of chervil growing back quickly after initial knock-down, and that early spring applications are most effective.
- Find control methods that work on **rough ground** – where chervil typically gets a foothold. Another challenge is to find methods that work in areas where other vegetation still exists and needs to be protected, preserved and encouraged to come back in and cover the ground where the chervil had been.
- Different regimes and materials to **smother** chervil could be tried. Use clear plastic, use other heavy material that the plants cannot grow through. Cover for different periods of time. What is the shortest period of time that the plants can be covered, that will kill them so that they do not return?
- More trials of **stabbing/severing** may be productive. The relatively easy act of severing the plants' aerial parts from their roots just below the crown has been effective with other plants in the umbellifer family, such as giant hogweed, although it typically takes several treatments. Our trials showed definite decreases in the numbers of plants in each plot after 2 or 3 'stabbing' treatments. This technique should be tried in a sunny area to see if existing plants could come back while the chervil tops are cut off. An important advantage of this technique is that it causes little soil disturbance.
- **Alternative plants.** What plants compete successfully with chervil, in both sunny and shady locations? What plants can hold their own naturally? What plants can be planted to compete with chervil after another treatment like smothering, weeding, stabbing or cutting? What plants might compete with chervil just by being planted among the chervil plants?

Final Impressions:

An unlooked for result of the Chervil Trials has been that both Susan and Victoria have developed deep respect, appreciation and admiration for wild chervil plants. These plants are beautiful, adaptable and have incredibly strong life-force and vitality.

We abhor the 'war on weeds' attitude that is so frequently applied to plants that are deemed to be invasive. We do not wish to eradicate wild chervil, although we do want to allow other plants to continue to grow along with it. We feel we have much to learn directly from *Anthriscus sylvestris*.

-Victoria Weber
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