

**Pennsylvania and Program States <sup>1,2</sup>: Apples – Agricultural Chemical Applications, 2011**

Active Ingredient	Area Applied		Applications		Rate per Application		Rate per Crop Year		Total Applied	
	PA	US	PA	US	PA	US	PA	US	PA	US
	(percent)		(number)		(pounds per acre)		(pounds per acre)		(1,000 lbs.)	
<b>Fungicides <sup>3</sup></b>										
Basic Copper Sulfate	7	9	1.2	1.3	2.771	2.799	3.212	3.536	5,000	86,500
Boscalid	7	21	2.3	1.2	0.164	0.226	0.384	0.283	600	15,900
Captan	63	32	6.2	7.2	1.307	1.886	8.142	13.506	108,500	1,173,400
Chlorothalonil	1	1	1.7	1.6	1.388	2.49	2.383	3.911	400	8,100
Copper Hydroxide	2	8	1.2	1.2	2.081	2.73	2.521	3.299	1,300	69,000
Copper Sulfate	1	1	1.1	1.4	3.528	3.88	3.97	5.435	900	8,700
Cyprodinil	17	17	2.5	1.8	0.126	0.176	0.311	0.325	1,100	15,100
Difenoconazole	37	24	2.9	2.3	0.092	0.115	0.27	0.268	2,100	17,400
Fenarimol	2	8	2.6	1.3	0.053	0.072	0.138	0.092	(Z)	2,100
Fenbuconazole	10	10	1.8	2	0.11	0.097	0.201	0.194	400	5,400
Kresoxim-Methyl	25	15	3.3	1.8	0.087	0.121	0.289	0.218	1,500	9,100
Mancozeb	49	40	5.4	4.1	1.61	2.443	8.644	10.117	88,300	1,097,300
Metiram	10	5	5.2	3.7	1.577	2.487	8.19	9.2	17,300	125,800
Mono-Potassium Salt	10	4	4.1	2.4	0.605	1.41	2.509	3.365	5,300	38,500
Myclobutanil	21	35	2.6	1.8	0.091	0.111	0.237	0.198	1,000	18,700
Pyraclostrobin	7	21	2.3	1.3	0.083	0.115	0.195	0.144	300	8,100
Pyrimethanil	19	5	1.8	1.4	0.151	0.24	0.269	0.342	1,100	4,900
Streptomycin Sulfate	17	21	2	1.9	0.199	0.253	0.408	0.481	1,400	27,100
Sulfur	3	39	1.4	2	3.36	5.203	4.657	10.471	3,400	1,094,500
Thiophanate-Methyl	47	19	3.9	3	0.305	0.396	1.192	1.173	11,800	62,000
Trifloxystrobin	26	27	2.9	1.5	0.044	0.064	0.128	0.094	700	7,000
Ziram	6	13	3.3	2.1	2.008	3.229	6.666	6.905	7,900	237,300
<b>Herbicides <sup>4</sup></b>										
2, 4-D	5	1	1.1	1.1	0.396	0.517	0.43	0.545	400	1,000
2, 4-D, Dimeth. Salt	13	10	1.3	1.1	0.784	0.805	1.044	0.909	2,900	25,100
Carfentrazone-Ethyl	(Z)	4	1	1.1	0.027	0.023	0.027	0.026	(Z)	300
Diuron	7	4	1	1.1	1.755	1.593	1.774	1.7	2,400	17,100
Flumioxazin	1	2	1	1	0.31	0.207	0.311	0.21	(Z)	900
Glyphosate Iso. Salt	10	25	1.1	1.4	1.147	1.152	1.275	1.604	2,700	110,600
Glyphosate Pot. Salt	1	5	1.1	1.2	1.644	0.865	1.854	1.021	200	12,700
Norflurazon	3	3	1	1	1.544	1.543	1.603	1.562	1,000	14,600
Oryzalin	3	2	1	1.3	2.856	2.004	2.975	2.585	1,600	13,200
Paraquat	18	15	1.3	1.2	0.592	0.861	0.748	1.016	2,800	41,100
Pendimethalin	13	8	1	1.2	2.257	2.363	2.348	2.891	6,600	60,200
Rimsulfuron	1	4	1	1.3	0.063	0.053	0.063	0.067	(Z)	700
Simazine	1	3	1	1.1	1.869	1.676	1.877	1.837	500	14,100
Terbacil	2	2	1	1	0.484	0.976	0.484	0.997	200	5,200
<b>Insecticides <sup>5</sup></b>										
Abamectin	16	15	1.9	1.2	0.01	0.013	0.019	0.016	100	600
Acetamiprid	33	26	2.1	1.7	0.076	0.108	0.163	0.187	1,100	13,000
Azinphos-Methyl	29	24	2.2	1.6	0.382	0.776	0.824	1.213	5,100	79,800
Beta-Cyfluthrin	3	4	1.9	1.1	0.011	0.019	0.021	0.022	(Z)	200
Carbaryl	33	46	1.3	1.3	0.853	1.163	1.132	1.566	7,800	196,300
Chlorantraniliprole	48	45	2.3	1.5	0.047	0.074	0.108	0.111	1,100	13,700
Chlorpyrifos	42	44	1.5	1.2	0.962	1.514	1.428	1.759	12,500	211,100
Cyfluthrin	16	5	1.8	1.4	0.017	0.03	0.03	0.042	100	600
Diazinon	8	6	1.8	1.2	0.542	1.318	0.979	1.553	1,500	24,800
Dinotefuran	5	(Z)	1	1	0.141	0.141	0.145	0.145	200	200
Endosulfan	2	2	1.1	1.3	0.607	1.73	0.673	2.221	300	12,400
Esfenvalerate	5	7	2	1.5	0.024	0.041	0.047	0.063	100	1,200
Fenpropathrin	10	3	1.9	1.7	0.173	0.262	0.324	0.438	700	4,200
Fenpyroximate	4	7	1.6	1.1	0.061	0.085	0.1	0.092	100	1,700
Flubendiamide	6	7	2.7	1.5	0.139	0.129	0.382	0.187	400	3,300
Imidacloprid	30	39	2.3	1.5	0.036	0.072	0.081	0.109	500	11,600
Indoxacarb	7	3	2.6	1.4	0.068	0.086	0.175	0.121	300	900
Lambda-Cyhalothrin	33	15	2.4	2.2	0.022	0.031	0.053	0.067	400	2,700
Methomyl	19	2	3	2.6	0.421	0.514	1.25	1.334	5,100	7,900
Methoxyfenozide	3	15	1.9	1.2	0.17	0.232	0.319	0.271	200	11,000
Permethrin	2	1	1.4	1.1	0.142	0.147	0.201	0.164	100	500
Phosmet	13	14	3.9	2.4	1.271	1.652	5.002	3.902	13,300	150,300
Spinetoram	49	29	2.3	1.5	0.028	0.042	0.064	0.061	700	4,700
Spinetoram -L	49	29	2.3	1.5	0.028	0.042	0.064	0.061	700	4,700
Thiacloprid	19	21	2.5	1.4	0.125	0.179	0.309	0.25	1,200	14,600
Thiamethoxam	26	13	1.8	1.5	0.033	0.056	0.06	0.084	300	3,000
<b>Other <sup>6</sup></b>										
Benzyladenine	14	22	1.2	1.2	0.043	0.039	0.05	0.047	100	2,900
Butenoic Acid Hydro.	3	12	1.1	1.2	0.09	0.082	0.097	0.098	100	3,200
Ethephon	15	19	1.9	1.2	0.169	0.497	0.329	0.597	1,100	30,300
Flutriafol	2	9	2.1	1.3	0.086	0.093	0.18	0.12	100	2,900
Gibberellins A4A7	4	21	1.5	1.4	0.016	0.043	0.024	0.059	(Z)	3,500
Mineral Oil	37	55	1.7	2.1	9.961	16.155	16.892	33.186	131,500	4,916,900
NAA, Sodium	32	14	1.4	1.9	0.011	0.01	0.016	0.019	100	700
Prohexadione Calcium	8	25	2.2	1.5	0.09	0.229	0.195	0.339	300	22,800
Spirodiclofen	8	6	1.6	1.1	0.146	0.244	0.227	0.275	400	4,700

