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Use of Herbicides In Northern Minnesota for Forestry Purposes - 1983*

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ABSTRACT

A 1983 survey of herbicides applied for forestry use in northern Minnesota indicated that about 29,000 acres were treated with 19 different herbicides or combinations. About 70 percent of the acres were treated for release and the remainder for site preparation. Seventy-three percent of the herbicide application was aerial. Comparisons were drawn with a survey done about 10 years earlier.

INTRODUCTION

In January, 1984, a survey was conducted in northern Minnesota to determine the extent of herbicide usage for forestry purposes in 1983. Questionnaires were sent to 14 forest management agencies including private industrial, county, state, and federal. The agencies selected were known to be the primary users of herbicides in northern Minnesota. They were asked to indicate acreage treated, whether it was for site preparation or for release and indicate what herbicide was used. There was a 100 percent response to the questionnaire.

Not included in the survey were right-of-way users, tree nurseries, Christmas tree growers and small woodland owners. These forestry-related uses would substantially increase the total acreage treated.

SURVEY RESULTS

The results of the survey are summarized in Table 1. Not included in the summary are small-scale experimental trials with unlabeled herbicides. This would add about 6.5 acres to the total treated acreage. The acreage treated for release and by ground methods includes cut stem and basal application by manual injection or backpack sprayer.

A total of about 29,000 acres of forest land in northern Minnesota were treated with herbicides in 1983 (Table 1). This is about only 0.17 percent of the forested acres in Minnesota. It is also very small compared to 23 million acres treated with herbicides for agricultural purposes (Engen and Rock, 1983). Forestry use of herbicides doubled between 1983 and 1973-1975 when a similar survey was made (Hansen and Sucoff, 1978).

Use of herbicides for release increased 50 percent while the use for site preparation increased over sixfold. During the 1973-1975 period, about 10 percent of the acreage treated was for site preparation. This compares to 30 percent for site preparation in 1983.

It is also interesting to note that the percentage of acres treated aerially has not changed much in the past ten years. The earlier survey showed that about 78

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percent of the total was aerially sprayed. This compares with about 73 percent aerial application in 1983. The remaining 27 percent was ground treated by manual injection or backpack sprayer.

There was a dramatic change between 1973-1975 and 1983 in the kinds of herbicides used. The earlier survey indicates that only the phenoxyacetic herbicides, 2,4-D and 2,4,5-T were used for releasing plantations. This extensive usage of the phenoxy herbicides continued until 1978 and 1979 according to Sajdak's (1981) survey of herbicide usage in the Lake States. He reported that 2,4-D, alone or in combination with other compounds, was used on over 99 percent of the treated acreage. The 1983 survey shows that 2,4-D used alone or in combination accounted for only about 10 percent of the total acres treated in Minnesota (Table 1).

This change is undoubtedly an outcome of the 1979 ban of 2,4,5-T for forestry use and the recent controversy surrounding the use of 2,4-D. Since that time a number of new herbicides have been registered for forestry use (Table 1). For example, Roundup^{1/} (a.i. = glyphosate) was used on about 60 percent of the treated acreage, Velpar^{2/} (a.i. = hexazinone) on about 10 percent and Garlon 4^{3/} (a.i. = triclopyr) on about 5 percent. Although in 1983, Garlon 4 was applied for release only

under an experimental use label, it has since been registered for plantation release. An additional 10 percent of the 1983 acreage was treated with Tordon^{3/} compounds (a.i. = picloram), most of which were also available at the time of the 1973-1975 survey.

Table 2 presents acres treated for release and site preparation by user categories. The federal government accounted for about 40 percent of the total 1983 acres treated with herbicide in northern Minnesota for forestry purposes, they were followed by the Minnesota DNR, with 29 percent, and forest industries with 22 percent. The six northern Minnesota counties included in the survey accounted for the remainder.

LITERATURE CITED

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^{1/} Registered trademark of Monsanto Agricultural Products Co.

^{2/} Registered trademark of E.I. DuPont De Nemours & Co., Inc.

^{3/} Registered trademark of The Dow Chemical Co.

Table 1. Herbicides used in northern Minnesota in 1983 for forestry purposes.

All figures are number of acres.^{1/}

Herbicide Product Name ^{2/}	Purpose		Methods	
	Release	Site Preparation	Aerial	Ground
Amizine® ^{3/}	68	-	-	68
Banvel® ^{4/}	9	-	-	9
Esteron 99C® ^{5/}	724	-	699	25
Esteron 99C® +Tordon. K® ^{5/}	-	773	773	-
Formula 40® ^{5/}	468	-	-	468
Garlon 4® ^{5/}	1,365	-	1,365	-
Garlon 4® +Oust® ^{6/}	6	-	6	-
Garlon 4® +Tordon 101® ^{5/}	-	107	-	107
Oust®	23	641	45	619
Roundup® ^{7/}	12,106	5,883	16,690	1,299
Roundup® +Oust®	-	50	-	50
Princep® ^{8/}	313	310	-	623
Tordon 101R® ^{5/}	1,822	45	-	1,867
Tordon K® ^{5/}	-	123	26	97
Weedone 170® ^{3/}	418	-	418	-
Weedone LV4® ^{3/}	-	7	-	7
Weed Rhap® ^{9/}	440	112	541	11
Velpar® ^{10/}	2,306	449	506	2,249
Velpar® Gridball® ^{10/}	446	15	-	461
Total	20,514	8,515	21,069	7,960

Total acreage treated = 29,029

^{1/} This is gross acreage and includes spot and band application.

^{2/} Listing of product names does not imply endorsement or criticism by the University of Minnesota.

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Table 2. Number of acres treated in 1983 in northern Minnesota for release and site preparation by aerial and ground application by user categories.

User Category	Purpose		Method	
	Release	Site Preparation	Aerial	Ground
Forest Industry (3)	3194	3093	5244	1043
Federal Government (4)	9483	2080	8088	3475
State DNR	5929	2459	6127	2261
Counties (6)	1908	883	1610	1181
Total	20514	8515	21069	7960