

Quantitative Usage Analysis for 2,4-D

Case Number: 0073

Date: 8-9-01 Analyst: Alan Halvorson

Based on pesticide usage information mainly for 1992 through 2000 for agriculture and 1993 through 1999 for non-agriculture, total annual domestic usage of 2,4-D is approximately 46 million pounds active ingredient (a.i.), with 30 million pounds a.i. (66%) used by agriculture and 16 million pounds a.i. (34%) used by non-agriculture. In terms of pounds a.i., total 2,4-D usage is allocated mainly to pasture/rangeland (24%), lawn by householder with fertilizer (12%), Spring wheat (8%), Winter wheat (7%), lawn/garden by lawn care operators/landscape maintenance contractors (7%), lawn by householder alone (without fertilizer) (6%), field corn (6%), soybeans (4%), summer fallow (3%), hay other than alfalfa (3%) and roadways (3%). Agricultural sites with at least 10% of U.S. acreage treated include Spring wheat (51%), filberts (49%), sugarcane (36%), barley (36%), seed crops (29%), apples (20%), rye (16%), Winter wheat (15%), cherries (15%), oats (15%), millet (15%), rice (13%), soybeans (12%) and pears (10%). For agriculture, rates per application and rates per year are generally less than 1.50 pounds a.i. per acre and 2.00 pounds a.i. per acre, respectively.

2,4-D	Case #:	0073	AI #:	various(*)	EPA QUANTITATIVE USAGE ANALYSIS				Analyst: Alan Halvorson			8-9-01					
Site	Acres	Acres Treated (000)		% Crop Treated		Lb AI Appl'd (000)		Avg Applic Rates/Acre			States of Most Usage (% of total lb ai used by these states)						
	(000) Grown																
	Avg	Est Max	Avg	Est Max	Avg	Est Max	lb ai/ year	# appl/ year	lb ai/ appl								
Alfalfa	23,704	46	139	0.2%	0.6%	23	69	0.50	1.0	0.48	GA	AR	TX	MT	WA	ID	56%
Barley	5,914	2,138	2,550	36%	43%	1,008	1,290	0.47	1.0	0.46	ND	MT	-				
Beans/Peas, Dry	2,133	20	60	1%	3%	12	30	0.59	1.0	0.59	MN	WA	UT	MI	ID	FL	83%
Canola/Rapeseed	1,281	10	19	1%	2%	6	11	0.58	1.0	0.58	-						
Corn, Field	75,241	6,413	8,720	9%	12%	2,938	3,660	0.46	1.0	0.44	IL	IN	OH	IA	MN	NE	68%
Cotton	13,793	173	345	1%	3%	117	234	0.68	1.0	0.67	SC	TX	LA	GA			85%
Fallow, Summer	22,879	1,549	2,239	7%	10%	1,386	2,003	0.89	1.3	0.69	KS	CO	ND	WA	MT	SD	83%
Flax	143	6	13	4%	9%	3	7	0.50	1.0	0.50	ND	MN					100%
General Farm Use	-	-	-	-	-	1,082	1,623	-	-	-	-						
- Bldgs/Structures	-	-	-	-	-	184	276	-	-	-	-						
- Roads/Ditches/Misc	-	-	-	-	-	447	670	-	-	-	-						
- Lots/Farmsteads	22,876	601	901	3%	4%	451	676	0.75	1.0	0.75	IA	ID	UT	NE	KS	OR	47%
Hay, Other	33,777	1,921	2,634	6%	8%	1,330	1,824	0.69	1.1	0.60	TX	OK	KS	-			
Millet	318	48	73	15%	23%	21	35	0.44	1.0	0.44	SD	ND	NE				86%
Oats	4,036	611	780	15%	19%	284	380	0.46	1.0	0.46	SD	TX	-				
Pasture/Rangeland	469,536	15,024	22,536	3%	5%	10,914	16,371	0.73	1.2	0.62	-						
- Pastured Cropland	63,545	3,875	5,167	6%	8%	2,600	3,467	0.67	1.0	0.67	TX	OK	KS	IA	AR	MO	62%
Peanuts	1,416	25	50	2%	4%	18	30	0.73	1.0	0.70	MS	AL	GA	TX			81%

2,4-D (Cont'd)

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EPA QUANTITATIVE USAGE ANALYSIS

