

**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			Iowa	Adair	Adams	Allamakee	Appanoose	Audubon	Benton
			farms, 1987..	83 051	809	479	856	497	681
		1982..	86 653	740	489	828	572	674	1 250
		acres on which used, 1987..	13 313 702	141 265	77 509	89 385	57 485	120 361	187 810
		1982..	14 661 266	129 420	80 777	92 808	49 371	143 064	210 306
		farms, 1987..	81 879	787	479	845	480	661	1 157
		1982..	85 398	733	463	805	518	660	1 242
		acres on which used, 1987..	12 882 998	122 895	69 276	85 922	47 017	112 173	186 343
		1982..	14 181 267	111 154	67 779	89 891	40 598	131 076	206 255
		farms, 1987..	7 286	218	108	73	129	115	41
		1982..	8 855	227	156	85	117	93	92
		acres on which used, 1987..	430 704	18 370	8 233	3 463	10 468	8 188	1 467
		1982..	479 999	18 266	12 998	2 917	8 773	11 988	4 051
		farms, 1987..	17 823	287	177	276	168	189	323
		1982..	11 172	151	96	251	100	96	147
		acres on which used, 1987..	1 219 181	24 147	14 550	13 171	9 267	19 294	24 486
		1982..	588 678	10 158	5 409	9 784	3 137	4 931	10 260
		tons, 1987..	2 846 408	37 111	30 219	35 812	23 301	33 871	63 009
		1982..	1 389 986	19 165	11 855	23 745	6 182	9 056	27 080
		farms, 1987..	41 361	524	224	664	209	351	629
		1982..	41 193	488	267	587	204	399	699
		acres on which used, 1987..	4 910 343	56 019	33 557	51 260	19 513	54 721	77 108
		1982..	6 062 166	59 631	31 048	59 254	21 242	81 434	93 043
		farms, 1987..	2 548	17	21	16	16	44	25
		1982..	3 419	34	9	103	1	30	34
		acres on which used, 1987..	267 277	3 812	1 185	1 213	1 335	4 635	2 574
		1982..	415 428	5 480	1 390	7 410	(D)	2 564	2 691
		farms, 1987..	1 330	13	-	14	16	22	18
		1982..	1 331	9	6	7	1	10	30
		acres on which used, 1987..	112 420	1 588	-	630	44	2 407	1 060
		1982..	177 125	1 290	360	385	(D)	1 598	1 694
		farms, 1987..	70 486	671	457	610	408	474	1 009
		1982..	73 116	626	446	620	381	529	1 066
		acres on which used, 1987..	14 709 093	132 544	76 358	45 488	41 630	99 970	219 934
		1982..	16 269 261	138 728	89 380	59 756	43 525	142 738	248 586
		farms, 1987..	1 066	8	1	7	1	8	19
		1982..	1 726	16	22	37	12	10	4
		acres on which used, 1987..	120 779	1 040	(D)	140	(D)	3 538	2 205
		1982..	242 520	628	1 389	2 880	1 644	2 750	256

  

Chemicals used			Black Hawk	Boone	Bremer	Buchanan	Buena Vista	Butler	Calhoun
			farms, 1987..	975	859	872	1 116	931	1 014
		1982..	1 017	851	1 035	1 163	981	1 114	884
		acres on which used, 1987..	139 343	146 241	126 044	180 933	143 671	160 161	141 597
		1982..	173 064	151 012	133 464	201 181	183 502	174 724	144 908
		farms, 1987..	971	859	867	1 115	919	1 009	851
		1982..	1 017	851	1 022	1 142	981	1 101	868
		acres on which used, 1987..	136 822	145 978	125 774	179 463	142 826	159 030	140 926
		1982..	171 690	150 880	133 003	198 516	182 379	173 083	141 437
		farms, 1987..	50	13	25	42	15	31	19
		1982..	85	12	42	77	37	53	56
		acres on which used, 1987..	2 521	263	270	1 470	845	1 131	671
		1982..	1 374	132	461	2 665	1 123	1 641	3 471
		farms, 1987..	198	71	229	288	165	301	63
		1982..	136	23	234	189	80	138	57
		acres on which used, 1987..	12 305	6 346	11 704	19 408	10 590	15 223	3 212
		1982..	7 950	1 355	7 728	8 055	5 175	6 112	3 619
		tons, 1987..	31 345	13 864	32 951	57 209	15 273	36 159	5 804
		1982..	18 468	3 086	19 417	22 205	10 365	16 439	3 726
		farms, 1987..	535	167	500	681	274	505	224
		1982..	420	251	447	530	398	472	178
		acres on which used, 1987..	55 654	21 545	48 323	85 665	37 895	56 353	30 033
		1982..	59 634	31 035	54 413	81 442	61 057	64 665	24 941
		farms, 1987..	21	28	34	83	9	9	12
		1982..	53	20	30	29	15	82	33
		acres on which used, 1987..	2 140	4 339	2 322	5 466	1 718	1 371	2 606
		1982..	2 898	1 133	2 459	4 381	2 414	8 572	4 076
		farms, 1987..	8	18	15	28	15	2	13
		1982..	13	18	25	4	25	-	-
		acres on which used, 1987..	235	2 129	408	1 432	2 260	(D)	1 780
		1982..	188	1 755	2 512	1 030	1 910	-	-
		farms, 1987..	813	745	769	950	830	905	719
		1982..	935	815	752	988	961	983	880
		acres on which used, 1987..	166 138	211 341	134 283	162 863	203 984	180 036	199 285
		1982..	199 979	209 121	130 308	187 697	258 196	185 947	230 048
		farms, 1987..	17	23	-	30	7	7	28
		1982..	17	42	7	15	35	12	40
		acres on which used, 1987..	(D)	4 127	-	3 250	3 149	1 722	2 336
		1982..	1 685	9 154	7	820	5 718	2 642	11 978

