

Effect of several herbicides on European Coltsfoot (*Tussilago farfara*) control.

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Materials and Methods: A greenhouse trial was conducted to determine sensitivity of European coltsfoot to various herbicides. Wendy DesCamp (Washington State Noxious Weed Control Board) and Geraldine Saw (Snohomish County Noxious Weed Control Board) assisted in collecting plants at a field site near Arlington, WA March 26, 2018. Plants were in early flowering at the time they were dug. Rhizomes and crowns were transplanted into 4-inch pots filled with potting soil and maintained in the greenhouse at WSU NWREC. Coltsfoot plants were treated after transplanted rhizomes had produced about 4 leaves (4 to 6 inches in spread). The experiment consisted of nine herbicides applied postemergence, plus a nontreated check. Herbicides were selected as likely to provide some control of this species, and all are available for noncropland weed control; most are labelled for use in pasture and natural areas as well. Rates were selected based on the herbicide label for similar plants in the field. Plants were treated May 1 and were rated for percent visual injury May 14 two weeks after treatment (WAT) as compared to nontreated plants. Coltsfoot plants in each pot were then clipped to the soil line and allowed to regrow for four weeks to assess herbicide effectiveness. Plant foliage was again clipped June 14 (6 WAT) and fresh weight of above-ground biomass was recorded. The experimental design of the trial was a randomized complete block consisting of one coltsfoot plant per treatment/pot and was replicated five times (50 plants total experiment). Means were separated using Tukey's Honestly Significant Different Test ($P \leq 0.05$).

Results: All tested herbicides displayed excellent activity on European coltsfoot (Table 1). Streamline and Crossbow resulted in the greatest defoliation at 2 WAT, although control did not differ among any treatments by 6 WAT. In fact, all herbicides killed all treated plants except one plant treated with Rodeo. There were no significant differences in control between these products applied at tested rates at 6 WAT.

Discussion:

Greenhouse-grown plants are generally a little more sensitive to herbicides than field-grown plants, and certainly field-grown plants have bigger root systems. Consequently, coltsfoot infestations in the field should probably be treated at the highest labelled rate to gain adequate control. But all these products have excellent activity on European coltsfoot, so all could be considered for use against this species.

Table 1. Percent injury, percent control, and fresh weight of European coltsfoot plants after treatment with several herbicides in the greenhouse (2018).

Treatment ^a	Active ingredient(s)	Rate product	Injury ^b (2 WAT) %	Control ^b (6 WAT) %	Biomass ^c (6 WAT) g/plant
Rodeo	glyphosate	2.5%	73 c	99 a	0.4 b
Habitat	imazapyr	1%	76 bc	100 a	0 b
Vastlan	triclopyr	2 qt/a	78 bc	100 a	0 b
Method	aminocyclopyrachlor	6 oz/a	76 bc	100 a	0 b
Milestone	aminopyralid	5 fl.oz/a	75 c	100 a	0 b
Streamline	aminocyclopyrachlor + metsulfuron	9.5 oz/a	93 a	100 a	0 b
Crossbow	triclopyr + 2,4-D	3 qt/a	88 ab	100 a	0 b
Transline	clopyralid	1 pt/a	72 c	100 a	0 b
Distinct	dicamba + diflufenzopyr	4 oz/a	72 c	100 a	0 b
Nontreated	---	---	0 d	0 b	28.8 a

Numbers within a column followed by the same letter are not significantly different.

^aTreatments applied to 4- to 6-inch plants May 1, 2018. Herbicides mixed with 0.25% (v/v) nonionic surfactant prior to application.

^b0% = no injury, 100% = dead plant. Injury rated May 14, 2018 and control rated June 14, 2018.

^cFresh above-ground biomass collected and weighed June 14, 2018.