

**Table 9. Agricultural Chemicals Used, Including Fertilizer and Lime: 1987 and 1982**

[Data are based on a sample of farms. For meaning of abbreviations and symbols, see introductory text]

Chemicals used	Counties							
	Michigan	Alcona	Alger	Allegan	Alpena	Antrim	Arenac	
Commercial fertilizer ----- farms, 1987..	37 282	75	32	1 124	273	164	277	
	1982..	43 029	127	40	1 406	325	145	
	acres on which used, 1987..	5 300 902	6 203	2 740	134 348	23 444	21 481	42 983
	1982..	5 974 430	7 171	1 717	164 026	22 119	19 721	46 486
Cropland fertilized, except pastureland ----- farms, 1987..	36 873	70	31	1 118	272	164	277	
	1982..	42 593	121	39	1 378	317	145	
	acres on which used, 1987..	5 257 909	5 513	(D)	133 983	23 324	21 186	42 993
	1982..	5 928 803	6 719	1 684	163 490	21 485	19 312	46 291
Pastureland and rangeland fertilized ----- farms, 1987..	1 771	12	3	30	14	8	-	
	1982..	1 983	8	4	78	36	23	
	acres on which used, 1987..	42 993	690	(D)	365	120	295	-
	1982..	45 627	452	33	536	634	409	195
Lime ----- farms, 1987..	6 799	9	5	279	25	42	31	
	1982..	6 756	8	9	338	1	5	
	acres on which used, 1987..	301 302	204	151	11 130	715	2 364	492
	1982..	252 990	160	164	13 417	(D)	2 297	210
Sprays, dusts, granules, fumigants, etc., to control—								
	Insects on hay and other crops ----- farms, 1987..	15 082	7	9	634	56	101	94
	1982..	15 597	23	9	736	53	79	82
	acres on which used, 1987..	1 532 318	490	49	58 644	4 007	5 717	8 700
1982..	1 811 518	(D)	251	80 369	3 990	6 799	10 922	
Nematodes in crops ----- farms, 1987..	2 132	-	1	168	3	9	14	
	1982..	2 477	-	1	102	7	31	
	acres on which used, 1987..	205 371	-	(D)	12 810	1 015	1 317	1 300
	1982..	275 551	-	(D)	8 689	267	1 269	2 177
Diseases in crops and orchards ----- farms, 1987..	5 320	9	6	214	17	85	18	
	1982..	5 399	6	4	198	23	58	
	acres on which used, 1987..	336 227	54	(D)	12 482	1 145	5 679	2 144
	1982..	345 088	6	16	12 054	786	5 124	4 129
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	27 595	43	20	820	144	123	206	
	1982..	30 440	38	24	949	133	111	
	acres on which used, 1987..	3 800 607	3 068	877	82 271	14 804	12 518	34 376
	1982..	4 288 784	3 114	822	107 671	10 784	12 160	36 333
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	2 204	-	5	86	16	27	13	
	1982..	2 001	-	-	83	10	23	
	acres on which used, 1987..	118 970	-	54	2 452	1 264	3 441	778
	1982..	127 566	-	-	3 841	(D)	1 741	500

  

