Pesticide Use and Pest Management Practices for Major Crops in North Dakota - 2000

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PESTICIDE DRIFT PROBLEMS AND MANAGEMENT

Spray drift during pesticide applications is an increasing concern in agriculture. Diversification of crops, more active and non-selective herbicides, and a greater awareness of pesticides in the environment have caused spray drift management to become every applicator's business. Spray drift is the movement of a pesticide through the air, during or after application, to a site other than the intended target. Drift may occur as vaporized active pesticide from the application site, but it is usually the physical movement of very small drops from the target area.

To obtain some baseline information on spray drift issues, survey respondents were asked questions regarding their experiences with pesticide spray drift problems and methods they use to manage drift.

Of the 3,580 respondents, 8.9% reported having experienced spray drift injury on their farm (Table 61). The average was 1.5 incidents per report to the enumerator, with an average of 28.7 acres affected for each incident. Responses were similar for all reporting districts.

A number of drift control methods are available to applicators. They include proper volume selection, drift retarding nozzles and adjuvants, and shielded spray booms.

Of particular interest was the spray volume used for postemergent herbicides. The most frequently used volume range was five to 10 gallons per acre, reported by 62.8% of the respondents (Table 62). The second most frequently used range was 2.5 to five gallons per acre, reported by 25.4% of the respondents. By reducing spray volume, the herbicide concentration increases to maintain the same dose of active ingredient. As spray volume is reduced, the droplet size decreases, and increases drift potential.

Potential drift problems associated with reduced volumes can be addressed through the use of nozzles, adjuvants and shields. Of these practices, 16.4% used drift retarding nozzles, 15.3% used drift retarding adjuvants, and 11.6% used spray boom shields (Table 63). Other methods, such as reduced pressure, increased nozzle size, or watching wind speed were mentioned by 31.5% of the respondents.

TABLE 61. Respondents who indicated pesticide drift injury, their number of incidents, and the acres affected

District	Total Responses	% Reporting Drift Injury	Incidents Reported	Avg. Incidents per Report	Affected Acres	Acres Affected per Report
Northwest	490	11.0	77	1.4	1313	24.3
North Central	430	10.9	68	1.5	1480	31.5
Northeast	462	10.6	76	1.6	1771	36.1
West Central	409	7.1	39	1.3	344	11.9
Central	366	10.1	59	1.6	1130	30.5
East Central	283	9.5	41	1.5	781	28.9
Southwest	292	5.1	28	1.9	756	50.4
South Central	420	4.5	30	1.6	465	24.5
Southeast	428	9.3	61	1.5	1043	26.1
State Totals	3580	8.9	479	1.5	9083	28.7

TABLE 62. Spray volume used by respondents when applying postemergent herbicides with ground spray equipment

Spray Volume (gallons per acre)	Respondents	
	Total	%
2.5 to 5	544	25.4
5 to 10	1345	62.8
10 to 15	212	9.9
15 to 20	31	1.5
greater than 20	10	0.5

TABLE 63. Percent of respondents who managed spray drift using different practices

District	Total Responses	Drift Retarding Nozzles	Drift Retarding Adjuvants	Sprayer Boom Shields	Other Methods
		%			
Northwest	490	20.2	18.8	17.3	35.3
North Central	430	20.0	18.6	13.3	31.2
Northeast	462	18.4	18.4	12.8	31.0
West Central	409	14.9	10.3	7.3	34.5
Central	366	12.8	13.4	7.9	31.1
East Central	283	23.0	22.3	11.3	35.0
Southwest	292	13.7	8.9	13.7	30.5
South Central	420	9.3	7.6	5.2	25.7
Southeast	428	15.4	18.5	14.0	29.9
State Totals	3580	16.4	15.3	11.6	31.5