

**KANSAS**

# **Agricultural Chemical Usage**

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## **1999 Cattle Pesticide Summary**

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**Kansas  
Agricultural  
Statistics**

**May 2000**

**Kansas  
Department of  
Agriculture**

**1999  
KANSAS  
AGRICULTURAL CHEMICAL USAGE  
CATTLE PESTICIDE SUMMARY**

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1/ The sum of breakouts at the State level may not be the same as the State total included in the tables beginning on page 25 because not all breakouts could be published due to insufficient reports.



The tables included in this report summarize the pesticide usage by method of application, by region (shown on page 1) and by type of operation. The break-outs for the type of operations are: cow/calf, dairy, feedlot, stocker/feeder, and combination. The combination category is made up of operations with more than one type of cattle-raising operation (i.e. cow/calf and feedlot). Separate tables are provided by active ingredient for application on cattle, on cattle facilities, and for ear tags. Total pesticide usage by active ingredient on cattle and facilities is summarized by region and by type of operation. The only tables that provide total usage at the State level are included on pages 29 through 34. The pesticide usage reported in all other tables will not necessarily sum to the State totals because results could not be published for all breakouts due to insufficient reports.

The cattle treatments column represents one treatment or ear tag of the given active ingredient to an animal, not the total animals treated. Many animals may have received more than one treatment or ear tag and, if a product being used is made up of more than one active ingredient, then that animal is included under each type of active ingredient, thus showing the difference in cattle treatments and cattle treated.

Pesticide usage tables in this report include data from two types of reports: 1) complete data reports and 2) reports where a portion of the insecticide usage was unknown. These partial reports were mostly from respondents who had commercial applicators or a veterinarian apply some of the insecticide treatments and were unsure what was used. The following table shows the percentage of reports with incomplete data that are included in the pesticide usage tables.

#### PERCENTAGE OF TOTAL USABLE REPORTS WITH INCOMPLETE DATA

	Directly on Cattle	Premises	Ear Tags
	Percent		
<b>Region</b>			
1 .....	4.4	5.8 (3.1 com'l)	3.6
2 .....	8.4	2.6 (0.8 com'l)	10.2
3 .....	9.2	3.5 (1.2 com'l)	11.8
<b>Type of Operation</b>			
Cow - Calf .....	10.2	1.8	11.5
Stocker - Feeder .....	9.9	2.4	21.0
Feedlot .....	-	8.0 (6.7 com'l)	1.3
Dairy .....	10.3	29.3 (17.2 com'l)	5.2
<b>State</b> .....	7.9	3.7 (1.5 com'l)	9.4

For these incomplete reports, treatments of facilities and premises were applied by commercial applicators on 17.2 percent of the dairy farms and 6.7 percent of the feedlots. It was unknown what insecticides were used for these treatments.

## HIGHLIGHTS CATTLE PESTICIDE USAGE

The most commonly used active ingredient in the pesticides used by the cattle industry during 1999 was Ivermectin. There were over 1.6 million pour-on treatments of cattle using Ivermectin and nearly 1.9 million Ivermectin injections. Cyfluthrin was the most common active ingredient applied to dairy cattle. Doramectin and Moxidectin are two commonly used active ingredients that became available after 1994. Coumaphos and Permethrin were commonly used in 1994 and remained so in 1999. Commonly used insecticides in most cases does not equate into most poundage of active ingredient used. Tetrachlorvinphos had the largest quantity of active ingredient used. Methoxychlor and Clorsulon had the highest effectiveness ratings reported by users.

Dichlorvos remained the most commonly used product to control pests in or around cattle facilities. Almost 2,000 pounds of Dichlorvos were used in or around Kansas cattle facilities, nearly the same amount as was used in 1994.

Diazinon-treated ear tags remain the most commonly used treated ear tags. About 2,100 pounds of Diazinon were used in treated ear tags.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999			
					Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999	1994	1999		Excell.	Satis.	Poor
<b>Chlorpyrifos</b>								
Region 1								
Pour-On	<u>2/</u>							
Region 2								
Pour-On	<u>2/</u>							
Region 3								
Pour-On	<u>2/</u>							
Spray	<u>2/</u>							
State <u>3/</u>								
Pour-On	<u>2/</u>							
Spray	<u>2/</u>							
<b>Clorsulon <u>5/</u></b>								
Region 1								
Injection	172,500	312,200	180 <u>4/</u>	740	Lice, Flies <u>6/</u> , Grubs	50	50	
Region 2								
Injection	19,200	220,300	30 <u>4/</u>	230	Lice, Pasture Flies, Grubs	56	44	
Region 3								
Injection	40,100	11,600	60 <u>4/</u>	20	Lice, Pasture Flies, Grubs	50	50	
State <u>3/</u>								
Injection	231,800	544,100	270 <u>4/</u>	990	Lice, Pasture Flies, Grubs	53	47	

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add back to regions because of rounding. 4/ Correction made to 1994 published total. 5/ Active ingredient used in a product for both internal & external pests. 6/ Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999			
					Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999	1994	1999		Excell.	Satis.	Poor
<b>Coumaphos</b>								
Region 1								
Dust	84,200	25,000	170	170	Lice, Flies <u>5/</u> , Grubs		91	9
Pour-On	<u>2/</u>							
Rubbing Device	6,700	<u>2/</u>	40	<sup>4/</sup>				
Spray	<u>2/</u>	14,700		200	Lice, Pasture Flies	25	50	25
Region 2								
Dust	69,000	48,100	440	180	Lice, Flies <u>5/</u> , Grubs	13	75	12
Pour-On	11,300	15,100	170	110	Lice, Flies <u>5/</u> , Grubs	17	83	
Rubbing Device	13,700	<u>2/</u>	400					
Spray	21,700	<u>2/</u>	830					
Region 3								
Dust	146,200	72,300	910	550	Lice, Flies <u>5/</u> , Ticks	10	87	3
Pour-On	10,500	17,900	110	<sup>4/</sup> 210	Lice, Pasture Flies, Grubs	17	83	
Rubbing Device	25,500	19,200	750	880	Lice, Pasture Flies, Grubs	14	86	
Spray	40,700	51,200	870	<sup>4/</sup> 1,970	Lice, Flies <u>5/</u> , Ticks	24	71	5
State <u>3/</u>								
Dust	299,300	145,300	1,520	<sup>4/</sup> 900	Lice, Flies <u>5/</u> , Grubs	9	85	6
Pour-On	22,400	33,000	290	320	Lice, Flies <u>5/</u> , Grubs	17	83	
Rubbing Device	45,900	25,600	1,190	<sup>4/</sup> 1,060	Lice, Pasture Flies, Grubs	18	82	
Spray	63,800	69,000	1,750	<sup>4/</sup> 2,460	Lice, Flies <u>5/</u> , Ticks	27	65	8

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**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <u>1/</u>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Crotoxyphos</b>									
Region 1									
Rubbing Device		10,300		40	Pasture Flies		100		
Region 2									
Rubbing Device		<u>2/</u>							
Spray		<u>2/</u>							
Region 3									
Rubbing Device		<u>2/</u>							
Spray		<u>2/</u>							
State <u>3/</u>									
Rubbing Device		20,400		50	Lice, Pasture Flies, Grubs		100		
Spray		3,700		10	Lice, Pasture Flies		100		
<b>Cyfluthrin</b>									
Region 1									
Pour-On		155,900		130	Lice, Flies <u>4/</u> , Grubs	36	64		
Region 2									
Pour-On		176,100		60	Lice, Flies <u>4/</u> , Grubs	22	74	4	
Region 3									
Pour-On		21,200		20	Lice, Flies <u>4/</u> , Grubs	27	73		
State <u>3/</u>									
Pour-On		353,200		210	Lice, Flies <u>4/</u> , Grubs	27	71	2	

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**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <sup>1/</sup>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Dichlorvos</b>									
Region 1									
Rubbing Device	<u>2/</u>	11,700		20	Lice, Pasture Flies		100		
Spray	<u>2/</u>	38,700		30	Pasture Flies		100		
Region 2									
Pour-On		<u>2/</u>							
Rubbing Device	<u>2/</u>	<u>2/</u>							
Spray	<u>2/</u>	64,100		90	Lice, Flies <u>5/</u>		11	89	
Region 3									
Pour-On		<u>2/</u>							
Rubbing Device	<u>2/</u>	<u>2/</u>							
Spray	23,900	13,600	110	30	Lice, Flies <u>5/</u> , Grubs		29	57	14
State <u>3/</u>									
Pour-On		<u>2/</u>							
Rubbing Device	<u>2/</u>	21,800		20	Lice, Pasture Flies, Grubs			100	
Spray	31,900	116,400	150	150	Lice, Flies <u>5/</u> , Grubs		16	79	5
<b>Doramectin <u>4/</u></b>									
Region 1									
Pour-On		248,000		40	Lice, Flies <u>5/</u> , Grubs		52	48	
Injection		701,500		80	Lice, Pasture Flies, Grubs		75	25	
Region 2									
Pour-On		125,700		100	Lice, Flies <u>5/</u> , Grubs		23	74	3
Injection		<u>2/</u>							
Region 3									
Pour-On		93,900		50	Lice, Pasture Flies, Grubs		46	54	
Injection		<u>2/</u>							
State <u>3/</u>									
Pour-On		467,600		190	Lice, Flies <u>5/</u> , Grubs		37	62	1
Injection		820,600		100	Lice, Pasture Flies, Grubs		56	44	

<sup>1/</sup> May not add to 100 percent due to rounding. <sup>2/</sup> Insufficient data to report. <sup>3/</sup> State totals may not add back to regions because of rounding. <sup>4/</sup> Active ingredient used in a product for both internal & external pests. <sup>5/</sup> Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <u>1/</u>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Eprinomectin 5/</b>									
Region 1	Pour-On	9,600		10	Lice, Pasture Flies	25	75		
Region 2	Pour-On	28,000		10	Lice, Pasture Flies, Grubs	22	78		
Region 3	Pour-On	40,900		10	Lice, Pasture Flies, Grubs	27	73		
State <u>3/</u>	Pour-On	78,500		30	Lice, Pasture Flies, Grubs	25	75		
<b>Famphur</b>									
Region 1	Pour-On	40,100	1,000	1,340	40	Lice, Grubs		100	
Region 2	Pour-On	125,900	19,600	3,820	770	Lice, Pasture Flies, Grubs	22	78	
Region 3	Pour-On	34,000	5,000	1,010	140	Lice, Pasture Flies, Grubs	20	80	
State <u>3/</u>	Pour-On	200,000	25,600	6,170	950	Lice, Pasture Flies, Grubs	19	81	
<b>Fenvalerate</b>									
Region 2	Spray		<u>2/</u>						
State <u>3/</u>	Spray		<u>2/</u>						
<b>Fenthion</b>									
Region 1	Pour-On	672,900	64,200	5,340	780	Lice, Pasture Flies, Grubs	37	63	
	Rubbing Device	<u>2/</u>							
	Spray	<u>2/</u>							
Region 2	Pour-On	1,094,900	91,300	14,190 <sup>4/</sup>	650	Lice, Pasture Flies, Grubs	24	64	12
	Spray	<u>2/</u>							
Region 3	Pour-On	153,600	86,000	2,680	1,090	Lice, Pasture Flies, Grubs	22	75	3
State <u>3/</u>	Pour-On	1,921,400	241,500	22,210 <sup>4/</sup>	2,520	Lice, Pasture Flies, Grubs	26	69	5
	Rubbing Device	<u>2/</u>							
	Spray	<u>2/</u>							