<sup>1</sup> The 7 Program States consist of: California, Michigan, New York, North Carolina, Oregon, **Pennsylvania** and Washington. <sup>2</sup> (Z) is displayed for estimates less than half of the unit shown. <sup>3</sup> The following fungicides were withheld from the table to avoid disclosing data for individual farms: Calcium Polysulfide, Copper Chloride Hyd., Dodine, Mefenoxam, Oxytetracycline Calc, PCNB, Phosphorous Acid, Thiram, Triadimefon, and Triflumizole. <sup>4</sup> The following herbicides were withheld from the table to avoid disclosing data for individual farms: Atrazine, Clopyralid Mono Salt, Dicamba Dimet. Salt, Dichlobenil, Fluroxypyr 1-MHE, Glufosinate Ammonium, Glyphosate Amm. Salt, Oxyfluorfen, and Penoxsulam. <sup>5</sup> The following insecticides were withheld from the table to avoid disclosing data for individual farms: BT Kurstaki ABTS-351, Buprofezin, Clofentezine, Clothianidin, Dicofof, Emamectin Benzoate, Etoazole, Fonicamid, Gamma-Cyhalothrin, Hexythiazox, Malathion, Methidathion, Novaluron, Oxamyl, Petroleum Distillate, Pyridaben, Pyriproxyfen, Spinosad, Spirotetramat, Xylene, and Zeta-Cypermethrin. <sup>6</sup> The following other pesticides were withheld from the table to avoid disclosing data for individual farms: Cytokinins, E-8-Dodeceny Acetat, Hydrogen Peroxide, NAA Ammonium Salt, Tetradecen-1-OL (Z), Tetradecen-1-YL (E), Z-8-Dodecanol, and Z-8-Dodecen Acetate.