**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			Carroll	Cass	Cedar	Cerro Gordo	Cherokee	Chickasaw	Clarke
	Commercial fertilizer ----- farms, 1987..	1 098	732	952	734	923	857	511	
1982..	1 049	793	1 022	822	907	875	488		
acres on which used, 1987..	177 086	142 243	163 978	138 169	132 346	139 328	59 747		
1982..	169 679	161 840	204 672	174 533	135 505	160 989	64 750		
Cropland fertilized, except pastureland ----- farms, 1987..	1 065	704	950	734	915	857	493		
1982..	1 042	776	1 021	822	899	854	486		
acres on which used, 1987..	172 636	128 368	162 610	137 409	130 265	138 068	52 232		
1982..	165 905	148 010	202 825	173 899	133 255	159 880	61 249		
Pastureland and rangeland fertilized ----- farms, 1987..	112	172	52	8	31	40	136		
1982..	100	198	65	17	58	48	45		
acres on which used, 1987..	4 450	13 875	1 368	760	2 081	1 260	7 515		
1982..	3 774	13 830	1 847	634	2 250	1 109	3 501		
Lime ----- farms, 1987..	166	194	206	50	221	310	168		
1982..	76	97	211	36	70	151	96		
acres on which used, 1987..	11 844	16 113	17 316	4 278	19 117	22 598	8 310		
1982..	5 904	5 933	18 281	2 456	3 885	6 138	4 581		
tons, 1987..	17 761	32 188	42 133	9 960	29 995	62 645	21 635		
1982..	8 212	11 070	43 655	6 464	6 597	17 336	10 147		
Sprays, dusts, granules, fumigants, etc., to control—									
Insects on hay and other crops ----- farms, 1987..	490	490	705	352	459	530	210		
1982..	438	424	753	408	369	484	172		
acres on which used, 1987..	52 621	61 690	85 317	46 132	53 177	55 892	18 748		
1982..	60 583	74 748	133 475	75 220	49 758	82 443	27 353		
Nematodes in crops ----- farms, 1987..	19	15	63	30	10	56	37		
1982..	35	13	65	36	50	29	7		
acres on which used, 1987..	1 921	2 447	6 960	1 994	590	4 520	3 486		
1982..	1 890	1 840	16 232	3 588	3 640	2 132	350		
Diseases in crops and orchards ----- farms, 1987..	27	5	12	25	29	37	10		
1982..	21	2	16	3	14	7	1		
acres on which used, 1987..	2 312	10	(D)	1 684	6 371	2 948	883		
1982..	1 973	(D)	3 049	1 585	3 781	35	(D)		
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	884	655	798	675	789	708	425		
1982..	886	678	843	739	863	740	348		
acres on which used, 1987..	184 522	147 071	159 712	172 134	168 536	125 012	66 930		
1982..	183 654	156 403	200 169	228 849	183 250	164 993	53 125		
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	11	16	8	21	2	17	42		
1982..	14	23	26	9	13	3	8		
acres on which used, 1987..	1 184	4 201	491	2 664	(D)	1 631	712		
1982..	3 106	4 644	977	2 077	1 644	1 230	1 856		

  

Chemicals used			Clay	Clayton	Clinton	Crawford	Dallas	Davis	Decatur
	Commercial fertilizer ----- farms, 1987..	709	1 304	1 224	1 042	775	663	487	
1982..	833	1 351	1 287	1 139	809	682	519		
acres on which used, 1987..	131 096	162 177	200 002	176 011	132 743	83 918	77 252		
1982..	164 525	196 424	247 403	178 679	147 927	77 602	81 054		
Cropland fertilized, except pastureland ----- farms, 1987..	700	1 304	1 210	1 004	768	647	460		
1982..	827	1 317	1 276	1 115	789	658	494		
acres on which used, 1987..	129 482	159 866	192 278	168 762	131 344	74 932	59 603		
1982..	161 257	192 435	244 202	168 304	145 844	69 361	65 588		
Pastureland and rangeland fertilized ----- farms, 1987..	36	55	106	176	38	161	125		
1982..	66	118	74	249	49	138	129		
acres on which used, 1987..	1 614	2 311	7 724	7 249	1 399	8 986	17 649		
1982..	3 268	3 989	3 201	10 375	2 083	8 241	15 466		
Lime ----- farms, 1987..	125	414	304	171	72	246	169		
1982..	81	417	262	57	69	156	129		
acres on which used, 1987..	8 444	18 111	18 589	12 780	6 212	20 445	11 934		
1982..	3 196	15 805	13 269	4 104	3 652	4 930	6 272		
tons, 1987..	13 138	53 731	54 240	21 651	11 067	52 769	35 699		
1982..	6 684	41 010	39 145	8 965	7 752	14 495	17 050		
Sprays, dusts, granules, fumigants, etc., to control—									
Insects on hay and other crops ----- farms, 1987..	234	897	870	509	282	254	174		
1982..	274	819	943	588	218	341	235		
acres on which used, 1987..	28 067	93 206	110 419	62 743	25 202	26 919	18 134		
1982..	47 228	119 316	173 226	72 725	36 321	43 966	34 551		
Nematodes in crops ----- farms, 1987..	33	67	35	37	27	9	6		
1982..	25	92	91	15	1	73	15		
acres on which used, 1987..	3 147	7 328	2 310	2 685	4 309	1 169	1 061		
1982..	6 735	11 054	13 892	1 574	(D)	7 292	2 474		
Diseases in crops and orchards ----- farms, 1987..	1	10	13	19	25	-	21		
1982..	6	12	29	6	15	6	26		
acres on which used, 1987..	(D)	190	1 447	751	3 639	-	3 944		
1982..	18	1 555	7 253	690	(D)	60	3 590		
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	599	881	904	947	802	550	388		
1982..	769	887	1 041	943	864	488	424		
acres on which used, 1987..	174 991	100 811	171 855	170 797	191 817	60 313	66 631		
1982..	249 175	119 541	201 199	174 861	214 724	83 041	60 431		
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	9	14	2	20	13	8	6		
1982..	1	20	40	25	7	25	15		
acres on which used, 1987..	912	462	(D)	4 373	548	(D)	72		
1982..	(D)	3 618	1 407	5 360	350	666	358		