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**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <sup>1/</sup>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Ivermectin <sup>5/</sup></b>									
Region 1									
Bolus			<u>2/</u>						
Injection	695,900	1,228,800	250 <sup>4/</sup>	200	Lice, Pasture Flies, Grubs	52	48		
Pour-On	391,500	983,000	230 <sup>4/</sup>	310	Lice, Pasture Flies, Grubs	42	57	1	
Region 2									
Injection	303,400	604,500	60 <sup>4/</sup>	70	Lice, Pasture Flies, Grubs	50	50		
Pour-On	503,700	348,300	360 <sup>4/</sup>	140	Lice, Pasture Flies, Grubs	35	65		
Region 3									
Injection	167,700	40,400	90 <sup>4/</sup>	10	Lice, Pasture Flies, Grubs	31	69		
Pour-On	213,400	285,600	220 <sup>4/</sup>	160	Lice, Pasture Flies, Grubs	32	65	3	
State <sup>3/</sup>									
Bolus			<u>2/</u>						
Injection	1,167,000	1,873,700	400 <sup>4/</sup>	280	Lice, Pasture Flies, Grubs	50	50		
Pour-On	1,108,600	1,616,900	810 <sup>4/</sup>	610	Lice, Pasture Flies, Grubs	36	63	1	
<b>Lambda Cyhalothrin</b>									
Region 1									
Pour-On	17,600				10	Lice, Pasture Flies	67	33	
Region 2									
Pour-On	<u>2/</u>								
Region 3									
Pour-On	<u>2/</u>								
State <sup>3/</sup>									
Pour-On	37,600				20	Lice, Flies <sup>6/</sup> , Grubs	92	8	
<b>Lindane</b>									
Region 2									
Dust	<u>2/</u>								
State <sup>3/</sup>									
Dust	<u>2/</u>								

<sup>1/</sup> May not add to 100 percent due to rounding. <sup>2/</sup> Insufficient data to report. <sup>3/</sup> State totals may not add back to regions because of rounding. <sup>4/</sup> Correction made to 1994 published total. <sup>5/</sup> Active ingredient used in a product for both internal & external pests. <sup>6/</sup> Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <u>1/</u>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Malathion</b>									
Region 1									
Dust	18,000	<u>2/</u>	600						
Pour-On	<u>2/</u>								
Rubbing Device	<u>2/</u>								
Spray	16,100	<u>2/</u>	290						
Region 2									
Dust	6,100	2,200	80	30	Lice, Pasture Flies		67	33	
Pour-On	<u>2/</u>								
Rubbing Device	<u>2/</u>								
Spray	<u>2/</u>								
Region 3									
Dust	26,400	4,500	280	30	Pasture Flies		33	67	
Pour-On	<u>2/</u>	<u>2/</u>							
Rubbing Device	43,200	<u>2/</u>	14,150						
Spray	13,000	<u>2/</u>	550						
State <u>3/</u>									
Dust	50,500	13,800	960	80	Lice, Pasture Flies		14	72	14
Pour-On	<u>2/</u>	<u>2/</u>							
Rubbing Device	55,900	<u>2/</u>	16,640						
Spray	34,900	5,300	1,140	240	Lice, Pasture Flies		67	33	
<b>Methoprene</b>									
Region 1									
Feed	<u>2/</u>	20,500		40	Flies <u>4/</u> , Grubs		50	40	10
Region 2									
Feed	32,600	30,100	50	60	Lice, Pasture Flies, Grubs		27	73	
Region 3									
Feed	14,300	12,800	30	30	Lice, Flies <u>4/</u> , Horse Flies		44	56	
Other	<u>2/</u>								
State <u>3/</u>									
Feed	<u>5/</u>	63,400	90	130	Lice, Flies <u>4/</u> , Grubs		38	59	3
Other	<u>2/</u>								

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add back to regions because of rounding. 4/ Confinement & pasture flies were reported. 5/ Not shown due to abnormality in reported data.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <u>1/</u>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Methoxychlor</b>									
Region 1	Dust	<u>2/</u>	<u>2/</u>						
Region 2	Dust	7,200	<u>2/</u>	390					
	Rubbing Device	<u>2/</u>	<u>2/</u>						
Region 3	Dust	13,200	<u>2/</u>	1,330					
	Pour-On	<u>2/</u>							
	Rubbing Device		<u>2/</u>						
	Spray	<u>2/</u>							
State <u>3/</u>	Dust	31,300	9,100	2,260	550	Lice, Flies <u>5/</u> , Ticks	25	75	
	Pour-On	<u>2/</u>							
	Rubbing Device	<u>2/</u>	<u>2/</u>						
	Spray	<u>2/</u>							
<b>Moxidectin <u>4/</u></b>									
Region 1	Pour-On		147,500		50	Lice, Pasture Flies, Grubs	43	50	7
Region 2	Pour-On		137,700		70	Lice, Pasture Flies, Grubs	46	54	
Region 3	Pour-On		97,500		50	Lice, Pasture Flies, Grubs	34	66	
State <u>3/</u>	Pour-On		382,700		170	Lice, Pasture Flies, Grubs	41	58	1

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**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <u>1/</u>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Permethrin</b>									
Region 1									
Pour-On	192,400	323,500	420	620	Lice, Flies <u>5/</u> , Grubs	35	61	4	
Rubbing Device	5,100	<u>2/</u>	490 <sup>4/</sup>						
Spray	<u>2/</u>	14,900		20	Lice, Flies <u>5/</u>	40	60		
Region 2									
Dust	<u>2/</u>	<u>2/</u>							
Pour-On	283,100	154,000	900 <sup>4/</sup>	370	Lice, Pasture Flies, Grubs	27	73		
Rubbing Device	20,000	8,200	290 <sup>4/</sup>	30	Lice, Pasture Flies, Ticks	50	50		
Spray	58,400	14,200	760	70	Lice, Flies <u>5/</u>	11	78	11	
Region 3									
Dust	<u>2/</u>	<u>2/</u>							
Pour-On	219,800	78,600	560 <sup>4/</sup>	130	Lice, Pasture Flies, Grubs	12	88		
Rubbing Device	17,400	33,300	300 <sup>4/</sup>	130	Lice, Flies <u>5/</u> , Grubs	20	67	13	
Spray	41,800	52,600	150 <sup>4/</sup>	380	Lice, Flies <u>5/</u> , Grubs	21	68	11	
Dip		<u>2/</u>							
State <u>3/</u>									
Dust	<u>2/</u>	<u>2/</u>							
Pour-On	695,300	556,100	1,880 <sup>4/</sup>	1,120	Lice, Pasture Flies, Grubs	23	76	1	
Rubbing Device	42,500	43,300	1,080 <sup>4/</sup>	160	Lice, Flies <u>5/</u> , Ticks	32	60	8	
Spray	102,900	81,700	920 <sup>4/</sup>	470	Lice, Flies <u>5/</u> , Grubs	21	70	9	
Dip		<u>2/</u>							
<b>Phosmet</b>									
Region 1									
Rubbing Device	<u>2/</u>	<u>2/</u>							
Spray	<u>2/</u>								
Region 2									
Pour-On	<u>2/</u>								
Rubbing Device		<u>2/</u>							
Spray	<u>2/</u>								
Region 3									
Pour-On	<u>2/</u>								
Rubbing Device		<u>2/</u>							
Spray	<u>2/</u>	<u>2/</u>							
State <u>3/</u>									
Pour-On	<u>2/</u>								
Rubbing Device	<u>2/</u>	6,100		40	Lice, Pasture Flies, Grubs		100		
Spray	<u>2/</u>	<u>2/</u>							

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add back to regions because of rounding. 4/ Correction made to 1994 published total. 5/ Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999			
					Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999	1994	1999		Excell.	Satis.	Poor
<b>Piperonyl Butoxide (Synergist)</b>								
Region 1	Pour-On	4,500	<u>2/</u>	10 <u>4/</u>				
Region 2	Dust	<u>2/</u>						
	Pour-On	86,100	6,000	180 <u>4/</u>	10	Lice, Pasture Flies, Grubs	60	40
	Rubbing Device		<u>2/</u>					
	Spray		<u>2/</u>					
Region 3	Dust	8,200		30				
	Pour-On	47,700	40,300	300 <u>4/</u>	80	Lice, Pasture Flies, Grubs	23	77
	Rubbing Device	<u>2/</u>	<u>2/</u>					
	Spray	<u>2/</u>	<u>2/</u>					
State <u>3/</u>	Dust	10,100		30				
	Pour-On	138,300	50,200	490 <u>4/</u>	90	Lice, Pasture Flies, Grubs	35	65
	Rubbing Device		<u>2/</u>					
	Spray		4,700		170	Lice, Flies <u>5/</u> , Grubs	33	67
<b>Pyrethrins</b>								
Region 2	Dust	<u>2/</u>						
	Spray		<u>2/</u>					
Region 3	Dust	8,200		*				
	Spray	<u>2/</u>	<u>2/</u>					
State <u>3/</u>	Dust	10,100		*				
	Spray	<u>2/</u>	4,700		40	Lice, Flies <u>5/</u> , Grubs	33	67
<b>Sulfur</b>								
Region 3	Dust	<u>2/</u>						
State <u>3/</u>	Dust	<u>2/</u>						

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add back to regions because of rounding. 4/ Correction made to 1994 published total. 5/ Confinement & pasture flies were reported. \* = Less than 10 pounds.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <u>1/</u>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Tetrachlorvinphos</b>									
Region 1									
Dust	<u>2/</u>								
Feed	<u>2/</u>	<u>2/</u>							
Pour-On	<u>2/</u>								
Rubbing Device	<u>2/</u>	<u>2/</u>							
Spray	2,300	<u>2/</u>	40 <sup>4/</sup>						
Region 2									
Dust	7,200	<u>2/</u>	140						
Feed		10,500		2,830	Flies <u>5/</u>		100		
Pour-On		<u>2/</u>							
Rubbing Device	<u>2/</u>								
Spray	10,700	60,100	140	230	Flies <u>5/</u>	20	80		
Region 3									
Dust	32,100	3,400	580	70	Lice, Pasture Flies		100		
Feed	<u>2/</u>	2,800		790	Flies <u>5/</u>		100		
Pour-On		<u>2/</u>							
Rubbing Device	<u>2/</u>								
Spray	23,900	12,300	420	120	Lice, Flies <u>5/</u> , Grubs	40	40	20	
State <u>3/</u>									
Dust	42,700	5,500	760	90	Lice, Pasture Flies	25	75		
Feed	<u>2/</u>	16,300		4,390	Flies <u>5/</u>	8	92		
Pour-On	<u>2/</u>	<u>2/</u>							
Rubbing Device	5,900	<u>2/</u>	70						
Spray	36,900	75,300	610	380	Lice, Flies <u>5/</u> , Grubs	25	67	8	
<b>Trichlorfon</b>									
Region 1									
Pour-On	104,000	3,500	1,320	70	Lice, Grubs	33	67		
Rubbing Device		<u>2/</u>							
Spray	<u>2/</u>								
Region 2									
Pour-On	93,500	<u>2/</u>	2,250						
Region 3									
Pour-On	66,300	4,000	1,090	80	Lice, Pasture Flies, Grubs	33	67		
State <u>3/</u>									
Pour-On	263,800	9,800	4,650	220	Lice, Pasture Flies, Grubs	25	75		
Rubbing Device		<u>2/</u>							
Spray	<u>2/</u>								

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add back to regions because of rounding. 4/ Correction made to 1994 published total. 5/ Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY TYPE OF OPERATION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999			
					Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999	1994	1999		Excell.	Satis.	Poor
<b>Chlorpyrifos</b>								
Cow - Calf								
Pour-On	<u>2/</u>							
Spray	<u>2/</u>							
Stocker - Feeder								
Pour - On	<u>2/</u>							
<b>Clorsulon <u>5/</u></b>								
Cow - Calf								
Injection	10,700	11,700	30 <sup>4/</sup>	20	Lice, Pasture Flies, Grubs	37	63	
Stocker - Feeder								
Injection	18,200		20 <sup>4/</sup>					
Feedlot								
Injection	96,200	409,900	110 <sup>4/</sup>	840	Lice, Flies <u>6/</u> , Grubs	50	50	
Combination <u>3/</u>								
Injection	106,700	122,500	110 <sup>4/</sup>	130	Lice, Pasture Flies, Grubs	80	20	
<b>Coumaphos</b>								
Cow - Calf								
Dust	157,400	86,700	750	650	Lice, Flies <u>6/</u> , Grubs	12	84	4
Pour-On	19,400	19,500	260	160	Lice, Flies <u>6/</u> , Grubs		100	
Rubbing Device	36,900	10,600	1,010 <sup>4/</sup>	630	Lice, Pasture Flies, Ticks	25	75	
Spray	19,300	51,600	750 <sup>4/</sup>	2,230	Lice, Pasture Flies, Ticks	30	60	10
Stocker - Feeder								
Dust	17,100	20,200	30	70	Lice, Pasture Flies, Ticks		100	
Pour-On	<u>2/</u>							
Rubbing Device	<u>2/</u>							
Spray	16,100	<u>2/</u>	610 <sup>4/</sup>					
Feedlot								
Dust	<u>2/</u>							
Spray	<u>2/</u>							
Dairy								
Dust	6,000	<u>2/</u>	20 <sup>4/</sup>					
Pour-On	<u>2/</u>							
Combination <u>3/</u>								
Dust	117,500	34,200	700	150	Lice, Flies <u>6/</u> , Grubs		85	15
Pour-On	<u>2/</u>	13,500		160	Lice, Pasture Flies, Grubs	67	33	
Rubbing Device	8,900	<u>2/</u>	160 <sup>4/</sup>					
Spray	28,400	13,400	390 <sup>4/</sup>	190	Lice, Pasture Flies, Ticks		100	