Chemicals used	Counties							
	Baraga	Barry	Bay	Benzie	Berrien	Branch	Calhoun	
Commercial fertilizer ----- farms, 1987..	27	533	860	97	1 175	860	867	
	1982..	35	673	933	135	888	928	
	acres on which used, 1987..	1 038	69 038	135 253	5 945	102 863	108 905	105 335
	1982..	1 041	79 202	147 340	6 858	110 697	132 981	149 674
Cropland fertilized, except pastureland ----- farms, 1987..	27	526	860	97	1 160	860	862	
	1982..	35	665	933	135	1 395	888	
	acres on which used, 1987..	996	68 504	135 253	5 871	102 055	106 455	104 413
	1982..	987	78 671	147 088	6 793	109 195	132 416	148 731
Pastureland and rangeland fertilized ----- farms, 1987..	3	20	-	4	46	35	43	
	1982..	5	29	12	4	48	57	
	acres on which used, 1987..	42	534	-	74	808	450	922
	1982..	54	531	252	65	1 502	565	943
Lime ----- farms, 1987..	14	115	29	17	261	183	254	
	1982..	10	110	22	18	363	305	
	acres on which used, 1987..	320	6 545	604	236	12 353	9 445	13 663
	1982..	97	3 919	1 096	587	9 965	10 260	14 665
Sprays, dusts, granules, fumigants, etc., to control—								
	Insects on hay and other crops ----- farms, 1987..	2	225	294	67	857	266	403
	1982..	6	252	291	107	984	351	447
	acres on which used, 1987..	(D)	19 018	33 943	3 776	57 449	35 140	46 843
1982..	77	28 180	29 511	4 391	59 509	49 036	66 011	
Nematodes in crops ----- farms, 1987..	-	27	17	19	80	54	28	
	1982..	2	43	52	30	50	51	
	acres on which used, 1987..	-	1 814	1 726	171	1 876	3 930	4 644
	1982..	(D)	3 436	6 586	900	7 021	8 232	8 884
Diseases in crops and orchards ----- farms, 1987..	-	34	122	61	599	16	60	
	1982..	2	30	168	68	673	26	
	acres on which used, 1987..	-	2 948	9 974	4 033	28 755	1 840	3 546
	1982..	(D)	5 373	11 107	3 142	31 872	942	3 838
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	4	452	706	77	711	611	667	
	1982..	13	482	708	86	894	682	
	acres on which used, 1987..	138	45 331	109 896	4 574	66 337	84 461	74 167
	1982..	277	51 552	114 093	4 750	74 903	100 949	102 710
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	1	3	36	37	205	8	33	
	1982..	-	25	24	29	250	38	
	acres on which used, 1987..	(D)	117	1 101	1 758	6 281	359	1 687
	1982..	-	1 329	1 713	1 367	12 077	1 403	1 542

**Table 9. Agricultural Chemicals Used, Including Fertilizer and Lime: 1987 and 1982—Con.**

[Data are based on a sample of farms. For meaning of abbreviations and symbols, see introductory text]

Chemicals used	County						
	Cass	Charlevoix	Cheboygan	Chippewa	Clare	Clinton	Crawford
Commercial fertilizer ----- farms, 1987..	605	135	97	168	172	1 046	8
1982..	789	153	121	231	178	1 191	11
acres on which used, 1987..	100 493	9 621	10 018	8 034	14 958	155 781	182
1982..	105 654	13 133	6 571	15 526	22 519	175 055	(D)
Cropland fertilized, except pastureland ----- farms, 1987..	590	129	97	168	172	1 046	8
1982..	758	143	121	225	171	1 190	11
acres on which used, 1987..	99 033	9 471	9 548	7 724	14 326	154 871	168
1982..	103 117	11 615	5 765	12 847	21 849	173 985	124
Pastureland and rangeland fertilized ----- farms, 1987..	61	13	9	16	32	47	3
1982..	70	31	22	45	15	48	2
acres on which used, 1987..	1 460	150	470	310	632	910	14
1982..	2 537	1 518	806	2 679	670	1 070	(D)
Lime ----- farms, 1987..	166	6	8	7	34	88	2
1982..	211	12	25	27	16	105	4
acres on which used, 1987..	10 382	120	350	(D)	935	4 653	(D)
1982..	9 630	159	1 066	568	638	5 622	29
tons, 1987..	22 380	132	300	(D)	1 988	8 784	(D)
1982..	20 463	301	3 347	744	1 062	9 749	(D)
Sprays, dusts, granules, fumigants, etc., to control—							
Insects on hay and other crops ----- farms, 1987..	345	34	30	17	33	334	2
1982..	338	29	16	15	44	328	3
acres on which used, 1987..	41 650	2 545	1 677	1 508	6 175	40 501	(D)
1982..	51 496	4 172	255	261	6 112	37 476	7
Nematodes in crops ----- farms, 1987..	54	1	5	7	1	39	-
1982..	62	5	5	-	2	53	1
acres on which used, 1987..	6 639	(D)	308	84	(D)	4 081	-
1982..	11 953	505	100	-	(D)	6 775	(D)
Diseases in crops and orchards ----- farms, 1987..	97	9	13	1	2	73	1
1982..	88	17	1	6	1	65	1
acres on which used, 1987..	5 544	(D)	448	(D)	(D)	1 739	(D)
1982..	4 249	1 271	(D)	126	(D)	3 303	(D)
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	482	81	54	41	84	860	3
1982..	603	81	34	27	118	917	3
acres on which used, 1987..	83 320	4 665	3 889	6 932	5 830	121 000	(D)
1982..	82 796	4 333	2 332	1 476	12 107	121 386	(D)
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	44	7	2	-	1	30	-
1982..	40	11	1	-	-	65	1
acres on which used, 1987..	2 214	(D)	(D)	-	(D)	1 854	-
1982..	1 633	56	(D)	-	-	8 777	(D)