**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	Counties							
	Delaware	Des Moines	Dickinson	Dubuque	Emmet	Fayette	Floyd	Franklin
Commercial fertilizer ----- farms, 1987--	1 209	617	485	1 295	539	1 253	771	827
----- farms, 1982--	1 159	594	525	1 322	596	1 343	876	949
acres on which used, 1987--	180 421	95 066	85 279	139 482	100 583	199 597	126 585	164 923
----- acres on which used, 1982--	206 308	102 246	102 884	147 585	119 550	230 000	161 183	177 188
Cropland fertilized, except pastureland ----- farms, 1987--	1 203	611	485	1 278	539	1 221	762	827
----- farms, 1982--	1 148	577	524	1 290	592	1 325	876	949
acres on which used, 1987--	178 422	91 408	84 684	134 939	100 223	196 820	125 989	(D)
----- acres on which used, 1982--	204 368	99 704	100 779	143 003	116 737	226 036	160 789	175 735
Pastureland and rangeland fertilized ----- farms, 1987--	48	69	17	125	5	90	30	3
----- farms, 1982--	78	58	35	123	51	102	20	25
acres on which used, 1987--	1 999	3 658	595	4 543	360	2 777	596	(D)
----- acres on which used, 1982--	1 940	2 542	2 105	4 582	2 813	3 964	394	1 453
Lime ----- farms, 1987--	416	183	24	525	7	330	122	95
----- farms, 1982--	219	133	21	393	22	196	80	66
acres on which used, 1987--	23 743	11 047	775	20 019	780	16 115	8 371	8 225
----- acres on which used, 1982--	11 182	8 750	1 711	16 548	484	7 921	3 662	5 143
tons, 1987--	71 569	28 998	1 307	62 830	1 520	41 684	20 248	22 563
----- tons, 1982--	31 801	23 814	2 248	44 215	1 372	21 048	11 825	15 130
Sprays, dusts, granules, fumigants, etc., to control--								
Insects on hay and other crops ----- farms, 1987--	842	357	185	897	142	697	296	329
----- farms, 1982--	731	390	125	898	157	679	216	345
acres on which used, 1987--	109 821	38 729	16 506	71 310	19 752	87 243	31 262	45 041
----- acres on which used, 1982--	116 350	59 196	23 462	85 383	18 268	103 239	43 795	51 599
Nematodes in crops ----- farms, 1987--	57	23	9	146	7	66	20	12
----- farms, 1982--	48	30	1	92	17	84	16	22
acres on which used, 1987--	7 172	1 727	36	9 013	1 152	7 310	691	1 813
----- acres on which used, 1982--	4 826	1 504	(D)	8 403	1 489	6 687	2 060	2 399
Diseases in crops and orchards ----- farms, 1987--	2	14	16	39	-	21	6	9
----- farms, 1982--	2	10	-	36	8	15	1	7
acres on which used, 1987--	(D)	899	16	1 815	-	1 915	337	(D)
----- acres on which used, 1982--	(D)	462	-	1 501	240	3 115	(D)	1 235
Weeds, grass, or brush in crops and pasture ----- farms, 1987--	905	506	437	894	478	930	700	792
----- farms, 1982--	809	456	503	942	596	1 018	796	845
acres on which used, 1987--	129 452	82 584	114 490	75 498	140 331	162 871	149 641	203 360
----- acres on which used, 1982--	141 446	106 430	136 407	89 085	178 320	199 886	197 524	241 093
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987--	29	3	1	20	9	13	7	-
----- farms, 1982--	26	21	4	38	14	15	1	11
acres on which used, 1987--	1 930	(D)	(D)	2 375	923	1 381	1 127	-
----- acres on which used, 1982--	3 319	2 399	296	2 815	1 841	1 226	(D)	2 250

  