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). 4/ Correction made to 1994 published total. 5/ Active ingredient used in a product for both internal & external pests. 6/ Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY TYPE OF OPERATION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <u>1/</u>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Crotoxyphos</b>									
Cow - Calf									
Rubbing Device		12,000		20	Lice, Pasture Flies, Grubs		100		
Spray		3,500		10	Lice, Pasture Flies		100		
Stocker - Feeder									
Rubbing Device		<u>2/</u>							
Combination <u>3/</u>									
Rubbing Device		<u>2/</u>							
Spray		<u>2/</u>							
<b>Cyfluthrin</b>									
Cow - Calf									
Pour-On		33,600		20	Lice, Flies <u>5/</u> , Grubs		41	59	
Stocker - Feeder									
Pour-On		<u>2/</u>							
Feedlot									
Pour-On		255,200		150	Lice, Flies <u>5/</u> , Grubs		37	63	
Dairy									
Pour-On		10,900		20	Lice, Flies <u>5/</u> , Grubs		14	86	
Combination <u>3/</u>									
Pour-On		27,800		10	Lice, Flies <u>5/</u> , Grubs		13	75	12
<b>Dichlorvos</b>									
Cow - Calf									
Pour-On		<u>2/</u>							
Rubbing Device		<u>2/</u>	13,500	10	Lice, Pasture Flies, Grubs		100		
Spray	19,500	22,600	110	50	Lice, Flies <u>5/</u> , Grubs	15	77	8	
Stocker - Feeder									
Rubbing Device		<u>2/</u>	<u>2/</u>						
Spray	12,400	<u>2/</u>	40 <sup>4/</sup>						
Feedlot									
Spray		<u>2/</u>							
Dairy									
Spray		<u>2/</u>							
Combination <u>3/</u>									
Rubbing Device		<u>2/</u>	<u>2/</u>						
Spray		<u>2/</u>							

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). 4/ Correction made to 1994 published total. 5/ Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY TYPE OF OPERATION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <u>1/</u>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Doramectin <u>4/</u></b>									
Cow - Calf									
Injection		<u>2/</u>							
Pour-On		102,700		60	Lice, Pasture Flies, Grubs	31	67	2	
Stocker - Feeder									
Injection		50,100		10	Lice, Pasture Flies, Grubs	33	67		
Pour-On		56,300		70	Lice, Flies <u>5/</u> , Grubs	25	75		
Feedlot									
Injection		705,900		80	Lice, Grubs, Scabies	75	25		
Pour-On		219,500		30	Lice, Grubs, Confinement Flies	50	50		
Dairy									
Pour-On		<u>2/</u>							
Combination <u>3/</u>									
Injection		59,900		10	Lice, Pasture Flies, Grubs	80	20		
Pour-On		88,500		30	Lice, Pasture Flies, Grubs	50	50		
<b>Eprinomectin <u>4/</u></b>									
Cow - Calf									
Pour-On		29,100		10	Lice, Pasture Flies, Grubs	25	75		
Stocker - Feeder									
Pour-On		<u>2/</u>							
Dairy									
Pour-On		<u>2/</u>							
Combination <u>3/</u>									
Pour-On		42,600		10	Lice, Pasture Flies, Grubs	25	75		
<b>Famphur</b>									
Cow - Calf									
Pour-On		75,600	12,600	2,420	400	Lice, Pasture Flies, Grubs	8	92	
Stocker - Feeder									
Pour-On		<u>2/</u>							
Feedlot									
Pour-On		<u>2/</u>							
Dairy									
Pour-On		<u>2/</u>							
Combination <u>3/</u>									
Pour-On		87,800	12,800	3,260	550	Lice, Pasture Flies, Grubs	67	33	

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). 4/ Active ingredient used in a product for both internal & external pests. 5/ Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY TYPE OF OPERATION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999			
					Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999	1994	1999		Excell.	Satis.	Poor
<b>Fenvalerate</b>								
Combination <u>3/</u> Spray					<u>2/</u>			
<b>Fenthion</b>								
Cow - Calf								
Pour-On	495,200	86,800	3,630 <sup>4/</sup>	1,190	Lice, Pasture Flies, Grubs	18	78	4
Spray	<u>2/</u>							
Stocker - Feeder								
Pour-On	134,000	17,100	2,950	230	Lice, Pasture Flies, Grubs	40	60	
Feedlot								
Pour-On	1,020,600	22,900	9,320	230	Lice, Pasture Flies, Grubs	33	56	11
Dairy								
Pour-On	2,000		30 <sup>4/</sup>					
Rubbing Device	<u>2/</u>							
Combination <u>3/</u>								
Pour-On	269,600	114,700	6,280	870	Lice, Pasture Flies, Grubs	41	53	6
Spray	<u>2/</u>							
<b>Ivermectin <u>5/</u></b>								
Cow - Calf								
Injection	98,300	26,100	40 <sup>4/</sup>	10	Lice, Pasture Flies, Grubs	37	63	
Pour-On	345,900	369,500	260 <sup>4/</sup>	200	Lice, Pasture Flies, Grubs	33	66	1
Stocker - Feeder								
Injection	37,800	89,200	20 <sup>4/</sup>	10	Lice, Pasture Flies, Grubs	50	50	
Pour-On	229,800	206,800	180 <sup>4/</sup>	60	Lice, Pasture Flies, Grubs	39	61	
Feedlot								
Bolus		<u>2/</u>						
Injection	645,200	1,575,300	170 <sup>4/</sup>	240	Lice, Pasture Flies, Grubs	50	50	
Pour-On	313,200	697,100	180 <sup>4/</sup>	200	Lice, Pasture Flies, Grubs	60	40	
Dairy								
Injection	<u>2/</u>							
Pour-On	6,400	28,300	10 <sup>4/</sup>	20	Lice, Pasture Flies, Grubs	25	75	
Combination <u>3/</u>								
Injection	385,000	183,000	170 <sup>4/</sup>	20	Lice, Pasture Flies, Grubs	65	35	
Pour-On	213,300	315,100	180 <sup>4/</sup>	130	Lice, Pasture Flies, Grubs	42	56	2

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). 4/ Correction made to 1994 published total. 5/ Active ingredient used in a product for both internal & external pests.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY TYPE OF OPERATION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <u>1/</u>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Lambda Cyhalothrin</b>									
Cow - Calf									
Pour-On		<u>2/</u>							
Feedlot									
Pour-On		<u>2/</u>							
Combination <u>3/</u>									
Pour-On		25,100		20	Lice, Flies <u>5/</u> , Ticks		75	25	
<b>Lindane</b>									
Cow - Calf									
Dust		<u>2/</u>							
<b>Malathion</b>									
Cow - Calf									
Dust	43,100	6,800	910	60	Lice, Pasture Flies		17	67	16
Pour-On	14,800	<u>2/</u>	940 <sup>4/</sup>						
Rubbing Device	12,400	<u>2/</u>	2,090						
Spray	17,900	<u>2/</u>	840						
Stocker - Feeder									
Dust	4,400		30 <sup>4/</sup>						
Rubbing Device	3,900		200 <sup>4/</sup>						
Spray	4,000		130 <sup>4/</sup>						
Feedlot									
Spray	<u>2/</u>								
Dairy									
Dust	<u>2/</u>								
Combination <u>3/</u>									
Dust	<u>2/</u>	<u>2/</u>							
Rubbing Device	<u>2/</u>								
Spray	<u>2/</u>	<u>2/</u>							
<b>Methoprene</b>									
Cow - Calf									
Feed/Mineral	47,000	34,800	70	60	Lice, Flies <u>5/</u> , Ticks		43	52	5
Other	<u>2/</u>								
Stocker - Feeder									
Feed/Mineral	24,200		20 <sup>4/</sup>						
Feedlot									
Feed/Mineral	<u>2/</u>	<u>2/</u>							
Combination <u>3/</u>									
Feed/Mineral	<u>2/</u>	27,600		70	Pasture Flies		33	67	

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). 4/ Correction made to 1994 published total. 5/ Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY TYPE OF OPERATION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999			
					Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999	1994	1999		Excell.	Satis.	Poor
<b>Methoxychlor</b>								
Cow - Calf								
Dust	21,900	6,000	1,450	470	Lice, Flies <u>4/</u> , Ticks	33	67	
Rubbing Device	<u>2/</u>	<u>2/</u>						
Spray	<u>2/</u>							
Stocker - Feeder								
Rubbing Device		<u>2/</u>						
Dairy								
Dust	6,500		530					
Pour-On	<u>2/</u>							
Combination <u>3/</u>								
Dust	<u>2/</u>	<u>2/</u>						
<b>Moxidectin <u>5/</u></b>								
Cow - Calf								
Pour-On		87,500		50	Lice, Pasture Flies, Grubs	38	60	2
Stocker - Feeder								
Pour-On		61,700		30	Lice, Pasture Flies, Grubs	12	88	
Feedlot								
Pour-On		102,500		30	Lice, Pasture Flies, Grubs	50	50	
Dairy								
Pour-On		<u>2/</u>						
Combination <u>3/</u>								
Pour-On		130,000		60	Lice, Pasture Flies, Grubs	56	44	

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). 4/ Confinement & pasture flies were reported. 5/ Active ingredient used in a product for both internal & external pests.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY TYPE OF OPERATION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999					
					Target Pests	Percent Effectiveness <u>1/</u>				
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.	
<b>Permethrin</b>										
Cow - Calf										
Dip		<u>2/</u>								
Dust	<u>2/</u>	4,500		10	Flies <u>5/</u>		100			
Pour-On	125,000	108,200	320 <sup>4/</sup>	320	Lice, Pasture Flies, Grubs	22	76	2		
Rubbing Device	39,200	34,000	1,080 <sup>4/</sup>	140	Lice, Flies <u>5/</u> , Grubs	21	68	11		
Spray	39,600	22,300	140 <sup>4/</sup>	170	Lice, Flies <u>5/</u> , Grubs	11	79	10		
Stocker - Feeder										
Dust		<u>2/</u>								
Pour-On	107,500	13,300	360	20	Lice, Pasture Flies, Grubs	20	80			
Rubbing Device		5,900		10	Pasture Flies, Ticks	67	33			
Spray	<u>2/</u>	31,200		200	Pasture Flies	33	67			
Feedlot										
Pour-On	253,100	335,100	520 <sup>4/</sup>	530	Lice, Flies <u>5/</u>	57	43			
Spray		14,600		20	Lice, Flies <u>5/</u>	25	75			
Dairy										
Pour-On	16,800	11,200	60	130	Lice, Flies <u>5/</u> , Grubs	23	77			
Rubbing device	<u>2/</u>									
Spray	11,000	1,800	110	40	Flies <u>5/</u> , Horse Flies	67	33			
Other		<u>2/</u>								
Combination <u>3/</u>										
Dust	<u>2/</u>	<u>2/</u>								
Pour-On	192,800	88,300	620 <sup>4/</sup>	120	Lice, Pasture Flies, Grubs	12	88			
Rubbing Device		3,400		10	Lice, Pasture Flies, Ticks	67	33			
Spray	49,300	11,700	670	40	Lice, Flies <u>5/</u> , Grubs	25	50	25		
<b>Phosmet</b>										
Cow - Calf										
Rubbing Device		6,100		40	Lice, Pasture Flies, Grubs		100			
Spray	26,600		260 <sup>4/</sup>							
Stocker - Feeder										
Pour-On	<u>2/</u>									
Spray	<u>2/</u>									
Dairy										
Pour-On	<u>2/</u>									
Combination <u>3/</u>										
Rubbing Device	<u>2/</u>									
Spray	<u>2/</u>	<u>2/</u>								

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). 4/ Correction made to 1994 published total. 5/ Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY TYPE OF OPERATION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999			
					Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999	1994	1999		Excell.	Satis.	Poor
<b>Piperonyl Butoxide (Synergist)</b>								
Cow - Calf								
Dust	5,300		20 <sup>4/</sup>					
Pour-On	66,200	31,800	210 <sup>4/</sup>	40	Lice, Pasture Flies, Ticks	33	67	
Rubbing Device	<u>2/</u>	<u>2/</u>						
Spray	<u>2/</u>	<u>2/</u>						
Stocker - Feeder								
Pour-On	33,800	<u>2/</u>	50 <sup>4/</sup>					
Rubbing Device		<u>2/</u>						
Dairy								
Dust	4,900		10 <sup>4/</sup>					
Pour-On	6,100	<u>2/</u>	20 <sup>4/</sup>					
Spray		<u>2/</u>						
Combination <u>3/</u>								
Pour-On	32,100	7,400	210 <sup>4/</sup>	30	Lice, Pasture Flies, Grubs	25	75	
<b>Pyrethins</b>								
Cow - Calf								
Dust	5,300		*					
Spray	<u>2/</u>	<u>2/</u>						
Dairy								
Dust	4,900		*					
Spray		<u>2/</u>						
<b>Sulfur</b>								
Cow - Calf								
Dust	<u>2/</u>							
Stocker - Feeder								
Dust	<u>2/</u>							

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). 4/ Correction made to 1994 published total. \* = Less than 10 pounds.