  

Chemicals used	County						
	Delta	Dickinson	Eaton	Emmet	Genesee	Gladwin	Gogebic
Commercial fertilizer ----- farms, 1987..	188	61	941	145	553	298	19
1982..	191	71	1 063	126	752	292	32
acres on which used, 1987..	16 480	7 726	122 579	10 285	85 500	20 583	434
1982..	16 999	5 685	149 547	7 059	110 172	24 458	888
Cropland fertilized, except pastureland ----- farms, 1987..	180	59	941	145	545	291	18
1982..	184	71	1 057	126	752	292	31
acres on which used, 1987..	14 997	7 536	121 323	10 030	85 264	19 453	404
1982..	16 043	5 661	148 569	6 999	109 622	24 196	844
Pastureland and rangeland fertilized ----- farms, 1987..	30	9	62	5	21	23	3
1982..	39	4	60	6	20	14	5
acres on which used, 1987..	1 483	190	1 256	255	236	1 130	30
1982..	956	24	978	60	550	262	44
Lime ----- farms, 1987..	3	11	127	18	69	64	8
1982..	16	6	169	17	48	7	10
acres on which used, 1987..	141	777	5 257	315	3 716	2 465	64
1982..	250	350	6 325	835	4 533	121	62
tons, 1987..	205	999	12 131	488	6 312	2 031	123
1982..	422	296	16 573	1 385	8 965	141	104
Sprays, dusts, granules, fumigants, etc., to control—							
Insects on hay and other crops ----- farms, 1987..	48	23	364	22	229	54	2
1982..	34	17	271	36	235	23	2
acres on which used, 1987..	4 209	2 275	32 239	1 822	32 923	4 228	(D)
1982..	1 333	1 523	39 896	1 400	35 635	3 251	(D)
Nematodes in crops ----- farms, 1987..	12	6	38	-	27	7	-
1982..	2	5	40	2	19	6	-
acres on which used, 1987..	853	378	3 751	-	4 830	91	-
1982..	(D)	266	5 906	(D)	3 427	600	-
Diseases in crops and orchards ----- farms, 1987..	26	15	62	1	56	22	3
1982..	19	15	15	12	88	10	2
acres on which used, 1987..	1 196	1 613	3 746	(D)	4 260	1 720	(D)
1982..	652	1 211	2 867	462	4 526	432	(D)
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	121	40	692	68	378	144	8
1982..	102	44	747	80	508	209	8
acres on which used, 1987..	8 519	3 370	88 097	5 099	61 335	8 519	113
1982..	10 475	3 461	107 751	4 989	81 978	17 289	(D)
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	3	5	45	2	47	-	-
1982..	2	2	8	12	24	2	-
acres on which used, 1987..	215	625	3 734	(D)	2 543	-	-
1982..	(D)	(D)	300	456	1 999	(D)	-