Chemicals used	Counties							
	Fremont	Greene	Grundy	Guthrie	Hamilton	Hancock	Hardin	Harrison
Commercial fertilizer ----- farms, 1987--	612	786	879	712	884	902	869	841
----- farms, 1982--	600	815	906	744	943	955	915	979
acres on which used, 1987--	116 851	156 120	159 353	107 726	166 401	170 668	165 200	177 067
----- acres on which used, 1982--	106 382	160 377	160 671	122 404	190 343	173 502	189 383	194 826
Cropland fertilized, except pastureland ----- farms, 1987--	602	786	879	679	884	890	869	831
----- farms, 1982--	575	796	894	710	943	949	905	974
acres on which used, 1987--	113 738	154 911	156 852	101 294	165 974	170 242	163 498	169 663
----- acres on which used, 1982--	100 910	158 142	159 132	112 885	190 135	172 163	187 461	182 281
Pastureland and rangeland fertilized ----- farms, 1987--	79	14	69	80	28	20	58	149
----- farms, 1982--	143	53	38	159	16	54	53	242
acres on which used, 1987--	3 113	1 209	2 501	6 432	427	426	1 702	7 404
----- acres on which used, 1982--	5 472	2 235	1 539	9 519	208	1 339	1 922	12 545
Lime ----- farms, 1987--	67	71	289	234	65	60	148	10
----- farms, 1982--	68	37	113	146	24	9	53	25
acres on which used, 1987--	4 222	9 711	22 292	18 871	4 753	4 291	10 872	510
----- acres on which used, 1982--	5 703	1 756	7 472	6 547	2 360	722	2 868	466
tons, 1987--	8 469	19 913	49 076	33 915	9 586	15 343	20 574	900
----- tons, 1982--	9 604	3 643	16 196	12 757	3 325	2 136	7 949	378
Sprays, dusts, granules, fumigants, etc., to control--								
Insects on hay and other crops ----- farms, 1987--	276	131	495	190	222	337	378	423
----- farms, 1982--	172	157	428	417	165	233	331	532
acres on which used, 1987--	39 499	18 568	70 060	20 813	35 562	35 434	49 639	60 737
----- acres on which used, 1982--	32 155	26 182	65 802	54 599	34 344	34 764	58 899	79 786
Nematodes in crops ----- farms, 1987--	12	3	16	-	11	9	19	26
----- farms, 1982--	6	9	29	9	22	2	14	11
acres on which used, 1987--	1 220	281	7 171	-	244	531	1 960	3 726
----- acres on which used, 1982--	696	1 313	2 010	2 061	3 485	(D)	1 049	270
Diseases in crops and orchards ----- farms, 1987--	13	11	15	19	20	2	14	13
----- farms, 1982--	10	2	22	10	2	6	14	12
acres on which used, 1987--	971	506	1 810	3 868	2 535	(D)	1 128	578
----- acres on which used, 1982--	920	(D)	7 655	4 078	(D)	12	536	587
Weeds, grass, or brush in crops and pasture ----- farms, 1987--	563	775	788	698	782	819	728	682
----- farms, 1982--	588	743	822	653	820	837	851	748
acres on which used, 1987--	169 812	227 446	190 282	138 245	209 924	217 512	202 215	190 293
----- acres on which used, 1982--	171 568	216 812	197 844	130 155	230 633	221 460	224 751	190 756
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987--	2	1	11	3	1	9	3	9
----- farms, 1982--	17	8	7	16	19	8	15	-
acres on which used, 1987--	(D)	(D)	1 114	(D)	(D)	1 478	(D)	652
----- acres on which used, 1982--	4 064	2 773	(D)	5 466	4 821	1 824	2 134	-

**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							
	Henry	Howard	Humboldt	Ia	Iowa	Jackson	Jasper	Jefferson
Commercial fertilizer ----- farms, 1987..	719	781	677	647	841	1 057	1 089	566
1982..	732	830	698	704	882	1 086	1 103	634
acres on which used, 1987..	100 145	127 106	127 216	122 373	140 903	117 100	163 343	89 040
1982..	112 849	128 318	147 641	122 332	160 142	136 484	183 706	92 113
Cropland fertilized, except pastureland ----- farms, 1987..	705	781	677	646	830	1 046	1 079	566
1982..	732	830	698	696	859	1 067	1 090	634
acres on which used, 1987..	99 267	125 939	127 084	117 567	133 196	109 914	160 755	86 451
1982..	111 215	124 392	(D)	118 567	150 755	128 545	178 450	88 806
Pastureland and rangeland fertilized ----- farms, 1987..	31	49	11	51	112	164	84	45
1982..	36	77	1	78	165	139	114	62
acres on which used, 1987..	878	1 167	132	4 806	7 707	7 186	2 588	2 589
1982..	1 634	3 926	(D)	3 765	9 387	7 939	5 256	3 307
Lime ----- farms, 1987..	267	230	52	106	230	283	362	226
1982..	167	126	35	93	158	267	223	121
acres on which used, 1987..	19 954	16 782	3 490	8 691	12 821	9 381	25 064	13 088
1982..	8 421	4 963	2 211	5 749	8 529	6 833	12 536	5 895
tons, 1987..	57 796	47 765	5 054	16 806	29 400	29 784	55 367	32 625
1982..	22 065	13 438	4 574	12 675	20 216	21 540	30 581	14 898
Sprays, dusts, granules, fumigants, etc., to control—								
Insects on hay and other crops ----- farms, 1987..	388	429	230	339	648	648	643	292
1982..	452	294	188	385	518	754	694	245
acres on which used, 1987..	41 844	45 963	33 586	44 192	88 991	58 072	71 378	39 368
1982..	67 592	30 764	25 536	55 209	106 151	90 576	87 202	34 864
Nematodes in crops ----- farms, 1987..	18	15	17	35	29	42	32	3
1982..	11	20	7	32	62	61	34	24
acres on which used, 1987..	1 327	977	990	3 888	3 317	4 494	1 666	473
1982..	1 121	860	1 080	5 846	9 254	8 351	5 268	3 100
Diseases in crops and orchards ----- farms, 1987..	2	15	11	3	14	9	10	8
1982..	13	12	-	8	17	9	7	32
acres on which used, 1987..	(D)	1 901	707	947	1 090	1 037	395	8
1982..	(D)	497	-	1 790	1 794	986	46	3 656
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	560	611	590	575	701	657	965	530
1982..	572	675	635	566	629	723	984	525
acres on which used, 1987..	91 420	122 662	167 989	143 557	118 189	69 396	208 990	103 253
1982..	111 014	133 648	194 915	120 892	139 982	87 659	203 812	105 825
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	9	11	24	-	3	15	44	1
1982..	46	14	8	1	41	16	11	19
acres on which used, 1987..	1 504	449	2 215	-	(D)	1 002	5 583	(D)
1982..	1 876	2 031	2 031	(D)	7 799	520	2 346	2 168