**PESTICIDE USAGE ON CATTLE (Other Than Ear Tags)  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY TYPE OF OPERATION**

Application Method	Cattle Treatments		Total Quantity Used (lbs.)		1999			
					Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999	1994	1999		Excell.	Satis.	Poor
<b>Tetrachlorvinphos</b>								
Cow - Calf								
Dust	38,200	4,500	690	40	Lice, Pasture Flies	33	67	
Feed/Mineral	<u>2/</u>	12,300		3,300	Flies <u>5/</u>	11	89	
Pour-On	<u>2/</u>	<u>2/</u>						
Rubbing Device	3,100	<u>2/</u>	30 <sup>4/</sup>					
Spray	24,100	18,100	450	190	Lice, Flies <u>5/</u> , Grubs	22	67	11
Stocker - Feeder								
Dust	<u>2/</u>	<u>2/</u>						
Feed/Mineral		<u>2/</u>						
Rubbing Device	<u>2/</u>	<u>2/</u>						
Spray	12,400		160 <sup>4/</sup>					
Feedlot								
Dust								
Spray		<u>2/</u>						
Dairy								
Dust	<u>2/</u>							
Feed/Mineral		<u>2/</u>						
Combination <u>3/</u>								
Dust	<u>2/</u>							
Feed/Mineral	<u>2/</u>	<u>2/</u>						
Rubbing Device	<u>2/</u>							
Spray	<u>2/</u>	<u>2/</u>						
<b>Trichlorfon</b>								
Cow - Calf								
Pour-On	72,300	7,800	1,760	160	Lice, Pasture Flies, Grubs	17	83	
Rubbing Device		<u>2/</u>						
Stocker - Feeder								
Pour-On	11,100	<u>2/</u>	140 <sup>4/</sup>					
Feedlot								
Pour-On	<u>2/</u>							
Spray	<u>2/</u>							
Dairy								
Pour-On	<u>2/</u>							
Combinations <u>3/</u>								
Pour-On	127,900	<u>2/</u>	2,070					

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). 4/ Correction made to 1994 published total. 5/ Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE FACILITIES  
BY ACTIVE INGREDIENT, BY METHOD OF APPLICATION 1/**

Application Method	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness 2/		
	1994	1999		Excell.	Satis.	Poor
<b>Chlorpyrifos</b>						
Area Spray	190		Flies 4/	67	33	
<b>Cyfluthrin</b>						
Area Spray	30		Flies 4/	75	25	
Residual Spray	160		Flies 4/	27	73	
<b>Diazinon</b>						
Area Spray	3/	3/				
<b>Dichlorvos</b>						
Area Spray	1,510	1,160	Flies 4/	11	78	11
Residual Spray	390	810	Flies 4/	30	70	
Bait	3/					
<b>Dimethoate</b>						
Area Spray	3/					
<b>Dimethylcyclopropanecarb Oxylate (Synergist)</b>						
Area Spray	3/					
<b>Dipropyl Isocinchomerate (Synergist)</b>						
Residual Spray	3/					
<b>Lambda Cyhalothrin</b>						
Area Spray		3/				
Residual Spray		3/				
<b>Malathion</b>						
Area Spray	440	3/				
Residual Spray	1,420	3/				
<b>Methomyl</b>						
Bait	100	40	Flies 4/	10	70	20
<b>Methoxychlor</b>						
Area Spray	3/					
Residual Spray	3/	3/				
<b>N-Octyl Bicycloheptene Dicarboximide (Synergist)</b>						
Area Spray	10	3/				

1/ Not enough reports were received to break out by region or type of operation. 2/ May not add to 100 percent due to rounding. 3/ Insufficient data to report. 4/ Confinement and pasture flies were reported.

**PESTICIDE USAGE ON CATTLE FACILITIES  
BY ACTIVE INGREDIENT, BY METHOD OF APPLICATION 1/**

Application Method	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness 2/		
	1994	1999			Excell.	Satis.
<b>Naled</b>						
Area Spray	3/	3/				
Residual Spray	3/	3/				
<b>Permethrin</b>						
Area Spray	50	330	Lice, Flies 4/, Ticks	37	63	
Residual Spray	100	140	Flies 4/, Horse Flies		100	
<b>Piperonyl Butoxide (Synergist)</b>						
Area Spray	120	40	Flies 4/, Ticks	38	54	8
Residual Spray	*	3/				
Bait	3/					
<b>Pyrethrin</b>						
Area Spray	30	10	Flies 4/, Ticks	38	54	8
Residual Spray	*	3/				
Bait	3/					
<b>Tetrachlorvinphos</b>						
Area Spray	3/	390	Flies 4/	14	57	29
Residual Spray	3/	890	Flies 4/, Horse Flies	67	33	
<b>Trichlorfon</b>						
Residual Spray	3/					

1/ Not enough reports were received to break out by region or type of operation. 2/ May not add to 100 percent due to rounding. 3/ Insufficient data to report. 4/ Confinement and pasture flies were reported. \* = less than 10 pounds.

**CHEMICALLY TREATED EAR TAG USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY REGION**

Region	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <u>1/</u>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Chlorpyrifos</b>									
Region 1	<u>2/</u>	<u>2/</u>							
Region 2	<u>2/</u>	6,900		20	Flies <u>4/</u>		80	20	
Region 3	<u>2/</u>	<u>2/</u>							
State <u>3/</u>	16,300	21,500	20	90	Flies <u>4/</u>		78	22	
<b>Cyfluthrin</b>									
Region 1	25,400	16,300	80	80	Lice, Flies <u>4/</u>		100		
Region 2	47,500	27,400	170	110	Lice, Flies <u>4/</u>		7	64	29
Region 3	61,200	13,100	200	50	Pasture Flies, Ear Ticks		8	92	
State <u>3/</u>	134,100	56,800	440	240	Lice, Flies <u>4/</u> , Ear Ticks		6	81	13
<b>Cypermethrin</b>									
Region 2	<u>2/</u>								
Region 3	<u>2/</u>								
State <u>3/</u>	10,400			20					
<b>Diazinon</b>									
Region 1	35,400	27,000	350	320	Lice, Flies <u>4/</u>		10	90	
Region 2	160,700	58,800	2,070	670	Lice, Flies <u>4/</u> , Ear Ticks		17	73	10
Region 3	141,100	80,300	1,790	1,110	Lice, Flies <u>4/</u> , Ear Ticks		3	82	15
State <u>3/</u>	337,200	166,100	4,210	2,100	Lice, Flies <u>4/</u> , Ear Ticks		10	79	11
<b>Ethion</b>									
Region 2		11,000		130	Pasture Flies, Ear Ticks		17	66	17
Region 3		18,600		220	Flies <u>4/</u>			100	
State <u>3/</u>		29,600		350	Flies <u>4/</u> , Ear Ticks		8	84	8
<b>Fenthion</b>									
Region 1	23,800	14,600	140	90	Flies <u>4/</u>		33	34	33
Region 2	125,700	50,200	870	360	Pasture Flies, Lice		16	74	10
Region 3	29,900	27,400	210	280	Lice, Flies <u>4/</u> , Ear Ticks		36	64	
State <u>3/</u>	179,500	92,200	1,220	730	Lice, Flies <u>4/</u> , Ear Ticks		24	67	9
<b>Fenvalerate</b>									
Region 1	9,500	<u>2/</u>	20						
Region 2	36,000	2,900	70	10	Pasture Flies			100	
Region 3	18,400	26,800	50	50	Lice, Flies <u>4/</u> , Ear Ticks		46	54	
State <u>3/</u>	63,800	30,100	140	60	Lice, Flies <u>4/</u> , Ear Ticks		39	61	

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add back to regions because of rounding. 4/ Confinement & pasture flies were reported.

**CHEMICALLY TREATED EAR TAG USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY REGION**

Region	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <sup>1/</sup>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Lambda Cyhalothrin</b>									
Region 1	<u>2/</u>	26,600		50	Flies <u>4/</u>	33	67		
Region 2	105,800	22,200	220	60	Lice, Flies <u>4/</u> , Ear Ticks	18	64	18	
Region 3	13,500	8,700	50	30	Pasture Flies, Ear Ticks	18	73	9	
State <u>3/</u>	123,200	57,500	280	140	Lice, Flies <u>4/</u> , Ear Ticks	20	68	12	
<b>Permethrin</b>									
Region 1	20,800	7,600	70	20	Pasture Flies	100			
Region 2	21,100	21,100	70	70	Flies <u>4/</u>	100			
Region 3	32,300	6,300	90	20	Pasture Flies, Ear Ticks	100			
State <u>3/</u>	74,200	35,000	230	110	Flies <u>4/</u> , Ear Ticks	100			
<b>Pirimiphos Methyl</b>									
Region 1	18,400	17,100	90	80	Flies <u>4/</u>	100			
Region 2	86,700	36,800	480	170	Lice, Flies <u>4/</u> , Ear Ticks	14	63	23	
Region 3	41,700	33,100	230	140	Lice, Pasture Flies, Ear Ticks	6	82	12	
State <u>3/</u>	146,800	87,000	800	390	Lice, Flies <u>4/</u> , Ear Ticks	9	76	15	
<b>Piperonyl Butoxide (Synergist)</b>									
Region 1	34,600	41,400	120	140	Flies <u>4/</u>	33	34	33	
Region 2	246,800	63,900	1,030	310	Lice, Pasture Flies	19	73	8	
Region 3	60,500	36,000	310	250	Lice, Flies <u>4/</u> , Ear Ticks	32	68		
State <u>3/</u>	341,900	141,300	1,470	700	Lice, Flies <u>4/</u> , Ear Ticks	26	67	7	
<b>Tetrachlorvinphos</b>									
Region 1	<u>2/</u>								
Region 2	<u>2/</u>								
State <u>3/</u>		6,100		30	Lice, Pasture Flies	33	67		
<b>Zetacypermethrin</b>									
Region 1	<u>2/</u>								
Region 2	<u>2/</u>								
Region 3	<u>2/</u>								
State <u>3/</u>		4,600		10	Pasture Flies	25	50	25	

<sup>1/</sup> May not add to 100 percent due to rounding. <sup>2/</sup> Insufficient data to report. <sup>3/</sup> State totals may not add back to regions because of rounding. <sup>4/</sup> Confinement & pasture flies were reported.