**Table 9. Agricultural Chemicals Used, Including Fertilizer and Lime: 1987 and 1982—Con.**

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Chemicals used	County							
	Grand Traverse	Gratiot	Hillsdale	Houghton	Huron	Ingham	Ionia	Iosco
Commercial fertilizer ----- farms, 1987..	271	890	851	93	1 243	721	841	119
1982..	362	1 028	1 023	123	1 458	758	902	184
acres on which used, 1987..	28 464	214 509	122 969	4 272	319 940	123 479	141 112	9 502
1982..	32 308	200 216	158 629	5 081	336 077	142 494	143 147	20 577
Cropland fertilized, except pastureland ----- farms, 1987..	271	890	837	89	1 241	710	833	118
1982..	362	1 016	1 016	123	1 440	736	902	184
acres on which used, 1987..	(D)	214 224	121 215	3 742	319 160	123 000	139 874	8 369
1982..	31 588	199 860	156 452	5 021	335 397	140 951	142 420	18 889
Pastureland and rangeland fertilized ----- farms, 1987..	6	12	53	18	27	34	43	9
1982..	11	28	27	6	37	51	40	28
acres on which used, 1987..	(D)	285	1 754	530	780	479	1 238	1 133
1982..	720	356	2 177	60	680	1 543	727	1 688
Lime ----- farms, 1987..	36	54	213	35	57	127	238	5
1982..	53	125	121	49	21	186	229	9
acres on which used, 1987..	3 363	2 606	11 077	1 090	2 359	7 440	10 093	312
1982..	1 755	4 045	5 291	970	1 072	9 111	8 666	489
tons, 1987..	4 997	4 095	20 038	3 014	4 075	14 877	20 164	477
1982..	3 416	6 835	11 045	1 921	1 330	19 299	15 998	656
Sprays, dusts, granules, fumigants, etc., to control—								
Insects on hay and other crops ----- farms, 1987..	206	313	326	22	481	301	294	32
1982..	204	234	381	33	458	321	404	58
acres on which used, 1987..	13 503	36 294	46 697	428	82 588	34 561	33 069	1 041
1982..	15 993	44 103	57 180	827	82 742	48 528	46 981	4 459
Nematodes in crops ----- farms, 1987..	34	12	41	3	80	86	60	-
1982..	30	30	51	-	67	57	94	24
acres on which used, 1987..	1 230	704	6 952	6	9 841	10 804	7 069	-
1982..	572	3 220	12 732	-	10 897	6 525	13 174	762
Diseases in crops and orchards ----- farms, 1987..	186	49	28	9	49	63	72	7
1982..	173	17	32	1	42	61	118	35
acres on which used, 1987..	9 499	3 639	1 393	157	6 191	2 216	5 957	14
1982..	9 243	2 428	3 148	(D)	5 533	2 808	6 133	687
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	204	753	680	40	1 053	545	596	75
1982..	224	810	851	35	1 108	608	695	90
acres on which used, 1987..	18 416	170 832	93 382	1 016	246 260	82 784	88 613	5 729
1982..	18 447	171 322	118 513	902	237 630	103 732	99 587	11 645
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	78	30	41	5	27	82	46	-
1982..	82	18	22	-	6	38	39	-
acres on which used, 1987..	2 493	1 394	1 025	61	1 635	2 659	4 131	-
1982..	4 778	2 114	1 563	-	3 887	775	1 735	-

  

Chemicals used	County							
	Iron	Isabella	Jackson	Kalamazoo	Kalkaska	Kent	Keweenaw	Lake
Commercial fertilizer ----- farms, 1987..	49	655	710	523	70	969	-	58
1982..	48	792	925	609	61	1 097	1	58
acres on which used, 1987..	3 686	104 642	95 332	75 518	5 089	114 823	-	2 383
1982..	2 979	113 437	125 446	100 960	6 220	122 384	(D)	3 073
Cropland fertilized, except pastureland ----- farms, 1987..	48	643	691	516	70	949	-	55
1982..	47	792	920	601	59	1 066	-	58
acres on which used, 1987..	3 519	103 556	93 814	74 763	5 002	113 817	-	2 152
1982..	(D)	113 197	124 105	100 558	6 137	121 867	-	3 073
Pastureland and rangeland fertilized ----- farms, 1987..	7	32	56	21	6	51	-	14
1982..	3	8	17	22	4	55	1	-
acres on which used, 1987..	167	1 086	1 518	755	87	1 006	-	231
1982..	(D)	240	1 341	402	83	517	(D)	-
Lime ----- farms, 1987..	12	120	128	94	15	347	-	19
1982..	16	123	203	125	21	339	-	12
acres on which used, 1987..	446	5 436	6 953	5 616	919	12 123	-	402
1982..	750	4 165	9 157	6 718	410	8 273	-	316
tons, 1987..	459	8 454	10 810	7 992	1 244	24 423	-	832
1982..	744	7 958	19 730	14 840	840	17 736	-	608
Sprays, dusts, granules, fumigants, etc., to control—								
Insects on hay and other crops ----- farms, 1987..	6	195	334	339	13	476	-	3
1982..	10	216	396	316	13	520	-	5
acres on which used, 1987..	661	23 778	34 999	37 759	767	43 011	-	36
1982..	1 384	31 072	63 045	40 021	978	49 297	-	86
Nematodes in crops ----- farms, 1987..	-	21	26	76	3	68	-	-
1982..	2	9	65	109	3	44	-	-
acres on which used, 1987..	-	3 670	2 223	(D)	458	5 428	-	-
1982..	(D)	2 286	9 536	10 703	(D)	3 358	-	-
Diseases in crops and orchards ----- farms, 1987..	3	27	66	110	10	266	-	-
1982..	7	54	43	147	7	277	-	-
acres on which used, 1987..	217	1 630	2 299	6 258	(D)	16 821	-	-
1982..	434	3 843	6 364	4 191	724	18 443	-	-
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	16	485	490	402	35	632	-	35
1982..	17	584	661	408	33	725	-	38
acres on which used, 1987..	1 080	71 973	62 849	56 260	2 787	61 406	-	944
1982..	973	73 328	87 592	66 780	3 869	61 193	-	2 197
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	2	30	19	41	6	164	-	-
1982..	3	23	18	71	3	134	-	1
acres on which used, 1987..	(D)	1 466	789	885	284	8 914	-	-
1982..	(D)	690	460	3 293	(D)	5 394	-	(D)