  

Chemicals used	County							
	Johnson	Jones	Keokuk	Kossuth	Lee	Linn	Louisa	Lucas
Commercial fertilizer ----- farms, 1987..	1 006	928	825	1 547	787	1 243	563	478
1982..	1 105	1 026	837	1 518	811	1 350	566	431
acres on which used, 1987..	134 854	139 119	141 433	276 070	110 361	169 325	92 709	53 664
1982..	164 196	169 241	146 457	294 024	106 313	183 969	103 373	52 807
Cropland fertilized, except pastureland ----- farms, 1987..	992	921	792	1 547	778	1 243	551	462
1982..	1 088	1 021	826	1 518	806	1 344	566	422
acres on which used, 1987..	131 790	136 356	132 000	275 548	107 066	167 835	91 631	41 863
1982..	160 467	164 496	142 885	293 146	103 243	182 190	101 522	44 542
Pastureland and rangeland fertilized ----- farms, 1987..	82	69	146	17	69	43	32	83
1982..	117	86	84	20	70	38	55	91
acres on which used, 1987..	3 064	2 763	9 433	522	3 295	1 490	1 078	11 801
1982..	3 729	4 745	3 572	878	3 070	1 779	1 851	8 265
Lime ----- farms, 1987..	268	216	237	40	185	226	156	127
1982..	261	169	163	3	170	211	76	53
acres on which used, 1987..	13 760	17 158	20 112	1 740	12 765	14 743	12 753	4 831
1982..	15 231	9 962	13 915	140	6 337	6 974	5 034	1 599
tons, 1987..	34 485	50 652	47 852	4 559	36 296	38 562	29 073	13 168
1982..	41 792	30 374	35 076	395	14 317	19 574	12 923	5 015
Sprays, dusts, granules, fumigants, etc., to control—								
Insects on hay and other crops ----- farms, 1987..	636	670	528	413	386	679	378	245
1982..	738	715	495	323	388	635	304	214
acres on which used, 1987..	71 873	90 403	85 683	49 815	42 304	71 284	53 625	20 067
1982..	101 413	109 002	83 378	48 823	53 132	85 745	39 351	19 478
Nematodes in crops ----- farms, 1987..	36	73	45	3	2	29	29	19
1982..	108	70	65	28	27	59	45	37
acres on which used, 1987..	3 269	6 832	6 127	1 121	(D)	2 563	2 798	1 075
1982..	18 447	7 734	6 785	4 155	2 209	6 648	10 256	3 651
Diseases in crops and orchards ----- farms, 1987..	10	14	11	8	7	6	30	7
1982..	48	22	15	14	28	24	4	4
acres on which used, 1987..	333	784	926	98	40	236	3 828	350
1982..	1 885	879	1 633	3 430	2 231	3 597	7 380	772
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	801	689	693	1 429	636	1 046	453	339
1982..	785	818	793	1 368	635	1 149	545	337
acres on which used, 1987..	125 588	110 398	143 683	394 042	112 563	158 428	111 667	44 873
1982..	136 392	149 691	159 798	404 199	100 063	203 352	120 472	44 969
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	18	35	10	3	16	35	14	1
1982..	26	7	32	20	31	17	21	7
acres on which used, 1987..	1 745	1 037	462	240	1 531	705	483	(D)
1982..	1 410	920	2 423	9 478	4 568	1 005	2 120	14