**CHEMICALLY TREATED EAR TAG USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY TYPE OF OPERATION**

Type of Operation	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <sup>1/</sup>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Chlorpyrifos</b>									
Cow - Calf	11,300	10,300	20	50	Flies <u>4/</u>		75	25	
Stocker - Feeder	<u>2/</u>	<u>2/</u>							
Combination <u>3/</u>		5,200		20	Pasture Flies		67	33	
<b>Cyfluthrin</b>									
Cow - Calf	51,300	27,600	160	90	Lice, Flies <u>4/</u> , Ear Ticks	4	79	17	
Stocker - Feeder	26,600	11,900	90	60	Lice, Pasture Flies	25	75		
Feedlot	<u>2/</u>	<u>2/</u>							
Dairy	<u>2/</u>	<u>2/</u>							
Combination <u>3/</u>	46,100	14,200	160	80	Lice, Pasture Flies		100		
<b>Cypermethrin</b>									
Cow - Calf	10,400		20						
<b>Diazinon</b>									
Cow - Calf	83,300	66,700	890	930	Lice, Flies <u>4/</u> , Ear Ticks	10	80	10	
Stocker - Feeder	151,300	15,000	1,920	150	Pasture Flies	11	78	11	
Feedlot	<u>2/</u>	7,400		90	Flies <u>4/</u>		100		
Dairy	6,500	3,200	70	50	Flies <u>4/</u>		67	33	
Combination <u>3/</u>	51,800	73,800	770	880	Lice, Pasture Flies, Ear Ticks		87	13	
<b>Ethion</b>									
Cow - Calf		9,400		120	Pasture Flies, Ear Ticks		100		
Stocker - Feeder		<u>2/</u>							
Feedlot		<u>2/</u>							
Combination <u>3/</u>		<u>2/</u>							
<b>Fenthion</b>									
Cow - Calf	58,900	28,300	440	230	Lice, Flies <u>4/</u>	20	72	8	
Stocker - Feeder	<u>2/</u>	23,200		140	Flies <u>4/</u> , Ear Ticks	33	67		
Feedlot	<u>2/</u>								
Dairy	<u>2/</u>	<u>2/</u>							
Combination <u>3/</u>	97,100	39,200	620	340	Lice, Pasture Flies		100		
<b>Fenvalerate</b>									
Cow - Calf	31,600	21,400	70	40	Flies <u>4/</u> , Ear Ticks	40	60		
Stocker - Feeder	<u>2/</u>	<u>2/</u>							
Feedlot	<u>2/</u>	<u>2/</u>							
Dairy	<u>2/</u>	<u>2/</u>							
Combination <u>3/</u>	24,500	<u>2/</u>	50			50	50		

<sup>1/</sup> May not add due to rounding. <sup>2/</sup> Insufficient data to report. <sup>3/</sup> Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement & pasture flies were reported.

**CHEMICALLY TREATED EAR TAG USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY TYPE OF OPERATION**

Type of Operation	Cattle Treatments		Total Quantity Used (lbs.)		1999				
					Target Pests	Percent Effectiveness <sup>1/</sup>			
	1994	1999	1994	1999		Excell.	Satis.	Poor	No Eff.
<b>Lambda Cyhalothrin</b>									
Cow - Calf	22,100	19,300	60	50	Lice, Pasture Flies, Ear Ticks	26	58	16	
Stocker - Feeder	89,800	<u>2/</u>	190						
Feedlot	<u>2/</u>	<u>2/</u>							
Dairy		<u>2/</u>							
Combination <u>3/</u>	11,000	7,700	30	20	Pasture Flies		80	20	
<b>Permethrin</b>									
Cow - Calf	41,000	15,300	130	50	Pasture Flies, Ear Ticks		100		
Stocker - Feeder	26,200	<u>2/</u>	80						
Feedlot	<u>2/</u>	<u>2/</u>							
Dairy		<u>2/</u>							
Combination <u>3/</u>	6,200	16,600	20	40	Pasture Flies		100		
<b>Pirimiphos Methyl</b>									
Cow - Calf	85,000	29,400	470	130	Lice, Pasture Flies, Ear Ticks	10	73	17	
Stocker - Feeder	29,300	7,800	150	50	Lice, Flies <u>4/</u>		100		
Feedlot	<u>2/</u>	<u>2/</u>							
Dairy	<u>2/</u>	<u>2/</u>							
Combination <u>3/</u>	24,500	47,700	150	200	Pasture Flies, Ear Ticks	13	67	20	
<b>Piperonyl Butoxide (Synergist)</b>									
Cow - Calf	92,200	46,600	500	240	Lice, Flies <u>4/</u> , Ear Ticks	27	68	5	
Stocker - Feeder	125,400	25,200	380	110	Flies <u>4/</u> , Ear Ticks	25	63	12	
Feedlot	<u>2/</u>	<u>2/</u>							
Dairy	<u>2/</u>	2,800		20	Pasture Flies	33	34	33	
Combination <u>3/</u>	108,100	44,000	510	280	Lice, Pasture Flies		100		
<b>Tetrachlorvinphos</b>									
Cow - Calf		<u>2/</u>							
Combination <u>3/</u>		<u>2/</u>							
<b>Zetacypermethrin</b>									
Cow - Calf		2,600		10	Pasture Flies	33	67		
Stocker - Feeder		<u>2/</u>							

<sup>1/</sup> May not add due to rounding. <sup>2/</sup> Insufficient data to report. <sup>3/</sup> Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement & pasture flies were reported.

**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY REGION**

Region	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999		Excell.	Satis.	Poor
<b>Chlorpyrifos</b>						
Region 1	<u>2/</u>	<u>2/</u>				
Region 2	220	140	Flies <u>5/</u>	83	17	
Region 3	750	110	Pasture Flies	50	50	
State <u>3/</u>	1,220	270	Flies <u>5/</u>	75	25	
<b>Clorsulon <u>6/</u></b>						
Region 1	180 <sup>4/</sup>	740	Lice, Flies <u>5/</u> , Grubs	50	50	
Region 2	30 <sup>4/</sup>	230	Lice, Flies <u>5/</u> , Grubs	56	44	
Region 3	60 <sup>4/</sup>	20	Lice, Pasture Flies, Grubs	50	50	
State <u>3/</u>	270 <sup>4/</sup>	990	Lice, Flies <u>5/</u> , Grubs	53	47	
<b>Coumaphos</b>						
Region 1	260 <sup>4/</sup>	440	Lice, Flies <u>5/</u> , Grubs	6	82	12
Region 2	1,850	670	Lice, Flies <u>5/</u> , Grubs	20	72	8
Region 3	2,640 <sup>4/</sup>	3,610	Lice, Flies <u>5/</u> , Grubs	15	82	3
State <u>3/</u>	4,740 <sup>4/</sup>	4,720	Lice, Flies <u>5/</u> , Grubs	15	80	5
<b>Crotoxyphos</b>						
Region 1		40	Pasture Flies	100		
Region 2		10	Lice, Pasture Flies	100		
Region 3		10	Lice, Pasture Flies, Grubs	100		
State <u>3/</u>		60	Lice, Pasture Flies, Grubs	100		
<b>Cyfluthrin</b>						
Region 1	80	210	Lice, Flies <u>5/</u> , Grubs	23	77	
Region 2	170	290	Lice, Flies <u>5/</u> , Grubs	25	64	11
Region 3	200	140	Lice, Flies <u>5/</u> , Grubs	16	84	
State <u>3/</u>	440	640	Lice, Flies <u>5/</u> , Grubs	22	73	5
<b>Cypermethrin</b>						
Region 2	<u>2/</u>					
Region 3	<u>2/</u>					
State <u>3/</u>	20					

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add due to rounding. 4/ Correction made to 1994 published total. 5/ Confinement & pasture flies were reported. 6/ Active ingredient used in a product for both internal & external pests.

**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY REGION**

Region	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999		Excell.	Satis.	Poor
<b>Diazinon</b>						
Region 1	350	340	Lice, Flies <u>4/</u>	25	75	
Region 2	2,120	660	Lice, Flies <u>4/</u>	17	73	10
Region 3	1,790	1,110	Lice, Flies <u>4/</u>	3	82	15
State <u>3/</u>	4,260	2,110	Lice, Flies <u>4/</u>	12	77	11
<b>Dichlorvos</b>						
Region 1	390	880	Lice, Flies <u>4/</u>	9	91	
Region 2	1,510	170	Lice, Flies <u>4/</u>	22	69	9
Region 3	160	1,100	Lice, Flies <u>4/</u> , Grubs	13	81	6
State <u>3/</u>	2,060	2,150	Lice, Flies <u>4/</u> , Grubs	15	80	5
<b>Dimethoate</b>						
Region 2	<u>2/</u>					
State <u>3/</u>	<u>2/</u>					
<b>Dimethylcyclopropanecarboxylate (Synergist)</b>						
Region 3	<u>2/</u>					
State <u>3/</u>	<u>2/</u>					
<b>Dipropyl Isochinomerate (Synergist)</b>						
Region 2	<u>2/</u>					
Region 3	<u>2/</u>					
State <u>3/</u>	<u>2/</u>					
<b>Doramectin <u>5/</u></b>						
Region 1		120	Lice, Flies <u>4/</u> , Grubs	56	44	
Region 2		110	Lice, Flies <u>4/</u> , Grubs	28	70	2
Region 3		60	Lice, Pasture Flies, Grubs	45	55	
State <u>3/</u>		290	Lice, Flies <u>4/</u> , Grubs	40	59	1
<b>Eprinomectin <u>5/</u></b>						
Region 1		10	Lice, Pasture Flies	25	75	
Region 2		10	Lice, Flies <u>4/</u> , Grubs	22	78	
Region 3		10	Lice, Pasture Flies, Grubs	27	73	
State <u>3/</u>		30	Lice, Flies <u>4/</u> , Grubs	25	75	
<b>Ethion</b>						
Region 2		130	Pasture Flies	17	66	17
Region 3		220	Flies <u>4/</u>		100	
State <u>3/</u>		350	Flies <u>4/</u>	8	84	8

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add due to rounding. 4/ Confinement & pasture flies were reported. 5/ Active ingredient used in a product for both internal & external pests.

**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY REGION**

Region	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999		Excell.	Satis.	Poor
<b>Famphur</b>						
Region 1	1,340	40	Lice, Grubs		100	
Region 2	3,820	770	Lice, Pasture Flies, Grubs	22	78	
Region 3	1,010	140	Lice, Pasture Flies, Grubs	20	80	
State <u>3/</u>	6,170	950	Lice, Pasture Flies, Grubs	19	81	
<b>Fenthion</b>						
Region 1	5,490	870	Lice, Flies <u>5/</u> , Grubs	36	59	5
Region 2	15,060 <sup>4/</sup>	1,000	Lice, Pasture Flies, Grubs	21	68	11
Region 3	2,890	1,380	Lice, Flies <u>5/</u> , Grubs	26	72	2
State <u>3/</u>	23,440 <sup>4/</sup>	3,250	Lice, Flies <u>5/</u> , Grubs	26	68	6
<b>Fenvalerate</b>						
Region 1	20	<u>2/</u>				
Region 2	70	30	Pasture Flies		80	20
Region 3	50	50	Lice, Flies <u>5/</u>	46	54	
State <u>3/</u>	140	80	Lice, Flies <u>5/</u>	37	58	5
<b>Ivermectin <u>6/</u></b>						
Region 1	480 <sup>4/</sup>	510	Lice, Flies <u>5/</u> , Grubs	47	52	1
Region 2	470 <sup>4/</sup>	210	Lice, Flies <u>5/</u> , Grubs	37	63	
Region 3	340 <sup>4/</sup>	170	Lice, Flies <u>5/</u> , Grubs	32	66	2
State <u>3/</u>	1,290 <sup>4/</sup>	890	Lice, Flies <u>5/</u> , Grubs	39	60	1
<b>Lambda Cyhalothrin</b>						
Region 1	<u>2/</u>	130	Lice, Flies <u>5/</u>	29	57	14
Region 2	220	230	Lice, Flies <u>5/</u>	12	71	17
Region 3	50	480	Lice, Flies <u>5/</u>	18	76	6
State <u>3/</u>	280	840	Lice, Flies <u>5/</u>	17	71	12
<b>Lindane</b>						
Region 2	<u>2/</u>					
State <u>3/</u>	<u>2/</u>					

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add due to rounding. 4/ Correction made to 1994 published total. 5/ Confinement & pasture flies were reported. 6/ Active ingredient used in a product for both internal & external pests.