**Table 9. Agricultural Chemicals Used, Including Fertilizer and Lime: 1987 and 1982—Con.**

[Data are based on a sample of farms. For meaning of abbreviations and symbols, see introductory text]

Chemicals used		County								
		Lapeer	Leelanau	Lenawee	Livingston	Luce	Mackinac	Macomb	Manistee	
Commercial fertilizer ----- farms,	1987..	795	316	1 110	426	18	46	524	201	
	1982..	965	322	1 304	546	16	55	625	185	
	acres on which used, 1987..	109 736	23 486	218 991	60 781	1 246	3 865	46 202	12 131	
	1982..	116 478	28 977	262 481	64 870	917	3 753	58 505	11 620	
Cropland fertilized, except pastureland ----- farms,	1987..	771	316	1 110	415	16	46	503	201	
	1982..	955	322	1 289	536	16	53	625	185	
	acres on which used, 1987..	108 866	23 165	218 728	60 587	(D)	3 465	45 735	11 711	
	1982..	116 201	26 408	262 291	64 156	(D)	3 608	58 265	11 590	
Pastureland and rangeland fertilized ----- farms,	1987..	59	10	13	21	2	5	33	7	
	1982..	42	42	26	38	2	8	20	6	
	acres on which used, 1987..	870	321	263	194	(D)	400	467	420	
	1982..	277	2 571	190	714	(D)	145	240	30	
Lime ----- farms,	1987..	165	36	161	121	4	5	31	58	
	1982..	130	34	149	93	1	2	55	35	
	acres on which used, 1987..	7 477	1 907	7 676	4 502	142	229	1 185	1 299	
	1982..	3 544	828	7 332	2 974	(D)	(D)	3 039	967	
Sprays, dusts, granules, fumigants, etc., to control--	1987..	11 631	4 201	14 108	11 089	388	340	1 906	2 618	
	1982..	7 550	2 023	12 637	5 120	(D)	(D)	4 397	1 823	
	Insects on hay and other crops ----- farms,	1987..	225	268	407	169	3	5	224	79
	1982..	273	237	460	180	2	4	257	128	
Nematodes in crops ----- farms,	1987..	29	52	78	20	-	1	34	7	
	1982..	19	29	45	32	-	-	39	44	
	acres on which used, 1987..	4 310	1 041	7 983	1 440	-	(D)	1 950	873	
	1982..	1 193	980	6 178	7 048	-	-	1 161	1 699	
Diseases in crops and orchards ----- farms,	1987..	76	249	59	65	3	2	73	86	
	1982..	57	205	103	50	-	-	124	105	
	acres on which used, 1987..	7 471	14 949	4 338	1 614	40	(D)	1 798	5 491	
	1982..	6 318	13 153	7 937	1 024	-	-	3 172	5 910	
Weeds, grass, or brush in crops and pasture ----- farms,	1987..	494	278	1 010	283	11	20	372	93	
	1982..	661	192	1 079	343	11	19	417	108	
	acres on which used, 1987..	69 703	17 708	196 498	35 115	512	1 304	31 016	5 097	
	1982..	79 725	12 309	222 553	40 240	648	1 388	42 888	7 012	
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms,	1987..	18	76	50	27	-	1	15	9	
	1982..	40	64	56	8	-	-	39	22	
	acres on which used, 1987..	983	4 760	3 429	574	-	(D)	179	1 481	
	1982..	2 424	3 534	3 841	707	-	-	1 694	2 347	

  