**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	Counties								
	Lyon	Madison	Mahaska	Marion	Marshall	Mills	Mitchell	Monona	
Commercial fertilizer ----- farms, 1987..	1 017	674	1 023	840	781	551	663	744	
	1 081	698	883	761	897	524	792	761	
	1982..								
	162 888	87 385	127 438	93 127	141 828	100 172	127 633	182 829	
acres on which used, 1987..	171 432	91 240	135 530	92 854	162 632	109 394	133 098	195 670	
	1 017	648	990	825	765	522	654	744	
	1 081	674	864	741	891	519	785	760	
	1982..								
Cropland fertilized, except pastureland ----- farms, 1987..	160 951	78 082	125 267	87 691	139 140	97 513	127 101	177 493	
	166 515	79 025	130 668	89 725	158 808	104 320	132 188	187 433	
	1982..								
	50	113	73	99	44	62	23	79	
Pastureland and rangeland fertilized ----- farms, 1987..	77	135	100	84	59	76	18	93	
	1 737	9 303	2 171	5 436	2 688	2 659	532	5 336	
	1982..								
	4 917	12 215	4 862	3 129	3 824	5 074	910	8 237	
Lime ----- farms, 1987..	81	175	328	239	269	54	138	11	
	54	96	146	101	93	13	81	7	
	1982..								
	6 177	11 230	29 705	15 128	24 432	3 059	7 139	1 710	
acres on which used, 1987..	3 498	2 352	10 060	6 640	7 092	1 029	5 295	938	
	11 363	27 281	68 672	35 258	60 136	6 307	21 661	2 505	
	1982..								
	6 716	5 356	24 259	12 065	17 061	2 391	14 305	1 738	
Sprays, dusts, granules, fumigants, etc., to control—									
	472	276	517	386	463	266	353	376	
	1982..								
	59 045	23 096	58 820	34 025	64 925	36 494	45 088	66 043	
Insects on hay and other crops ----- farms, 1987..	50 822	30 340	78 841	39 482	94 552	47 804	49 362	76 825	
	1982..								
	17	49	34	29	24	20	7	15	
	1982..								
Nematodes in crops ----- farms, 1987..	11	42	28	36	20	19	44	28	
	2 550	3 544	3 587	2 954	1 987	984	2 280	3 901	
	1982..								
	1 819	3 964	3 846	5 314	2 130	2 880	4 026	5 729	
Diseases in crops and orchards ----- farms, 1987..	13	25	1	1	18	20	17	35	
	1982..								
	861	3 168	(D)	(D)	1 604	1 186	760	1 997	
	1982..								
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	5 400	(D)	2 235	(D)	1 812	4 861	4 072	(D)	
	1982..								
	840	603	818	664	746	517	630	609	
	1982..								
acres on which used, 1987..	901	662	734	645	741	472	680	615	
	178 188	106 497	157 875	99 191	163 851	134 890	146 246	193 925	
	1982..								
	195 602	115 485	142 671	108 404	182 790	167 304	157 916	191 120	
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	8	-	2	11	2	21	1	9	
	1982..								
	21	16	9	38	29	11	3	1	
	1982..								
acres on which used, 1987..	1 028	-	(D)	1 120	(D)	1 749	(D)	360	
	4 497	606	181	1 419	1 874	4 146	1 402	(D)	
	1982..								

  

Chemicals used	Counties								
	Monroe	Montgomery	Muscatine	O'Brien	Osceola	Page	Palo Alto	Plymouth	
Commercial fertilizer ----- farms, 1987..	488	572	671	1 016	839	809	845	1 379	
	1982..								
	414	514	786	1 039	873	750	805	1 418	
	1982..								
acres on which used, 1987..	66 927	97 104	108 102	174 268	102 880	117 562	145 989	233 968	
	44 059	100 118	129 609	165 279	121 640	115 732	148 389	267 285	
	1982..								
Cropland fertilized, except pastureland ----- farms, 1987..	485	553	671	1 012	627	782	845	1 361	
	1982..								
	376	493	786	1 014	672	717	796	1 398	
	1982..								
acres on which used, 1987..	54 414	87 877	106 907	174 182	102 182	104 470	144 888	223 827	
	36 153	91 577	126 484	162 460	121 204	99 993	147 729	256 849	
	1982..								
Pastureland and rangeland fertilized ----- farms, 1987..	95	117	36	8	37	175	56	190	
	1982..								
	102	134	70	76	20	243	37	212	
	1982..								
acres on which used, 1987..	12 513	9 227	1 195	86	698	13 092	1 101	10 141	
	7 906	8 541	3 125	2 819	436	15 739	660	10 436	
	1982..								
Lime ----- farms, 1987..	160	165	124	280	77	201	73	94	
	1982..								
	69	96	106	113	33	115	12	81	
	1982..								
acres on which used, 1987..	9 237	15 727	10 535	24 099	10 154	15 801	3 875	6 972	
	3 268	5 291	5 204	9 749	1 010	6 609	1 059	5 533	
	1982..								
	22 922	30 825	25 021	38 485	12 073	31 737	6 355	12 838	
tons, 1987..	8 166	11 216	12 575	17 922	1 376	15 323	1 539	7 785	
	1982..								
	183	233	449	376	133	348	226	689	
	1982..								
Sprays, dusts, granules, fumigants, etc., to control—									
	178	314	538	310	127	324	252	782	
	1982..								
	13 832	34 626	52 035	57 224	17 138	29 675	37 694	86 722	
Insects on hay and other crops ----- farms, 1987..	11 597	43 848	74 879	46 403	20 220	34 704	34 217	107 511	
	1982..								
	16	15	33	27	1	8	4	51	
	1982..								
Nematodes in crops ----- farms, 1987..	37	6	62	10	15	13	10	51	
	3 696	1 711	3 824	3 675	(D)	141	1 730	6 078	
	1982..								
	3 150	1 004	5 715	1 910	1 612	4 881	2 915	8 259	
Diseases in crops and orchards ----- farms, 1987..	-	1	56	28	17	7	8	18	
	1982..								
	6	16	32	10	1	6	8	26	
	1982..								
acres on which used, 1987..	-	(D)	3 326	3 613	2 726	852	(D)	543	
	28	1 286	2 065	(D)	(D)	1 623	3 685	2 762	
	1982..								
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	453	504	546	893	598	796	742	1 191	
	1982..								
	363	442	554	962	547	659	693	1 240	
	1982..								
acres on which used, 1987..	52 415	112 813	96 672	212 408	149 156	144 863	188 100	229 404	
	38 154	122 345	101 251	232 875	151 122	147 981	206 757	264 985	
	1982..								
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	16	3	9	10	17	1	14	17	
	1982..								
	33	11	35	11	34	-	25	22	
	1982..								
acres on which used, 1987..	320	(D)	1 435	2 059	1 810	(D)	3 092	3 598	
	2 067	(D)	1 367	1 447	5 666	-	4 730	3 152	
	1982..								