**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY REGION**

Region	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999		Excell.	Satis.	Poor
<b>Malathion</b>						
Region 1	2,360	80	Flies <u>4/</u>	25	75	
Region 2	3,420	190	Lice, Pasture Flies		67	33
Region 3	15,750	470	Lice, Flies <u>4/</u>	25	63	12
State <u>3/</u>	21,530	740	Lice, Flies <u>4/</u>	20	66	7
<b>Methomyl</b>						
Region 1	60	30	Flies <u>4/</u>	7	72	21
Region 2	30	10	Flies <u>4/</u>	17	66	17
Region 3	10					
State <u>3/</u>	100	40	Flies <u>4/</u>	10	70	20
<b>Methoprene</b>						
Region 1	<u>2/</u>	40	Flies <u>4/</u> , Grubs	50	40	10
Region 2	50	60	Lice, Pasture Flies, Grubs	27	73	
Region 3	30	30	Lice, Flies <u>4/</u>	44	56	
State <u>3/</u>	90	130	Lice, Flies <u>4/</u> , Grubs	38	59	3
<b>Methoxychlor</b>						
Region 1	<u>2/</u>	<u>2/</u>				
Region 2	400	840	Lice, Pasture Flies	67	33	
Region 3	1,500	480	Lice, Flies <u>4/</u>	33	67	
State <u>3/</u>	2,450	1,340	Lice, Flies <u>4/</u>	57	43	
<b>Moxidectin <u>5/</u></b>						
Region 1		50	Lice, Flies <u>4/</u> , Grubs	43	50	7
Region 2		70	Lice, Flies <u>4/</u> , Grubs	46	54	
Region 3		50	Lice, Flies <u>4/</u> , Grubs	34	66	
State <u>3/</u>		170	Lice, Flies <u>4/</u> , Grubs	41	58	1
<b>N-Octyl Bicycloheptene Dicarboximide (Synergist)</b>						
Region 1	<u>2/</u>					
Region 2	<u>2/</u>					
Region 3	<u>2/</u>	<u>2/</u>				
State <u>3/</u>	10	<u>2/</u>				
<b>Naled</b>						
Region 1	<u>2/</u>	<u>2/</u>				
Region 2	<u>2/</u>	<u>2/</u>				
State <u>3/</u>	<u>2/</u>	<u>2/</u>				

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add due to rounding. 4/ Confinement & pasture flies were reported. 5/ Active ingredient used in a product for both internal & external pests.

**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY REGION**

Region	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999		Excell.	Satis.	Poor
<b>Permethrin</b>						
Region 1	1,010	880	Lice, Flies <u>5/</u> , Grubs	30	68	2
Region 2	2,040 <sup>4/</sup>	790	Lice, Flies <u>5/</u> , Grubs	22	77	1
Region 3	1,200 <sup>4/</sup>	670	Lice, Flies <u>5/</u> , Grubs	15	80	5
State <u>3/</u>	4,240 <sup>4/</sup>	2,330	Lice, Flies <u>5/</u> , Grubs	21	76	3
<b>Phosmet</b>						
Region 1	<u>2/</u>	<u>2/</u>				
Region 2	<u>2/</u>	<u>2/</u>				
Region 3	<u>2/</u>	80	Lice, Pasture Flies, Grubs		100	
State <u>3/</u>	<u>2/</u>	100	Lice, Pasture Flies, Grubs		100	
<b>Piperonyl Butoxide (Synergist)</b>						
Region 1	140 <sup>4/</sup>	140	Lice, Flies <u>5/</u>	37	38	25
Region 2	1,320 <sup>4/</sup>	490	Lice, Flies <u>5/</u> , Grubs	31	61	8
Region 3	690 <sup>4/</sup>	390	Lice, Flies <u>5/</u> , Grubs	30	70	
State <u>3/</u>	2,150 <sup>4/</sup>	1,020	Lice, Flies <u>5/</u> , Grubs	31	64	5
<b>Pirimiphos Methyl</b>						
Region 1	90	80	Flies <u>5/</u>		100	
Region 2	480	170	Lice, Flies <u>5/</u>	14	63	23
Region 3	230	140	Lice, Pasture Flies	6	82	12
State <u>3/</u>	800	390	Lice, Flies <u>5/</u>	9	76	15
<b>Pyrethrin</b>						
Region 1	*					
Region 2	20	10	Lice, Flies <u>5/</u>	43	43	14
Region 3	10	30	Flies <u>5/</u> , Grubs	30	70	
State <u>3/</u>	30	40	Lice, Flies <u>5/</u> , Grubs	35	59	6
<b>Sulfur</b>						
Region 3	<u>2/</u>					
State <u>3/</u>	<u>2/</u>					
<b>Tetrachlorvinphos</b>						
Region 1	740	930	Lice, Flies <u>5/</u>	11	89	
Region 2	290	3,370	Lice, Flies <u>5/</u>	29	62	9
Region 3	1,090	1,990	Lice, Flies <u>5/</u> , Grubs	21	72	7
State <u>3/</u>	2,110	6,280	Lice, Flies <u>5/</u> , Grubs	23	70	7

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add due to rounding. 4/ Correction made to 1994 published total. 5/ Confinement & pasture flies were reported. \* = Less than 10 pounds.

**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY REGION**

Region	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999		Excell.	Satis.	Poor
<b>Trichlorfon</b>						
Region 1	3,380	80	Lice, Grubs, Confinement Flies	25	75	
Region 2	2,250	70	Lice, Grubs		100	
Region 3	1,110	80	Pasture Flies, Grubs	33	67	
State <u>3/</u>	6,740	230	Lice, Flies <u>4/</u> , Grubs	22	78	
<b>Zetacypermethrin</b>						
Region 1		<u>2/</u>				
Region 2		<u>2/</u>				
Region 3		<u>2/</u>				
State <u>3/</u>		10	Pasture Flies	25	50	25

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ State totals may not add due to rounding. 4/ Confinement & pasture flies were reported.

**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY TYPE OF OPERATION**

Type of Operation	Total Quantity Used (lbs.)		1999				
	1994	1999	Target Pests	Percent Effectiveness <u>1/</u>			
				Excell.	Satis.	Poor	No Eff.
<b>Chlorpyrifos</b>							
Cow - Calf	960	120	Flies <u>5/</u>		71	29	
Stocker - Feeder	<u>2/</u>	<u>2/</u>					
Combination <u>3/</u>		130	Flies <u>5/</u>		75	25	
<b>Clorsulon <u>6/</u></b>							
Cow - Calf	30 <sup>4/</sup>	20	Lice, Flies <u>5/</u> , Grubs		37	63	
Stocker - Feeder	20 <sup>4/</sup>						
Feedlot	110 <sup>4/</sup>	840	Lice, Flies <u>5/</u> , Grubs		50	50	
Combination <u>3/</u>	110 <sup>4/</sup>	130	Lice, Grubs		53	47	
<b>Coumaphos</b>							
Cow - Calf	2,770 <sup>4/</sup>	3,660	Lice, Flies <u>5/</u> , Grubs	16	79	5	
Dairy	40	<u>2/</u>					
Stocker - Feeder	670 <sup>4/</sup>	400	Lice, Flies <u>5/</u> , Grubs		100		
Feedlot	<u>2/</u>	<u>2/</u>					
Combination <u>3/</u>	1,260 <sup>4/</sup>	590	Lice, Flies <u>5/</u> , Grubs	10	81	9	
<b>Crotoxyphos</b>							
Cow - Calf		20	Lice, Pasture Flies, Grubs		100		
Stocker - Feeder		<u>2/</u>					
Combination <u>3/</u>		40	Pasture Flies		100		
<b>Cyfluthrin</b>							
Cow - Calf		110	Lice, Flies <u>5/</u> , Grubs	21	68	11	
Stocker - Feeder		70	Lice, Flies <u>5/</u> , Grubs	17	83		
Feedlot		180	Lice, Flies <u>5/</u> , Grubs	31	69		
Dairy		100	Lice, Flies <u>5/</u> , Grubs	17	83		
Combination <u>3/</u>		180	Lice, Flies <u>5/</u> , Grubs	25	69	6	
<b>Cypermethrin</b>							
Cow - Calf		20					
<b>Diazinon</b>							
Cow - Calf	950	930	Lice, Flies <u>5/</u>	13	78	9	
Stocker - Feeder	1,920	150	Pasture Flies	14	72	14	
Feedlot	<u>2/</u>	100	Flies <u>5/</u>	40	60		
Dairy	70	50	Flies <u>5/</u>		67	33	
Combination <u>3/</u>	770	880	Lice, Pasture Flies		87	13	

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**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY TYPE OF OPERATION**

Type of Operation	Total Quantity Used (lbs.)		1999				
	1994	1999	Target Pests	Percent Effectiveness <u>1/</u>			
				Excell.	Satis.	Poor	No Eff.
<b>Dichlorvos</b>							
Cow - Calf	280	120	Lice, Flies <u>4/</u> , Grubs	16	80	4	
Stocker - Feeder	40	<u>2/</u>					
Feedlot	1,410	1,960	Flies <u>4/</u>	13	78	9	
Dairy	<u>2/</u>	<u>2/</u>					
Combination <u>3/</u>	320	60	Flies <u>4/</u>	11	89		
<b>Dimethoate</b>							
Combination <u>3/</u>	<u>2/</u>		Pasture Flies, Ear Ticks				
<b>Dimethylcyclopropanecarboxylate (Synergist)</b>							
Cow - Calf	<u>2/</u>						
<b>Dipropyl Isocinchomerate (Synergist)</b>							
Cow - Calf	<u>2/</u>						
Dairy	<u>2/</u>						
<b>Doramectin <u>5/</u></b>							
Cow - Calf		70	Lice, Flies <u>4/</u> , Grubs	31	67	2	
Stocker - Feeder		80	Lice, Flies <u>4/</u> , Grubs	29	71		
Feedlot		110	Lice, Grubs, Confinement Flies	63	37		
Dairy		<u>2/</u>					
Combination <u>3/</u>		40	Lice, Pasture Flies, Grubs	56	44		
<b>Eprinomectin <u>5/</u></b>							
Cow - Calf		10	Lice, Pasture Flies, Grubs	25	75		
Stocker - Feeder		<u>2/</u>					
Dairy		<u>2/</u>					
Combination <u>3/</u>		10	Lice, Flies <u>4/</u> , Grubs	25	75		
<b>Ethion</b>							
Cow - Calf		120	Pasture Flies		100		
Stocker - Feeder		60	Pasture Flies	50		50	
Feedlot		<u>2/</u>					
Combination <u>3/</u>		<u>2/</u>					

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**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY TYPE OF OPERATION**

Type of Operation	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999		Excell.	Satis.	Poor
<b>Famphur</b>						
Cow - Calf	2,420	400	Lice, Pasture Flies, Grubs	8	92	
Stocker - Feeder	<u>2/</u>					
Feedlot	<u>2/</u>					
Dairy		<u>2/</u>				
Combination <u>3/</u>	3,260	550	Lice, Pasture Flies	67	33	
<b>Fenthion</b>						
Cow - Calf	4,040	1,430	Lice, Flies <u>4/</u> , Grubs	21	73	6
Stocker - Feeder	3,010	370	Lice, Flies <u>4/</u> , Grubs	36	64	
Feedlot	9,400	230	Lice, Flies <u>4/</u> , Grubs	33	56	11
Dairy	60	<u>2/</u>				
Combination <u>3/</u>	6,910	1,200	Lice, Pasture Flies, Grubs	29	67	4
<b>Fenvalerate</b>						
Cow - Calf	70	40	Flies <u>4/</u>	38	62	
Stocker - Feeder	<u>2/</u>	<u>2/</u>				
Feedlot	<u>2/</u>	<u>2/</u>				
Dairy	<u>2/</u>	<u>2/</u>				
Combination <u>3/</u>	50	40	Pasture Flies	33	34	33
<b>Ivermectin <u>5/</u></b>						
Cow - Calf	340	200	Lice, Flies <u>4/</u> , Grubs	33	66	1
Stocker - Feeder	200	70	Lice, Flies <u>4/</u> , Grubs	41	59	
Feedlot	350	440	Lice, Flies <u>4/</u> , Grubs	55	45	
Dairy	10	20	Lice, Flies <u>4/</u> , Grubs	25	75	
Combination <u>3/</u>	390	160	Lice, Flies <u>4/</u> , Grubs	48	51	1
<b>Lambda Cyhalothrin</b>						
Cow - Calf	60	50	Lice, Pasture Flies	26	65	9
Stocker - Feeder	190	<u>2/</u>				
Feedlot	<u>2/</u>	50	Lice, Flies <u>4/</u>	25	75	
Dairy		<u>2/</u>				
Combination <u>3/</u>	30	40	Lice, Pasture Flies		70	30
<b>Lindane</b>						
Cow - Calf	<u>2/</u>					

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**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY TYPE OF OPERATION**

