

OCONALUFTEE BUTTERCUP FIELD TESTS
POST SURVEY - 5/16/2000

Cherie Cordell, Jenny Beeler

The bulbous buttercup plots at the Oconaluftee fields by Big Cove Road were resurveyed May 16, 2000, almost exactly one year from the date of the original survey and the treatment application. The survey was conducted exactly how it was done in 1999. The data was collected from each plot and a photo was taken from the northern stake of each plot. The differences were very obvious, as shown below.

Herbicide Mixtures: 2% Accord + Big Sur
 2% Garlon + Big Sur
 2% Plateau + Meythlated Soybean Oil

Comments by Plot

<u>PLOT #</u>	<u>TREATMENT</u>	<u>% BUTTERCUP DEAD</u>	<u>COMMENTS</u>
Plot 1	Accord	4%	The buttercups appeared very healthy. Other plants noticed: rumex, clover Oxalis, and violets. The plot was fairly bare besides the noted plants.
Plot 2	Garlon	84%	Good kill on buttercups, the ones remaining were small (2-3" tall) and chlorotic. There were still a number of grasses in the plot. The general vegetation cover was fairly good. Of course, it killed most of the forbs.

<u>PLOT #</u>	<u>TREATMENT</u>	<u>% BUTTERCUP DEAD</u>	<u>COMMENTS</u>
Plot 3	Plateau	100%	Killed ALL buttercups and almost everything else. The plot was very bare. Only plants noticed: violets, clover, black-eyed susan, ragweed, and desmodium sp. These plants were even very small.
Plot 4	Mow/Accord	32%	Once again the buttercup looked very healthy, normal size. Evidently the mowing did help in killing the buttercup in this case. From 4 to 32% dead.
Plot 5	Mow/Garlon	60%	Mowing the plot did not help in killing the buttercup. From 84% to 60%. As in the other garlon plot many of the buttercups remaining were small. In addition, this mow/garlon plot looked barer than the garlon plot. It appears that more of the other plants in the plot were killed.
Plot 6	Mow/Plateau	100%	No buttercups! However, once again the plot was very bare. Only plants noted: violets, clover, and an unknown grass. These plants were still very small.
Plot 7	Mow/Control	0%	The population of buttercup in this plot actually increased by 2.5 times. (86 to 215)
Plot 8	Control	0%	Note: for some reason the north corner had a bare spot. The population of the buttercup actually increased by 1.2 times. (127 to 154).

NOTES

From this quick and dirty study it appears that garlon may offer the best opportunity to kill buttercup without killing all the other plant species. Since we did not collect data on the other plant species present in the plots we can not say for sure what species the garlon did kill. It appears that mowing and then spraying the plot with garlon does not help in killing the buttercup. The buttercups that were left in the plots were small and chlorotic. Overall the garlon killed the most buttercup(84%) without too much harm to the remaining species, as far as we can tell from this study. Further tests, especially looking at which species the garlon does kill, would be helpful before any large scale spraying operations.

Surprised by Plateau: At first I was surprised at the appearance of the dead bare ground in the Plateau plots. Plateau is supposed to selectively kill cool-season grasses and some wildflowers. In this hay field it basically killed everything. Evidently the only species in this area were cool-season grasses and the wildflowers that Plateau kills. The Plateau obviously kills the buttercup very well. It may be worth lowering the percentage rate and trying it again.

The accord by itself only killed 4% of the buttercups and it also killed most of the other plants. In addition, the buttercups in the plots looked very healthy and of normal size. It does appear that mowing and then applying accord does a little better job of killing the buttercup. However, too many other plants are also killed by the accord.

We did find a woolly substance and some little bugs at the base of some of the buttercups. Glenn says it is probably an aphid of some sort.

It is good to keep in mind that this survey is being done in the spring. Throughout the summer more plants will appear in these plots and they probably will not look as bare. It may be good to check these plots again later in the summer and look at the species present.

It would also be good to check these again next year and see if any of the buttercups come back or if new ones spread into the plots.

BUTTERCUP PLOT SURVEY
8/4/99
(AFTER TREATMENT)

Employees Involved: K. Hart, M. Walter, J. Beeler

On this date we revisited the buttercup plots in the luftee area, along Big Cove Road. Since it was late in the season the exotic buttercup was not present at this time. These plots will have to be surveyed again at approximately the same time they were surveyed in the spring. At this time we decided to just take a quick look at species present and make a list for each plot. It should be noted this is not a complete list of species, just a quick and dirty survey.

See earlier reports for the treatments of each plot.

SPECIES LIST BY PLOT

<u>PLOT #</u>	<u>SPECIES LIST</u>
1	Carex sp., Dioscorea batatas, Leguminasae family sp., Passiflora incarnata, Viola sp., Vitis sp.
2	Carex sp., Dactylis glomerata, Festuca elatior, Holcus lanatus, Panicum anceps, Passiflora incarnata
3	Not much found here, some Viola sp., and Carex sp. That were yellowish.
4	Lots of Passiflora incarnata - 40%, Solanum carolinase - 5-10%, Robinia sp., Morning Glory vine
5	Carex sp. (yellowish in color), Dactylis glomerata, Panicum anceps, Poa sp., Seteria geniculata, Tridens flavus, Passiflora incarnata, Viola sp.

- 6 Probably a little less Carex sp. Alive here than in Plot #3
- 7 Carex sp., Dactylis glomerata, Muhlenbergia sp., Panicum anceps,
Setaria geniculata, Tridens flavus, Aster sp., Daucus carota,
Leguminosae family sp., Trifolium repens, Viola sp.
- 8 Carex sp., Dactylis glomerata, Festuca elatior, Muhlenbergia sp.,
Panicum anceps, Seteria geniculata, Sorghum halepense, Black-eyed
Susan, Leguminosae family sp., Oxalis sp., Trifolium pratensis,
Trifolium repens, Viola sp.