Chemicals used		County								
		Marquette	Mason	Mecosta	Menominee	Midland	Missaukee	Monroe	Montcalm	
Commercial fertilizer ----- farms,	1987..	29	322	397	276	319	222	1 002	778	
	1982..	49	311	425	325	376	259	1 128	869	
	acres on which used, 1987..	3 177	33 201	32 475	34 580	50 274	38 573	157 520	118 444	
	1982..	2 752	38 831	41 525	36 856	61 111	38 735	170 726	125 820	
Cropland fertilized, except pastureland ----- farms,	1987..	26	322	384	269	319	221	993	778	
	1982..	45	307	419	316	371	258	1 106	863	
	acres on which used, 1987..	2 793	33 131	32 175	33 024	50 077	37 654	157 446	117 687	
	1982..	2 597	38 751	40 841	35 999	60 996	37 975	170 471	125 607	
Pastureland and rangeland fertilized ----- farms,	1987..	13	7	19	44	14	24	21	27	
	1982..	8	6	42	36	6	18	44	22	
	acres on which used, 1987..	384	70	300	1 556	197	919	74	757	
	1982..	155	80	684	857	115	760	255	213	
Lime ----- farms,	1987..	5	79	131	10	5	112	106	232	
	1982..	4	68	172	12	10	75	64	254	
	acres on which used, 1987..	90	2 780	4 172	(D)	46	4 466	7 528	11 798	
	1982..	(D)	2 725	3 831	120	97	2 289	2 522	12 300	
Sprays, dusts, granules, fumigants, etc., to control--	1987..	(D)	5 734	7 907	(D)	70	8 988	13 340	17 209	
	1982..	(D)	6 556	8 648	240	167	4 336	3 879	19 463	
	Insects on hay and other crops ----- farms,	1987..	11	143	96	26	82	39	352	247
	1982..	15	154	66	34	85	94	280	289	
Nematodes in crops ----- farms,	1987..	815	10 543	4 465	1 296	6 080	4 525	32 458	35 853	
	1982..	618	10 809	8 442	2 466	10 778	6 375	32 206	43 614	
	acres on which used, 1987..	1	22	13	-	-	2	39	109	
	1982..	1	20	34	-	-	22	50	107	
Diseases in crops and orchards ----- farms,	1987..	(D)	1 015	1 095	-	-	(D)	7 298	12 182	
	1982..	(D)	1 685	4 738	-	-	514	10 617	15 343	
	acres on which used, 1987..	8	95	54	8	8	37	106	118	
	1982..	9	106	20	25	5	11	53	98	
Weeds, grass, or brush in crops and pasture ----- farms,	1987..	451	7 028	1 786	(D)	(D)	629	5 224	11 936	
	1982..	448	7 467	1 947	496	1 253	421	4 155	15 206	
	acres on which used, 1987..	17	261	310	167	228	141	849	649	
	1982..	22	240	248	208	268	160	892	609	
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms,	1987..	2 398	19 911	21 857	14 808	43 546	13 899	134 830	83 968	
	1982..	1 398	25 386	21 821	21 598	53 037	17 885	152 376	87 598	
	acres on which used, 1987..	5	34	10	1	10	2	52	60	
	1982..	3	38	4	-	2	-	14	51	
Sprays, dusts, granules, fumigants, etc., to control--	1987..	345	3 691	558	(D)	995	(D)	4 359	6 793	
	1982..	(D)	3 329	955	-	(D)	-	4 148	6 967	

**Table 9. Agricultural Chemicals Used, Including Fertilizer and Lime: 1987 and 1982—Con.**

[Data are based on a sample of farms. For meaning of abbreviations and symbols, see introductory text]