Type of Operation	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999		Excell.	Satis.	Poor
<b>Malathion</b>						
Cow - Calf	6,350	440	Lice, Pasture Flies	22	67	11
Stocker - Feeder	410					
Feedlot	<u>2/</u>	<u>2/</u>				
Dairy	<u>2/</u>					
Combination <u>3/</u>	14,520	270	Lice, Flies <u>4/</u>	75	25	
<b>Methomyl</b>						
Cow - Calf	<u>2/</u>					
Stocker - Feeder	<u>2/</u>	<u>2/</u>				
Feedlot	50	30	Flies <u>4/</u>	7	64	29
Dairy	10					
Combination <u>3/</u>	40	10	Flies <u>4/</u>	20	80	
<b>Methoprene</b>						
Cow - Calf	80	60	Flies <u>4/</u> , Grubs	43	52	5
Stocker - Feeder	<u>2/</u>					
Feedlot	<u>2/</u>	<u>2/</u>				
Combination <u>3/</u>	<u>2/</u>	70	Lice, Pasture Flies	33	67	
<b>Methoxychlor</b>						
Cow - Calf	1,510	1,220	Lice, Flies <u>4/</u>	60	40	
Stocker - Feeder		<u>2/</u>				
Dairy	650					
Combination <u>3/</u>	<u>2/</u>	<u>2/</u>				
<b>Moxidectin <u>5/</u></b>						
Cow - Calf		50	Lice, Flies <u>4/</u> , Grubs	38	60	2
Stocker - Feeder		30	Lice, Pasture Flies, Grubs	12	88	
Feedlot		30	Lice, Pasture Flies, Grubs	50	50	
Dairy		<u>2/</u>				
Combination <u>3/</u>		60	Lice, Flies <u>4/</u> , Grubs	56	44	
<b>N-Octyl Bicycloheptene Dicarboximide</b>						
Cow - Calf	<u>2/</u>					
Dairy	<u>2/</u>					
Combination <u>3/</u>	<u>2/</u>	<u>2/</u>				
<b>Naled</b>						
Feedlot	<u>2/</u>	<u>2/</u>				
Combination <u>3/</u>	<u>2/</u>	<u>2/</u>				

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). 4/ Confinement & pasture flies were reported. 5/ Active ingredient used in a product for both internal & external pests.

**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY TYPE OF OPERATION**

Type of Operation	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness <u>1/</u>		
	1994	1999		Excell.	Satis.	Poor
<b>Permethrin</b>						
Cow - Calf	1,690	710	Lice, Flies <u>4/</u> , Grubs	19	77	4
Stocker - Feeder	440	250	Lice, Pasture Flies, Grubs	29	71	
Feedlot	<u>2/</u>	870	Lice, Flies <u>4/</u> , Grubs	27	73	
Dairy	280	250	Lice, Flies <u>4/</u> , Grubs	24	76	
Combination <u>3/</u>	1,410	250	Lice, Flies <u>4/</u> , Grubs	18	79	3
<b>Phosmet</b>						
Cow - Calf	<u>2/</u>	40	Lice, Pasture Flies, Grubs		100	
Stocker - Feeder	<u>2/</u>					
Combination <u>3/</u>		<u>2/</u>				
<b>Piperonyl Butoxide (Synergist)</b>						
Cow - Calf	800	460	Lice, Flies <u>4/</u> , Grubs	33	63	4
Stocker - Feeder	<u>2/</u>	140	Lice, Flies <u>4/</u> , Grubs	40	50	10
Feedlot	<u>2/</u>	<u>2/</u>				
Dairy	<u>2/</u>	60	Lice, Flies <u>4/</u> , Grubs	54	33	13
Combination <u>3/</u>	720	300	Lice, Flies <u>4/</u>			6 94
<b>Pirimiphos Methyl</b>						
Cow - Calf	470	130	Lice, Pasture Flies	8	77	15
Stocker - Feeder	150	50	Lice, Flies <u>4/</u>		100	
Feedlot	<u>2/</u>	<u>2/</u>				
Dairy	<u>2/</u>	<u>2/</u>				
Combination <u>3/</u>	150	200	Pasture Flies	13	67	20
<b>Pyrethrin</b>						
Cow - Calf	*	20	Lice, Pasture Flies		100	
Stocker - Feeder	<u>2/</u>					
Dairy	20	20	Flies <u>4/</u> , Grubs	60	30	10
Combination <u>3/</u>	*		Flies <u>4/</u>		100	

1/ May not add to 100 percent due to rounding. 2/ Insufficient data to report. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). 4/ Confinement & pasture flies were reported. \* = Less than 10 pounds.

**ALL PESTICIDE USAGE ON CATTLE AND FACILITIES  
BY ACTIVE INGREDIENT, BY TYPE OF OPERATION**

Type of Operation	Total Quantity Used (lbs.)		1999			
			Target Pests	Percent Effectiveness <sup>1/</sup>		
	1994	1999		Excell.	Satis.	Poor
<b>Sulfur</b>						
Cow - Calf	<u>2/</u>					
Stocker - Feeder	<u>2/</u>					
<b>Tetrachlorvinphos</b>						
Cow - Calf	1,780	3,790	Lice, Flies <u>4/</u> , Grubs	27	69	4
Stocker - Feeder	170	1,610	Flies <u>4/</u>	25	75	
Feedlot		480	Flies <u>4/</u>	12	63	25
Dairy	<u>2/</u>	<u>2/</u>				
Combination <u>3/</u>	<u>2/</u>	200	Flies <u>4/</u>	20	80	
<b>Trichlorfon</b>						
Cow - Calf	1,760	170	Lice, Flies <u>4/</u> , Grubs	14	86	
Stocker - Feeder	<u>2/</u>	<u>2/</u>				
Feedlot	<u>2/</u>					
Dairy	<u>2/</u>					
Combination <u>3/</u>	2,070	<u>2/</u>				
<b>Zetacypermethrin</b>						
Cow - Calf		10	Pasture Flies	33	67	
Stocker - Feeder		<u>2/</u>				

<sup>1/</sup> May not add to 100 percent due to rounding. <sup>2/</sup> Insufficient data to report. <sup>3/</sup> Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement & pasture flies were reported.

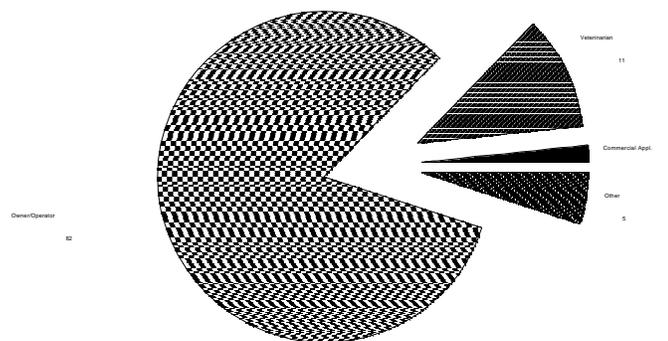
## APPLICATION OF CHEMICAL PEST CONTROL

Owner/Operator		Veterinarian		Commercial Applicator		Other <u>1/</u>	
1994	1999	1994	1999	1994	1999	1994	1999
<b>Percent by Region</b>							
			Region 1				
86	80	9	6	4	6	1	8
			Region 2				
85	83	11	13	*	1	4	3
			Region 3				
88	82	10	12	*	2	2	4
			State				
87	82	10	11	1	2	2	5
<b>Percent by Operation Type</b>							
			Cow - Calf				
88	86	11	12	-	*	1	2
			Stocker - Feeder				
85	85	8	12	1	-	6	3
			Feedlot				
68	49	5	5	17	17	10	29
			Dairy				
94	81	5	5	-	13	1	1
			Combination <u>2/</u>				
87	85	10	9	1	1	2	5

1/ Most frequently reported other was employees. 2/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). \* = Less than 0.5 percent.

Application of Chemical Pest Controls

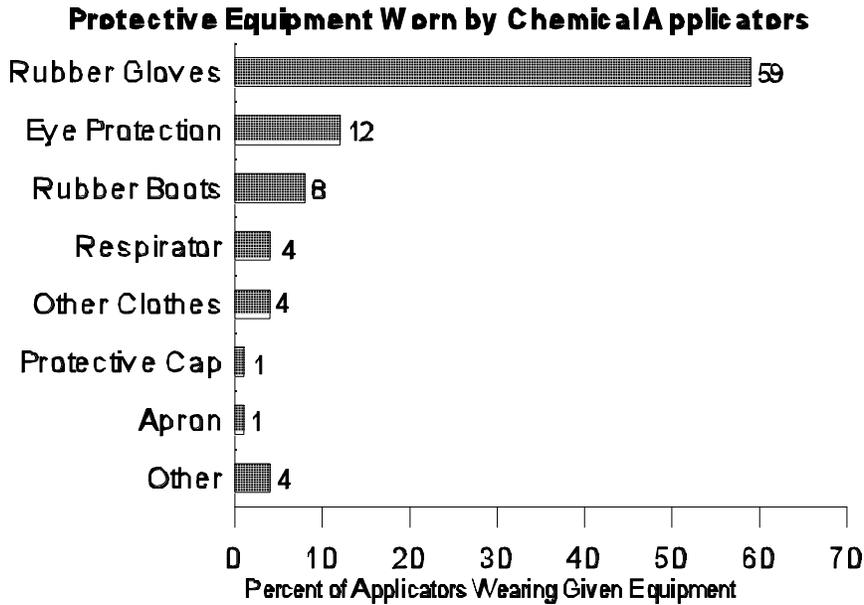
Percents by Group



**PROTECTIVE EQUIPMENT WORN BY CHEMICAL APPLICATORS**

Respirator		Eye Protection		Rubber Gloves		Rubber Boots		Apron		Protective Cap		Other Clothes		Other	
1994	1999	1994	1999	1994	1999	1994	1999	1994	1999	1994	1999	1994	1999	1994	1999
<b>Percent by Region</b>															
Region 1															
4	5	14	22	69	69	8	13	2	4	5	4	8	8	5	4
Region 2															
2	4	8	9	67	59	6	7	2	*	2	1	4	3	3	4
Region 3															
4	3	5	11	59	53	5	7	1	1	1	1	2	3	3	4
State															
3	4	8	12	64	59	6	8	1	1	2	1	4	4	3	4
<b>Percent by Operation Type</b>															
Cow - Calf															
3	2	7	11	65	58	6	6	1	*	2	1	5	3	4	4
Stocker - Feeder															
3	1	6	9	54	52	2	5	-	1	1	*	3	2	3	5
Feedlot															
13	11	30	39	83	83	17	24	7	7	7	12	9	16	4	9
Dairy															
2	3	7	12	45	41	9	12	2	3	5	*	5	2	-	2
Combination <sup>1/</sup>															
1	6	5	8	65	63	4	12	1	3	1	*	1	3	4	4

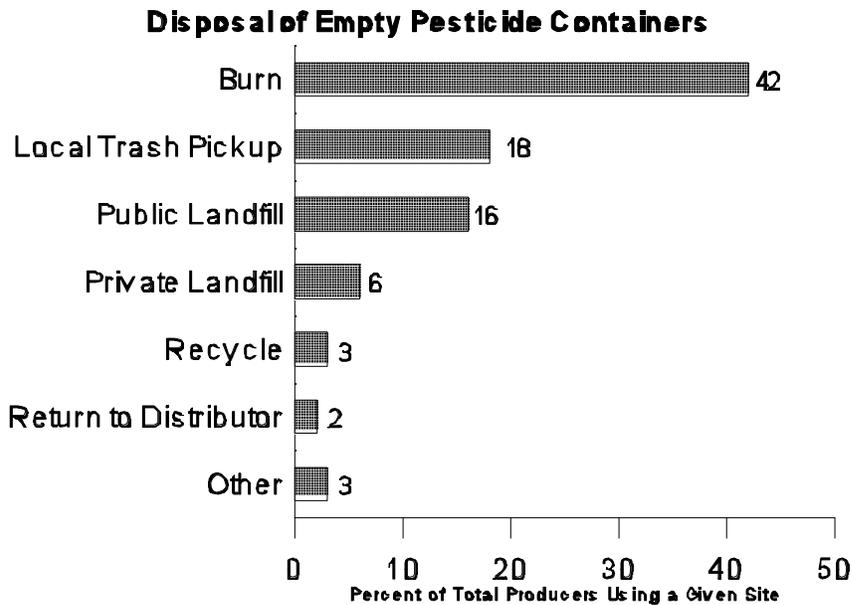
<sup>1/</sup> Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). \* = Less than 0.5 percent.



