

2,4,5-T SUSPENSION REVEALS NEED FOR EQUALLY EFFECTIVE ROW CONTROLS

By Bruce F. Shank, Editor

The temporary suspension of 2,4,5-T by the Environmental Protection Agency has increased interest in other herbicides for right-of-way vegetation control. In anticipation of suspension and cancellation proceedings against Silvex and 2,4,5-T, and to compare the effectiveness of all registered products for right-of-way vegetation control, Asplundh Environmental Services conducted studies over the past four years.

Their report indicates that loss of 2,4,5-T would affect costs and would require consideration of new combinations of herbicides to accomplish acceptable vegetation control at a reasonable cost. Herbicides which achieve the same broad spectrum control as 2,4,5-T and are comparable in cost present new characteristics to consider such as persistence, unwanted control of desirable vegetation, or ineffectiveness on a few prime weed tree species. However, the report clearly indicates that the loss of 2,4,5-T, although significant, would not cause severe disruptions in current right-of-way spray programs.

Dow Chemical and formulators of 2,4,5-T are taking an aggressive stand against cancellation. Hearings get underway in February and EPA expects them to last a year or more. Therefore, renewed registration of 2,4,5-T is unlikely in the short term. One positive sign that Dow has good ground to stand on is that EPA's own Scientific Advisory Panel suggested that 2,4,5-T presented no significant risk to human health if protective clothing is used by applicators and uses are restricted to specific, low hazard areas, including rights-of-way.

It is clear that mechanical methods cannot replace chemical treatments entirely. Certain

There are nonsuspended uses for 2,4,5-T. They include non-crop sites such as fence rows, vacant lots, certain industrial sites, and hedge rows. The herbicide may be used for these specific tasks until cancellation hearings are complete and a decision is final.

Registered herbicides to control woody vegetation.

Common Name	Trade Name	Manufacturer
amitrole	many	Amchem Prod. Inc.
AMS	Ammate	E. I. duPont
bromacil	Hyvar	E. I. duPont
2,4-D	many	
dicamba	Banvel	Velsicol
dichlorprop	many	Rhodia Inc.
fosamine	Krenite	E. I. duPont
glyphosate	Roundup	Monsanto
hexazinone	Velpar	E. I. duPont
picloram	Tordon	Dow Chemical
tebuthiuron	Spike	Elanco
triclopyr	Garlon	Dow Chemical

areas are not accessible to large clearing devices due to terrain factors. The helicopter equipped with application options has proven valuable for remote, large rights-of-way.

Alternative herbicides

According to Asplundh, the main reason 2,4,5-T has been the dominant herbicide in right-of-way weed control is the number of weed species it controls to an acceptable degree. In tests using basal and foliage spray methods, picloram, glyphosate, bromacil, and dicamba individually exceeded or matched 2,4,5-T in effectiveness. However, Asplundh reported unacceptable control of several prime weed tree species with picloram and dicamba when used alone. Glyphosate is comparatively expensive and bromacil at the effective rate is nonselective. As with 2,4,5-T, combinations are the key to the most effective control at the right cost. Therefore, other herbicides are needed to help control tough weed tree species such as ash, hickory and oak.

Before suspension of 2,4,5-T, a combination of picloram, 2,4-D, and 2,4,5-T was the most effective foliage treatment and a combination of picloram and 2,4,5-T was the most effective basal treatment, according to Asplundh.

Persistence is a problem with substitute herbicides. Picloram persists two to three times as long as 2,4,5-T and dicamba twice as long.

Glyphosate and fosamine both have potential despite limitations of cost and time of application.

Asplundh concluded in the event of a 2,4,5-T/Silvex cancellation, a combination of picloram with 2,4-D or dichlorprop or a combination of dicamba and 2,4-D or dichlorprop would be most logical.

Other herbicides fit specific situations most effectively. For example, AMS, glyphosate, and fosamine are safe to use on watersheds. AMS, although corrosive to equipment, is very safe and drift-free near sensitive crops. Sensitivity of crops to picloram is one of its drawbacks in addition to persistence. Nevertheless, picloram may very likely be the primary substitute for 2,4,5-T.

Since the Asplundh study, Dow has obtained registration for Garlon (triclopyr) to help provide control for tough tree species like ash and oaks. It is effective at selective rates and can be applied by high or low volume equipment or by helicopter. Dow intends to offer combinations with Garlon 3A for broad spectrum control.

Asplundh estimated that cancellation (or suspension) of 2,4,5-T will increase ROW maintenance costs by 42 percent over current expenditures, with electric utilities paying the brunt of the increase. This represents a \$28.3 million increase overall and comes at a time of already rapidly escalating energy costs for consumers.

Perhaps the toughest prosecution against 2,4,5-T and Silvex is from self proclaimed human victims, not mice or laboratory animals. A school teacher who miscarried suspected dioxin contamination of stream water by nearby spraying in timberland. Over a three-year period she collected information on miscarriages in the area, and with a physician's help, submitted her report to the media, legislators, and the Environmental Protection Agency.

The issue then became an emotional one and one of the first to be supported by information on

human suffering. EPA's Scientific Advisory Panel certainly had this data when they considered 2,4,5-T and Silvex and recommended that a ban was not required. Now, it is the manufacturers, users, and the Scientific Advisory Panel against the full power of the ecology band wagon. Hearings will begin in February to provide a judge with enough information to make a decision. And even if he rules not to cancel registration, EPA Administrator Douglas Costle can overrule. **WTT**

Relative comparison of effectiveness between 2,4,5-T and potential alternative chemical on woody vegetation based on data from Bovey (1977).¹

CHEMICAL	BASAL SPRAY			FOLIAGE SPRAY		
	Number of Species Susceptible	Total No. of Species	% Control	Number of Species Susceptible	Total No. of Species	% Control
2-4-5-T	120	189	63	89	280	32
AMS	56	165	34	45	194	23
bromacil	135	169	80	53	73	73
2,4-D	44	152	29	58	258	22
dicamba	36	57	63	41	130	32
dichlorprop	16	64	25	20	117	17
glyphosate	—	—	—	73	75	97
picloram	55	66	83	84	155	54

¹USDA Handbook No. 493, by Rodney Bovey (1977)

Relative comparisons of 2,4,5-T versus alternative herbicides.

Chemical	General Efficacy	Methods of Application	Cost Per Treatment	Advantages	Disadvantages
2,4-D	+ ¹	=	=		
dichlorprop	+	=	=		
AMS	+	+	=	Safe on watersheds and near sensitive crops.	High rates required. Corrosive to application equipment.
bromacil	—	+	=		Leaches readily, injurious to desirable woody plants. Soil sterilant at rates needed for brush control.
glyphosate ²	—	+	=/+	Safe on watersheds. No brownout with foliar application.	Only used in foliar season; nonselective.
fosamine ²	—	+	=/+	Safe on watersheds. No brownout with foliar application.	Only used in foliar season.
dicamba	=	—	+		Best when used in combination with 2,4,5-T. More persistent.
picloram	—	—	=		Sensitivity of certain agricultural crops. More persistent.

¹ + 2,4,5-T is superior to alternative
 = 2,4,5-T is comparable to alternative
 — 2,4,5-T is inferior to alternative

² New herbicides, evaluation based on limited data.