Chemicals used	Montmorency								Muskegon								Newaygo								Oakland								Oceana								Ogemaw								Ontonagon								Osceola							
	1987		1982		1987		1982		1987		1982		1987		1982		1987		1982		1987		1982		1987		1982		1987		1982		1987		1982																													
Commercial fertilizer ----- farms,	71	56	346	354	457	499	241	223	563	543	182	172	57	81	250	299																																																
acres on which used, 1987--	5 633	7 986	35 801	39 171	47 271	42 633	23 649	19 258	53 665	52 160	24 222	18 950	2 870	1 802	27 103	25 473																																																
Cropland fertilized, except pastureland ----- farms,	71	56	346	354	456	499	228	215	557	543	182	171	57	61	250	287																																																
acres on which used, 1987--	5 453	7 946	(D)	(D)	46 993	42 561	23 107	18 847	53 407	51 895	24 032	18 339	2 810	1 802	26 090	24 817																																																
Pastureland and rangeland fertilized ----- farms,	5	3	2	3	19	4	20	16	26	8	9	18	3	-	29	22																																																
acres on which used, 1987--	180	40	(D)	102	278	72	542	411	258	265	190	611	60	-	1 013	656																																																
Lime ----- farms, 1987--	7	2	81	84	149	82	42	65	228	186	29	5	22	8	80	108																																																
acres on which used, 1987--	221	(D)	2 147	2 936	4 152	1 423	1 533	1 686	6 976	5 177	1 588	351	148	2 637	2 700																																																	
tons, 1987--	297	(D)	3 888	6 284	7 948	2 878	2 705	3 924	15 508	11 121	2 903	650	1 269	5 536	5 387																																																	
Sprays, dusts, granules, fumigants, etc., to control--																																																																
Insects on hay and other crops ----- farms, 1987--	13	24	176	118	115	179	94	118	431	423	24	21	15	15	47	37																																																
acres on which used, 1987--	621	1 870	14 665	15 180	10 462	13 535	6 418	7 204	36 761	35 810	1 628	2 717	1 202	1 660	1 608	2 693																																																
Nematodes in crops ----- farms, 1987--	1	3	17	10	5	27	11	14	62	79	6	4	-	-	2	8																																																
acres on which used, 1987--	(D)	57	1 517	(D)	702	1 622	3 111	(D)	2 018	2 579	150	463	-	-	(D)	428																																																
Diseases in crops and orchards ----- farms, 1987--	15	2	83	89	72	62	21	60	265	242	-	2	-	-	17	16																																																
acres on which used, 1987--	250	(D)	5 395	5 569	8 248	7 300	526	543	25 641	19 952	-	(D)	-	-	337	401																																																
Weeds, grass, or brush in crops and pasture ----- farms, 1987--	27	28	245	190	336	355	182	170	418	408	95	96	12	7	130	182																																																
acres on which used, 1987--	1 690	4 193	28 017	26 071	31 350	29 320	16 878	13 409	34 156	31 617	12 969	10 228	628	759	10 684	11 101																																																
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987--	1	-	32	25	34	18	9	17	108	61	6	1	2	4	15	2																																																
acres on which used, 1987--	(D)	-	1 744	1 309	1 691	947	26	316	4 357	4 934	42	(D)	(D)	120	196	(D)																																																

  

Chemicals used	Oscoda		Otsego		Ottawa		Presque Isle		Roscommon		Saginaw		St. Clair		St. Joseph	
	1987		1982		1987		1982		1987		1982		1987		1982	
Commercial fertilizer ----- farms, 1987--	52	54	94	96	1 048	1 273	231	232	12	16	1 192	1 461	786	927	703	781
acres on which used, 1987--	4 388	4 567	5 163	5 894	92 334	110 348	31 393	27 008	240	564	235 693	257 042	86 132	120 659	118 998	138 505
Cropland fertilized, except pastureland ----- farms, 1987--	49	52	94	98	1 042	1 257	220	225	10	14	1 186	1 461	779	920	688	777
acres on which used, 1987--	3 888	4 517	4 829	5 842	91 873	108 928	29 633	26 189	212	550	235 575	256 952	85 296	120 238	118 143	138 131
Pastureland and rangeland fertilized ----- farms, 1987--	8	5	14	4	40	105	49	41	3	3	17	8	16	11	59	24
acres on which used, 1987--	500	50	334	52	461	1 420	1 760	819	28	14	118	90	836	421	855	374
Lime ----- farms, 1987--	6	6	21	12	255	281	15	19	5	3	92	48	77	40	213	168
acres on which used, 1987--	212	101	408	183	8 038	6 345	530	381	83	24	5 156	1 596	3 406	1 089	14 125	9 792
tons, 1987--	412	244	782	413	15 145	12 431	982	813	174	(D)	7 612	2 170	8 189	1 425	26 050	20 239
Sprays, dusts, granules, fumigants, etc., to control--																
Insects on hay and other crops ----- farms, 1987--	5	2	15	16	623	565	93	78	4	1	428	322	194	162	300	362
acres on which used, 1987--	(D)	(D)	1 061	327	47 803	47 843	10 220	9 839	(D)	(D)	38 131	48 825	13 413	21 109	54 202	67 502
Nematodes in crops ----- farms, 1987--	-	1	2	3	92	115	5	4	1	-	14	12	15	14	74	88
acres on which used, 1987--	(D)	(D)	(D)	63	5 812	7 717	1 819	1 564	(D)	-	(D)	941	745	820	14 782	22 946
Diseases in crops and orchards ----- farms, 1987--	1	2	6	9	258	249	24	22	2	2	65	107	51	33	52	36
acres on which used, 1987--	(D)	(D)	303	293	11 757	12 131	4 454	2 829	(D)	(D)	5 049	5 918	912	2 391	7 780	4 768
Weeds, grass, or brush in crops and pasture ----- farms, 1987--	37	33	50	55	761	857	137	99	4	4	1 097	1 236	588	648	553	635
acres on which used, 1987--	1 832	1 701	3 029	3 384	59 856	69 560	12 280	11 541	(D)	436	198 358	220 790	69 769	102 899	98 923	107 926
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987--	1	-	5	4	72	52	18	4	-	1	45	14	8	11	18	20
acres on which used, 1987--	(D)	-	307	135	2 853	1 893	1 861	514	-	(D)	948	2 219	113	2 502	3 585	343