## DISPOSAL OF EMPTY PESTICIDE CONTAINERS

Public Landfill <sup>1/</sup>		Private Landfill <sup>1/</sup>		Local Trash Pickup		Return to Distributor		Burn		Recycle		Other	
1994	1999	1994	1999	1994	1999	1994	1999	1994	1999	1994	1999	1994	1999
<b>Percent by Region</b>													
Region 1													
18	17	4	10	14	19	5	3	42	41	3	3	6	4
Region 2													
19	19	6	5	8	18	1	1	49	43	2	1	7	3
Region 3													
14	13	3	5	15	17	1	1	47	41	3	4	6	3
State													
17	16	4	6	12	18	2	2	47	42	2	3	6	3
<b>Percent by Operation Type</b>													
Cow - Calf													
15	13	3	4	11	14	1	2	50	44	3	3	7	4
Stocker - Feeder													
17	27	4	5	12	14	-	2	49	37	1	*	6	4
Feedlot													
24	35	9	13	28	28	17	3	15	21	2	5	2	1
Dairy													
25	16	9	10	25	24	-	*	36	34	2	2	7	*
Combination <sup>1/</sup>													
19	13	5	8	12	26	2	2	48	45	3	2	5	*

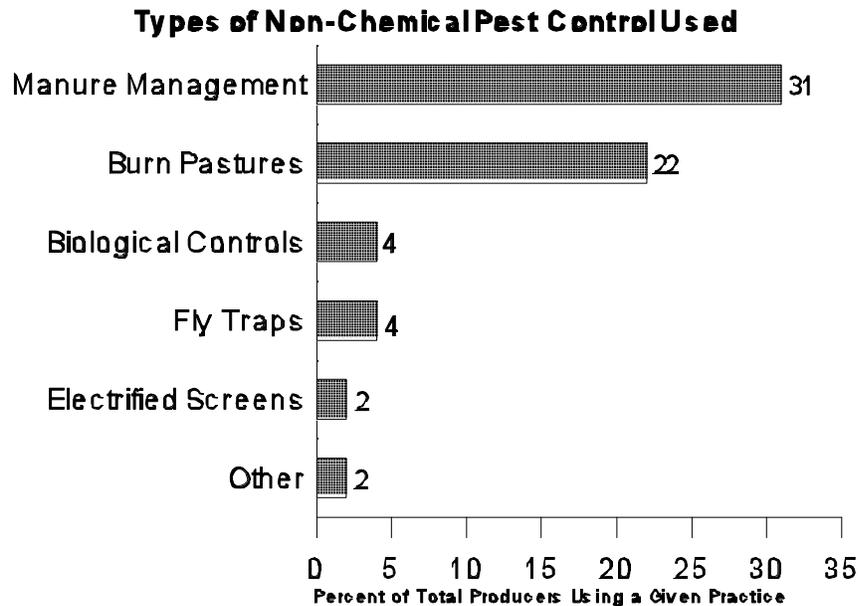
<sup>1/</sup> Direct delivery to landfill. <sup>2/</sup> Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf).  
 \* = Less than 0.5 percent.



## TYPES OF NON-CHEMICAL PEST CONTROL USED

Burn Pastures		Electrified Screens		Fly Traps		Manure Managements		Biological Controls		Other	
1994	1999	1994	1999	1994	1999	1994	1999	1994	1999	1994	1999
<b>Percent by Region</b>											
Region 1											
2	2	3	5	5	6	39	37	9	8	3	4
Region 2											
17	17	3	2	5	4	31	32	2	3	1	1
Region 3											
37	38	2	*	4	4	28	27	*	1	1	1
State											
22	22	3	2	5	4	31	31	3	4	1	2
<b>Percent by Operation Type</b>											
Cow - Calf											
23	23	2	1	4	3	26	21	1	1	1	1
Stocker - Feeder											
3	30	-	-	5	1	27	23	1	-	-	-
Feedlot											
2	3	2	9	2	9	65	81	28	29	-	5
Dairy											
9	5	16	5	11	9	59	60	5	3	2	*
Combination <sup>1/</sup>											
23	30	3	3	5	7	31	41	3	5	1	3

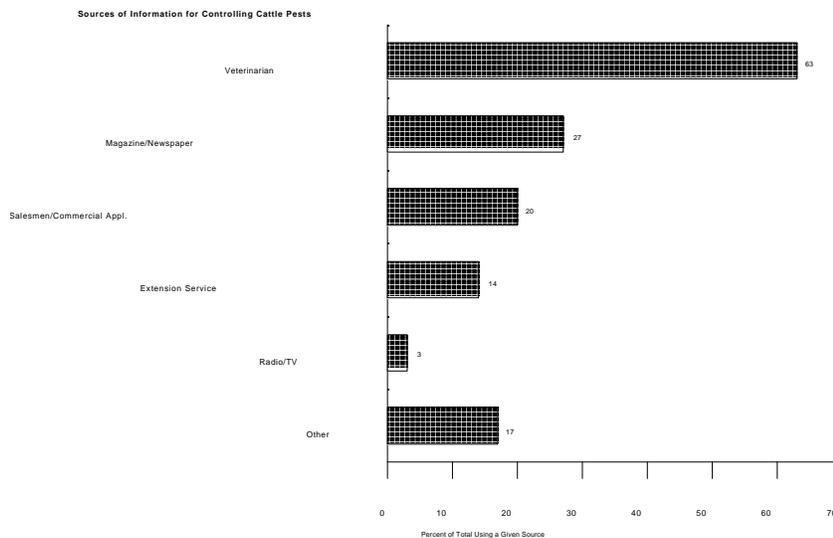
<sup>1/</sup> Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). \* = Less than 0.5 percent.



## SOURCES OF INFORMATION FOR CONTROLLING CATTLE PESTS 1/

Salesmen/Commercial Applicators		Radio/TV		Veterinarian		Extension Service		Magazine/ Newspaper		Other	
1994	1999	1994	1999	1994	1999	1994	1999	1994	1999	1994	1999
<b>Percent by Region</b>											
Region 1											
22	25	7	2	73	62	22	10	38	20	9	18
Region 2											
24	17	8	3	78	70	29	16	41	27	9	18
Region 3											
22	21	12	4	69	58	28	18	45	30	12	14
State											
23	20	9	3	73	63	27	14	42	27	12	17
<b>Percent by Operation Type</b>											
Cow - Calf											
20	14	10	3	75	66	29	15	44	26	6	16
Stocker - Feeder											
28	22	10	5	65	57	26	17	45	31	8	17
Feedlot											
41	41	-	1	63	52	17	13	13	17	7	28
Dairy											
30	29	9	2	70	43	25	14	32	34	18	12
Combination 2/											
24	29	8	6	75	66	26	18	42	29	13	15

1/ Sources of information do not sum to 100 because producers were allowed to select all sources that applied. 2/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf).



## INSECT PESTS CAUSING THE GREATEST ECONOMIC LOSS

Lice		Flies <u>1/</u>		Grubs		Scabies		Other <u>2/</u>	
1994	1999	1994	1999	1994	1999	1994	1999	1994	1999
<b>Percent by Region</b>									
Region 1									
30	32	53	54	16	13	*	1	*	*
Region 2									
35	32	57	55	7	11	*	-	1	2
Region 3									
26	26	61	60	9	8	-	*	1	6
State									
31	30	57	57	10	10	*	*	*	3
<b>Percent by Operation Type</b>									
Cow - Calf									
32	32	56	54	9	10	-	*	1	4
Stocker - Feeder									
29	22	61	66	10	9	-	-	-	3
Feedlot									
29	26	51	58	18	14	1	1	-	1
Dairy									
15	13	80	82	5	4	-	-	-	1
Combination <u>3/</u>									
31	33	58	54	10	10	*	-	-	3

### MOST SURVEY REPORTED PRODUCTS, BY REGION

Region	Most Reported	2 <sup>nd</sup> Most Reported	3 <sup>rd</sup> Most Reported
Region 1	Ivomec Pour-On	Ivomec Injectable	Dectomax Pour-On
Region 2	Ivomec Pour-On	Dectomax Pour-On	Cydectin Pour-On
Region 3	Ivomec Pour-On	Cydectin Pour-On	Co-Ral Animal Dust Dectomax Pour-On

### MOST SURVEY REPORTED PRODUCTS, BY TYPE OF OPERATION

Type of Operation	Most Reported	2 <sup>nd</sup> Most Reported	3 <sup>rd</sup> Most Reported
Cow - Calf	Ivomec Pour-On	Dectomax Pour-On	Cydectin Pour-On
Stocker - Feeder	Ivomec Pour-On	Co-Ral Animal Dust Cydectin Pour-On	Ivomec Injectable
Feedlot	Ivomec Injectable	Ivomec Pour-On	Cylence Pour-On
Dairy	Cylence Pour-On	Ivomec Pour-On	Permethrin Pour-On
Combination <u>3/</u>	Ivomec Pour-On	Dectomax Pour-On Cydectin Pour-On	Co-Ral Animal Dust
State	Ivomec Pour-On	Dectomax Pour-On	Cydectin Pour-On

1/ Confinement and pasture flies were reported. 2/ Includes ear ticks, other ticks, and horse flies. 3/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf). \* = less than 0.5 percent.

### ROTATION OF CHEMICALLY TREATED EAR TAGS

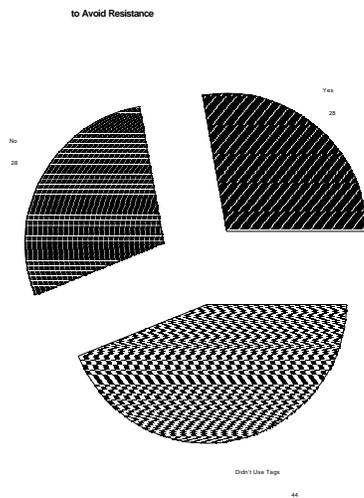
Yes		No		Didn't Use Tags	
1994	1999	1994	1999	1994	1999
<b>Percent by Region</b>					
Region 1					
32	16	24	30	44	54
Region 2					
40	34	21	25	39	41
Region 3					
36	30	23	29	41	41
State					
37	28	22	28	41	44
<b>Percent by Operation Type</b>					
Cow - Calf					
36	28	23	28	42	44
Stocker - Feeder					
46	38	22	26	32	36
Feedlot					
23	17	34	27	43	56
Dairy					
25	19	27	28	48	53
Combination 1/					
42	34	16	28	42	38

### ROTATION OF OTHER CHEMICAL PEST CONTROLS

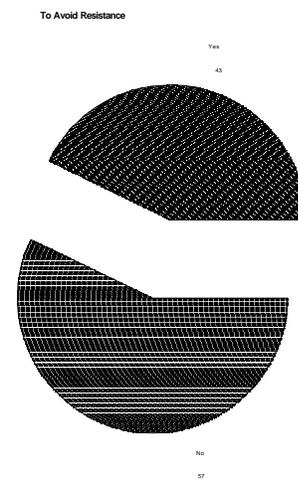
Yes		No	
1994	1999	1994	1999
<b>Percent by Region</b>			
Region 1			
28	43	72	57
Region 2			
32	41	68	59
Region 3			
35	45	65	55
State			
32	43	68	57
<b>Percent by Operation Type</b>			
Cow - Calf			
36	44	64	56
Stocker - Feeder			
21	35	79	65
Feedlot			
24	50	76	50
Dairy			
18	44	82	56
Combination 1/			
34	41	66	59

1/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf).

Rotation of Chemically Treated Ear Tags



Rotation of Other Chemical Pest Controls



**SOURCE OF BIOLOGICAL PURCHASES 1/, 1999**

<b>Region</b>	<b>Kansas Suppliers</b>	<b>Out-of State Suppliers</b>
Region 1	74	26
Region 2	25	75
Region 3	57	43
State	54	46
<b>Type of Operation</b>	<b>Kansas Suppliers</b>	<b>Out-of State Suppliers</b>
Cow - Calf	57	43
Stocker - Feeder	50	50
Feedlot	54	46
Dairy	50	50

1/ Data are percents of those reporting use of biological controls.

**Purchases of Biocontrols**