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8-9-01

Site	Acres (000) Grown	Acres Treated (000)		% Crop Treated		Lb AI Appl'd (000)		Avg Applic Rates/Acre			States of Most Usage (% of total lb ai used by these states)
		Avg	Est Max	Avg	Est Max	Avg	Est Max	lb ai/ year	# appl/ year	lb ai/ appl	
Potatoes	1,291	9	26	1%	2%	1	4	0.17	1.8	0.10	ND CA FL ID OR MT 82%
Rice	3,231	431	562	13%	17%	404	527	0.94	1.0	0.92	LA AR MS 87%
Rye	298	48	63	16%	21%	24	30	0.50	1.0	0.50	GA SC ND MN NE SD 85%
Seed Crops	1,383	401	501	29%	36%	220	275	0.55	1.0	0.55	OR CA MT MO FL WA 82%
Sorghum	9,077	1,061	1,415	12%	16%	534	667	0.50	1.1	0.46	KS NE TX OK SD MO 83%
Soybeans	70,993	3,659	5,165	5%	7%	1,708	2,410	0.47	1.0	0.46	IL IN IA OH MO NE 80%
Sugarcane	939	340	500	36%	53%	335	490	0.99	1.3	0.75	LA FL 100%
Sunflowers	2,040	27	80	1%	4%	14	50	0.52	1.0	0.50	KS MN SD ND 90%
Wheat, Spring	18,903	9,684	12,105	51%	64%	3,786	4,733	0.39	1.1	0.37	ND MT 83%
Wheat, Winter	42,403	6,564	10,130	15%	24%	3,330	5,140	0.51	1.1	0.48	KS MT WA CO OK SD 63%
Wild Rice	26	2	3	8%	10%	0.4	0.6	0.20	1.0	0.20	MN 100%
Woodland	60,478	629	1,259	1%	2%	397	794	0.63	1.0	0.63	OR ND KS MT WA CO 59%
Almonds	583	40	60	7%	10%	51	70	1.30	1.3	1.00	CA 100%
Apples	477	94	170	20%	36%	129	250	1.38	1.1	1.21	WA NY PA MI ME VA 70%
Apricots	23	1	2	5%	8%	2	3	1.88	1.4	1.39	-
Asparagus	77	7	12	9%	15%	10	20	1.32	1.2	1.10	MI CA WA 95%
Beans/Peas, Vegetable	667	3	8	0.4%	1.2%	3	8	1.00	1.2	0.84	WA OR CA NY WI 85%
- Beans, Lima	46	1	2	2%	4%	2	3	1.80	1.2	1.50	-
- Peas, Green	272	1	3	0.4%	1.1%	1	3	0.99	1.2	0.83	WA -
Blueberries	62	0.1	0.3	0.2%	0.5%	0.1	0.2	0.51	1.1	0.46	MI OR NJ 100%
Cherries	105	16	25	15%	24%	18	30	1.09	1.2	0.91	OR MI UT WA 87%
Cranberries	32	2	3	6%	9%	4	6	2.00	1.1	1.83	WI WA OR 100%
Filberts	31	15	18	49%	58%	26	35	1.69	2.7	0.64	OR 100%
Grapefruit	165	2	3	1%	2%	0.6	1.1	0.34	1.6	0.21	CA FL 100%
Grapes	1,006	5	15	1%	2%	4	13	0.87	1.2	0.73	CA WA 90%
Lemons	72	0.4	1.1	0.5%	1.5%	0.4	1.1	1.06	2.9	0.37	CA 100%
Nectarines	34	2	3	6%	10%	1	1	0.39	1.4	0.29	-
Oranges	940	21	66	2%	7%	7	20	0.32	1.2	0.27	CA 88%
Peaches	158	12	19	8%	12%	16	25	1.29	1.4	0.95	CA SC PA NJ MI WA 75%
Pears	70	7	10	10%	14%	11	15	1.49	1.4	1.10	CA OR WA 88%
Pecans	496	12	25	3%	5%	12	20	1.00	1.2	0.81	TX GA KS AR 86%
Pistachios	100	3	5	3%	5%	3	5	1.00	1.2	0.80	-
Prunes/Plums	151	12	25	8%	17%	13	25	1.13	1.2	0.94	CA 83%
Strawberries	47	2	3	4%	7%	3	5	1.28	1.1	1.18	PA OH NY WI NC MI 67%
Sweet Corn	678	20	34	3%	5%	10	15	0.51	1.0	0.48	MN ID NE WI UT CT 54%
Walnuts	229	14	20	6%	9%	29	40	2.13	2.2	0.98	CA 96%
TOTAL AGRICULTURE						30,249	43,298				
Aquatic Areas	-	-	-	-	-	512	800	-	-	-	-
Electric Utilities	-	-	-	-	-	164	425	-	-	-	-
Forestland	-	-	-	-	-	136	201	-	-	-	-
Golf Courses	-	-	-	-	-	414	500	-	-	-	-
Horticulture	-	-	-	-	-	18	35	-	-	-	-

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Indus Facil/Pipelines	-	-	-	-	-	406	1,150	-	-	-	-
Institutional Turf	-	-	-	-	-	654	1,000	-	-	-	-
Lawn/Gardn by LCO/LMC	-	-	-	-	-	3,294	4,000	-	-	-	-
Lawn by Hsehld, Alone	-	-	-	-	-	2,757	3,000	-	-	-	-
Lawn by Hsehld w/Fert	-	-	-	-	-	5,512	6,000	-	-	-	-
Railroads	-	-	-	-	-	213	300	-	-	-	-
Roadways	-	-	-	-	-	1,319	1,600	-	-	-	-
Turf Farms	-	-	-	-	-	351	500	-	-	-	-
TOTAL NON-AGRICULTURE						15,751	19,511				
GRAND TOTAL						46,000	62,809				

(*) Registrant-supported active ingredients are 30001, 30004, 30016, 30019, 30025, 30035, 30053, 30063 and 30066.

NOTES ON TABLE DATA

- Usage data primarily cover 1992 - 2000 for agriculture and 1993 - 1999 for non-agriculture.
- Calculations of the above numbers may not appear to agree with each other because they are displayed as rounded.
- A dash(-) indicates that information is not readily available or is not applicable.
- Sub-categories under a crop group are usually not exhaustive.

CROP/SITE GROUPS AND DEFINITIONS

- Institutional turf consists of maintained turf of educational facilities, cemeteries and parks.
- LCO = lawn care operators.
- LMC = landscape maintenance contractors.

DATA SOURCES

- US EPA, proprietary data, 1993 - 1999.
- USDA/NASS, Agricultural Chemical Usage --
 - Field Crops Summary, 1998 - 2000.
 - Fruits and Nuts Summary, 1999.
 - Livestock and General Farm Summary, 1997.
 - Vegetables Summary, 1998.
- NCFAP, circa 1992 & circa 1997.