**Table 9. Agricultural Chemicals Used, Including Fertilizer and Lime: 1987 and 1982—Con.**

[Data are based on a sample of farms. For meaning of abbreviations and symbols, see introductory text]

Chemicals used	Sanilac	Schoolcraft	Shiawassee	Tuscola	Van Buren	Washtenaw	Wayne	Wexford
Commercial fertilizer ----- farms, 1987..	1 279	33	885	988	1 022	856	196	94
1982..	1 498	38	1 049	1 233	1 136	885	322	109
acres on which used, 1987..	273 411	3 080	147 960	238 484	80 298	116 055	10 511	5 886
1982..	296 265	2 449	162 617	254 286	98 810	136 583	25 362	6 608
Cropland fertilized, except pastureland ----- farms, 1987..	1 268	30	885	974	1 008	839	196	94
1982..	1 498	38	1 049	1 233	1 128	871	314	109
acres on which used, 1987..	272 334	2 692	147 808	238 231	79 370	115 362	10 506	5 774
1982..	295 038	2 196	161 766	254 166	97 751	136 251	25 322	6 608
Pastureland and rangeland fertilized ----- farms, 1987..	47	9	11	41	34	38	5	7
1982..	51	6	34	16	55	36	8	-
acres on which used, 1987..	1 077	388	152	253	928	693	5	112
1982..	1 227	253	851	120	1 059	332	40	-
Lime ----- farms, 1987..	160	8	104	133	212	177	14	33
1982..	122	6	55	87	270	124	4	48
acres on which used, 1987..	7 180	267	5 550	4 351	11 610	6 100	497	730
1982..	6 233	136	2 558	1 953	11 886	4 045	360	854
tons, 1987..	17 385	492	10 754	6 793	24 216	12 672	815	1 381
1982..	15 241	458	4 240	3 208	26 817	7 633	426	1 426
Sprays, dusts, granules, fumigants, etc., to control--								
Insects on hay and other crops ----- farms, 1987..	344	10	220	354	747	407	123	31
1982..	388	6	322	229	765	362	127	17
acres on which used, 1987..	38 679	142	23 945	50 236	52 900	45 189	4 911	967
1982..	59 565	(D)	23 774	37 542	56 697	48 961	7 591	1 283
Nematodes in crops ----- farms, 1987..	35	2	38	36	110	67	3	-
1982..	89	1	59	15	99	54	36	7
acres on which used, 1987..	3 926	(D)	4 073	4 472	5 297	3 159	501	-
1982..	6 482	(D)	5 692	4 131	9 096	5 084	968	336
Diseases in crops and orchards ----- farms, 1987..	24	6	60	62	442	106	61	13
1982..	92	7	75	58	426	99	16	8
acres on which used, 1987..	1 149	(D)	3 812	7 049	29 049	8 505	327	52
1982..	2 872	(D)	6 079	6 594	31 669	4 279	164	571
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	986	18	781	838	658	589	135	54
1982..	1 125	20	813	977	776	648	180	57
acres on which used, 1987..	178 419	946	115 847	191 312	60 037	70 543	10 108	2 891
1982..	210 773	1 093	120 219	216 840	70 678	85 061	18 448	4 352
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	23	1	17	12	113	52	7	8
1982..	66	1	8	26	124	50	2	-
acres on which used, 1987..	4 173	(D)	869	804	7 201	2 462	232	43
1982..	3 259	(D)	1 680	2 817	6 332	1 507	(D)	-