**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	Pocahontas	Polk	Pottawattamie	Poweshiek	Ringgold	Sac	Scott	Shelby
Commercial fertilizer ----- farms, 1987--	862	687	1 247	810	515	817	723	989
1982--	921	732	1 340	897	569	867	858	1 048
acres on which used, 1987--	142 329	105 398	243 740	128 840	80 907	144 080	128 697	181 850
1982--	163 919	101 556	278 866	137 863	98 890	177 881	160 666	172 535
Cropland fertilized, except pastureland ----- farms, 1987--	857	674	1 204	793	496	810	716	971
1982--	921	714	1 322	884	559	867	890	1 034
acres on which used, 1987--	142 219	104 961	234 939	120 088	65 769	142 271	126 523	176 577
1982--	(D)	100 094	270 904	130 988	81 235	175 308	158 256	165 873
Pastureland and rangeland fertilized ----- farms, 1987--	6	27	217	121	153	40	45	133
1982--	2	63	233	132	217	62	78	146
acres on which used, 1987--	110	437	8 801	8 752	15 138	1 809	2 174	5 273
1982--	(D)	1 462	7 962	6 875	17 655	2 573	2 410	6 662
Lime ----- farms, 1987--	99	105	116	273	200	125	175	169
1982--	34	52	132	141	155	174	125	53
acres on which used, 1987--	4 045	8 152	6 846	18 743	13 178	8 730	12 760	15 178
1982--	1 140	3 761	9 199	6 445	7 158	11 995	7 528	8 218
tons, 1987--	7 265	17 644	12 072	45 351	30 782	13 023	31 800	30 099
1982--	2 098	9 445	19 865	15 465	18 113	21 596	17 238	16 449
Sprays, dusts, granules, fumigants, etc., to control—								
Insects on hay and other crops ----- farms, 1987--	186	273	827	450	215	365	576	553
1982--	199	221	837	457	310	399	592	611
acres on which used, 1987--	23 938	32 429	104 387	41 146	22 955	50 764	73 420	75 970
1982--	43 650	25 018	136 012	59 774	36 150	73 824	111 582	82 326
Nematodes in crops ----- farms, 1987--	23	35	17	—	8	17	96	36
1982--	5	20	46	27	7	22	71	27
acres on which used, 1987--	2 640	2 801	3 130	—	1 756	1 718	12 006	5 958
1982--	1 013	506	6 990	2 011	1 848	6 354	9 620	5 005
Diseases in crops and orchards ----- farms, 1987--	—	23	12	—	1	14	15	1
1982--	1	19	20	31	15	13	11	10
acres on which used, 1987--	—	2 967	526	—	(D)	2 951	760	(D)
1982--	(D)	2 258	4 615	3 872	1 711	4 484	1 840	798
Weeds, grass, or brush in crops and pasture ----- farms, 1987--	735	600	1 114	726	394	699	587	870
1982--	857	669	1 078	780	469	746	659	777
acres on which used, 1987--	207 380	150 632	292 057	146 173	76 073	170 520	113 108	178 499
1982--	249 407	157 628	310 986	151 595	78 724	226 065	132 922	146 151
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987--	23	9	7	19	16	16	2	3
1982--	17	18	18	14	19	14	8	2
acres on which used, 1987--	3 778	402	790	4 659	88	3 385	(D)	1 760
1982--	2 434	966	4 163	6 160	2 513	42	720	(D)

  

