

Weed Control in Pastures and Forages

Cut surface (top) and basal application of herbicides on high cottonwood stumps. Manhattan KS 2005. Geyer, Wayne A. and Leyre Iriarte. The objective of this study was to test various herbicides in deadening the stumps of recently cut eastern cottonwood (Populus deltoides) trees. Immediate herbicide treatment is recommended, but often is not practical. The efficacy of applying five different chemicals at two heights on 18- inch high stumps was tested. The study is located five miles north of Manhattan, Kansas on an alluvial site just below Tuttle Creek Reservoir. Treatments were applied at the ground line or the cut surface top. Not treating the trees results in many undesirable stump sprouts, defeating the reason for cutting. Dormant trees were cut in early May and treated 90 days later with early sprouting on the stumps evident. Tree diameters were similar among treatments (approximately six inches). The study was laid out in a randomized design with 10 single-tree replications for a total of 110 trees. The herbicides were applied with a common garden sprayer. Either the cut surface or the basal four inches of the trunk were sprayed to the point of runoff. Low volatile ester formulations were used at the following rates: dicamba + 2,4-D + dichoprop at 5%, 2,4-D+ triclopyr at 5%, imazapyr RTU at 3%, fluroxypyr at 10%, and triclopyr at 5%. After two growing seasons the total number of sprouts were recorded.

We achieved complete sprout control after the second growing season when the herbicide was sprayed at the base of the stump or applied to the top of the stump. Residual stump height after cutting affects the number of live sprouts of mountain maple, paper birch, and pin cherry (1); at two years the number was higher with high stump height (30 inches).

In conclusion all herbicides as tested in this study can be used to control sprouting on recently cut cottonwood trees when applied at the tree base (four inches above the ground) or at the top of the stump (18 inches above the ground). In previous studies using the same herbicides with Siberian elm (2) and black walnut (3) we found the dicamba mixture was not effective at the top level. In Siberian elm 2,4-D+triclopyr and fluroxypyr did not control sprouting on recently cut trees at the top level. (Department of Horticulture, Forestry and Recreation Resources, Kansas State University, Manhattan KS 66506, [e-mail: wgeyer@oznet.ksu.edu](mailto:wgeyer@oznet.ksu.edu), FAX:785-532-5894 and Department of Vegetation Production: Botany and Vegetation Protection, Polytechnic University of Madrid, Madrid, [email: leire.iriarte@ upm.es](mailto:leire.iriarte@upm.es)).

Literature cited.

1. Jobidon, Robert. 1997. Stump height effects on sprouting of mountain maple, paper birch, and pin cherry at years-- 10 years. *The Forestry Chronicle*. Septembre/Octobre. Vol. 73, No. 5. 590-594.
2. Geyer, Wayne A. 2003. Cut surface (top) and basal application of herbicides on high Siberian elm stumps. Res. Rep. 2001. NCWSS.
3. Geyer, Wayne A. 2003. Cut surface (top) and basal application of herbicides on high Black walnut stumps. Res. Rep. 2005. NCWSS.

Table. Number of live stump sprouts by spray level after two years using five herbicides (Geyer and Iriarte).

Herbicide	Rate (% a.i.)	Spray level	Diameter (Inches)	Total (# sprouts)
Dicamba+ 2,4-D+ dichlorprop @ 5% (Trimec)	0.27+	Top	6.1	0
	1.62+	Base	5.4	0
2,4-D+ triclopyr @ 5% (Cross bow)	1.62+	Top	5.8	0
	1.59	Base	5.9	0
Imazapyr RTU @ 3% (Chopper)	0.86	Top	6.3	0
		Base	6.0	0
Fluroxypyr @ 10% (Vista)	2.62	Top	5.8	0
		Bse	5.9	0
Triclopyr @ 5% (Garlon 4)	3.0	Top	5.7	0
		Base	6.1	0
Control	--	--	6.2	11.2