Chemicals used	Sioux	Story	Tama	Taylor	Union	Van Buren	Wapello	Warren
Commercial fertilizer ----- farms, 1987--	1 513	846	1 157	580	487	593	560	814
1982--	1 512	931	1 142	578	537	627	686	807
acres on which used, 1987--	250 375	143 994	169 572	80 240	61 843	68 567	64 030	96 002
1982--	256 376	161 609	179 791	78 476	63 096	79 669	85 430	112 425
Cropland fertilized, except pastureland ----- farms, 1987--	1 487	845	1 148	573	468	578	547	783
1982--	1 505	922	1 118	571	513	615	673	790
acres on which used, 1987--	249 310	143 404	166 017	70 488	50 199	63 021	60 770	89 225
1982--	252 191	160 459	173 951	67 329	51 057	75 467	81 092	105 495
Pastureland and rangeland fertilized ----- farms, 1987--	54	35	66	87	110	104	52	84
1982--	67	31	150	138	141	85	78	98
acres on which used, 1987--	1 065	590	3 555	9 752	11 644	5 546	3 260	6 777
1982--	4 185	1 150	5 840	11 147	12 039	4 202	4 338	6 930
Lime ----- farms, 1987--	261	88	267	186	145	249	198	174
1982--	115	47	162	78	156	110	146	145
acres on which used, 1987--	20 324	7 764	24 781	19 196	6 313	17 452	9 247	9 927
1982--	7 721	3 412	9 249	4 185	6 047	3 409	4 990	6 419
tons, 1987--	38 696	19 490	54 158	38 288	14 662	51 957	24 925	20 075
1982--	13 242	8 759	22 843	8 832	13 530	8 730	13 588	13 369
Sprays, dusts, granules, fumigants, etc., to control—								
Insects on hay and other crops ----- farms, 1987--	943	250	748	248	190	282	224	387
1982--	888	250	586	220	292	239	275	487
acres on which used, 1987--	117 503	29 600	86 558	27 021	17 603	30 186	23 847	34 057
1982--	127 481	39 527	86 410	32 969	22 809	38 630	39 786	66 989
Nematodes in crops ----- farms, 1987--	65	2	24	20	5	7	9	29
1982--	47	13	68	47	6	27	41	72
acres on which used, 1987--	7 738	(D)	1 750	1 285	919	420	368	3 153
1982--	8 037	2 015	3 902	4 067	775	2 698	2 272	4 939
Diseases in crops and orchards ----- farms, 1987--	29	9	36	—	—	28	—	12
1982--	37	6	6	15	22	25	9	25
acres on which used, 1987--	1 838	28	1 164	—	—	1 772	—	916
1982--	4 320	(D)	858	1 160	858	2 356	1 992	722
Weeds, grass, or brush in crops and pasture ----- farms, 1987--	1 240	835	923	528	424	458	451	685
1982--	1 234	868	958	574	531	491	639	763
acres on which used, 1987--	231 484	207 693	185 828	93 817	78 611	62 777	70 344	102 534
1982--	238 926	227 780	205 894	98 433	78 167	84 317	86 613	133 099
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987--	7	15	6	—	10	11	5	7
1982--	35	13	24	15	8	5	20	40
acres on which used, 1987--	2 822	2 633	84	—	388	505	85	14
1982--	3 636	3 265	355	1 000	759	2 200	7 594	1 356

**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	Washington	Wayne	Webster	Winnebago	Winneshiek	Woodbury	Worth	Wright
Commercial fertilizer ----- farms, 1987..	907	524	1 028	634	1 332	1 024	547	784
1982..	889	615	1 056	619	1 337	1 125	619	837
acres on which used, 1987..	127 132	70 094	186 178	105 694	152 409	213 612	94 189	160 046
1982..	162 864	92 628	188 185	123 939	161 780	259 200	126 281	171 400
Cropland fertilized, except pastureland ----- farms, 1987..	906	484	1 020	634	1 283	1 003	541	784
1982..	889	587	1 056	619	1 309	1 074	619	837
acres on which used, 1987..	123 899	56 591	185 947	(D)	146 824	203 563	93 384	159 741
1982..	159 833	82 862	188 093	123 715	158 653	245 986	126 058	171 127
Pastureland and rangeland fertilized ----- farms, 1987..	71	158	15	1	149	157	22	13
1982..	55	140	8	14	138	244	14	4
acres on which used, 1987..	3 233	13 503	231	(D)	5 585	10 049	805	305
1982..	3 031	9 766	92	224	3 127	13 214	223	273
Lime ----- farms, 1987..	310	191	63	19	436	52	33	12
1982..	133	123	32	7	243	31	50	5
acres on which used, 1987..	23 354	12 394	5 948	1 442	15 297	6 178	3 845	1 393
1982..	8 295	4 585	1 981	416	10 223	2 937	4 705	330
tons, 1987..	56 771	31 754	13 301	2 368	45 837	8 920	9 092	2 159
1982..	23 304	12 053	3 302	675	21 129	3 726	5 777	800
Sprays, dusts, granules, fumigants, etc., to control—								
Insects on hay and other crops ----- farms, 1987..	565	293	245	153	947	638	225	140
1982..	605	303	176	165	945	630	246	139
acres on which used, 1987..	68 727	33 486	31 322	16 159	76 911	114 525	19 166	17 854
1982..	112 411	49 535	30 736	21 037	110 803	144 247	26 249	22 913
Nematodes in crops ----- farms, 1987..	8	28	7	7	57	35	7	14
1982..	82	7	8	21	164	22	9	6
acres on which used, 1987..	1 578	2 411	91	105	5 037	4 708	592	335
1982..	13 504	1 750	632	1 698	18 599	3 468	1 317	430
Diseases in crops and orchards ----- farms, 1987..	22	—	20	—	33	3	2	10
1982..	41	—	8	8	39	7	12	9
acres on which used, 1987..	1 508	—	(D)	—	1 459	1 113	(D)	464
1982..	7 933	—	2 062	1 200	3 501	656	1 502	2 890
Weeds, grass, or brush in crops and pasture ----- farms, 1987..	729	413	969	574	1 025	942	520	778
1982..	767	483	987	612	769	935	589	730
acres on which used, 1987..	134 519	62 000	280 739	157 332	99 233	213 291	122 040	242 315
1982..	160 224	80 627	296 995	158 517	95 982	248 884	165 714	240 572
Chemicals used for defoliation or for growth control of crops or thinning of fruit ----- farms, 1987..	12	13	8	5	22	2	2	—
1982..	22	14	5	7	25	6	13	30
acres on which used, 1987..	3 475	436	1 403	(D)	1 704	(D)	(D)	—
1982..	2 105	504	375	4 258	8 480	790	1 489	4 776