

# **KANSAS**

# **AGRICULTURAL CHEMICAL USAGE**

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**1994 CATTLE PESTICIDE SUMMARY**

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October 1995

Cooperative Extension ServiceO Kansas State UniversityO Manhattan

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**For specific questions on the use of pesticides and biological control agents around beef and dairy facilities, contact the following Kansas State University Entomologists:**

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**This survey was made possible, in part, through a grant from the USDA's National Pesticide Impact Assessment Program.**

**For specific questions on survey mechanics and data analysis, please contact the Kansas Department of Agriculture, Division of Statistics, Topeka, KS. (913) 233-2230.**

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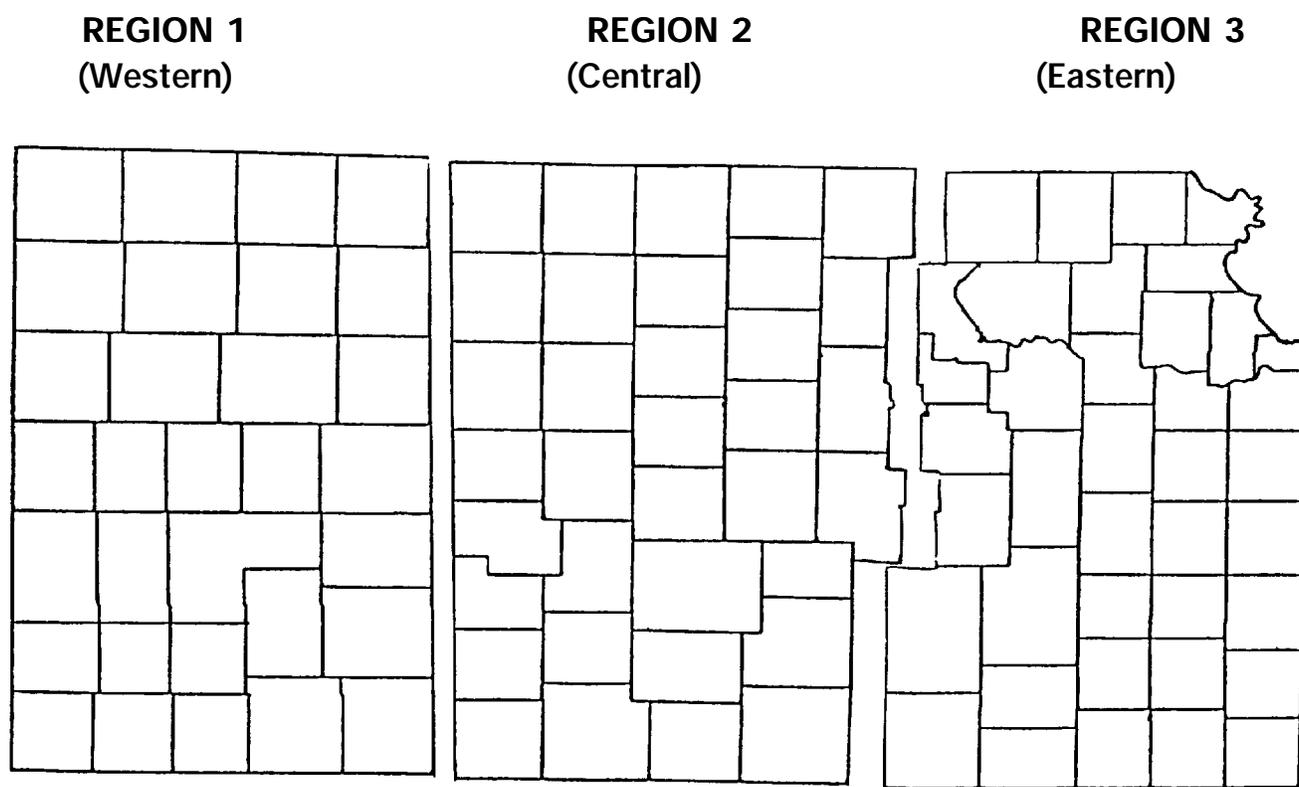
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## OVERVIEW

This is the fifth Kansas publication covering agricultural chemical use since 1978. The data presented in this publication were funded through the Cooperative Extension Service, Kansas State University, and the State Board of Agriculture.

This initiative is designed to provide farmers and ranchers the knowledge and technical means to respond independently and voluntarily to on- and off-farm environmental concerns. These data will help fill some of the data needs that analysts require to find solutions to the complex environmental issues of the 1990's.

For purposes of this survey, the State of Kansas was divided into three regions which can be described as Western, Central, and Eastern Kansas. The map below outlines the boundaries that were used.



The information presented in this publication is a result of a sample survey conducted during the winter and spring of 1995. Data were collected for chemical usage on cattle operations for 1994. A total of 1,581 usable reports were received from the sample of 2,177 cattle operations sampled. No data are published in this report unless at least 5 reports were received for that particular pesticide application.

A random sample of farm operators who have reported having cattle were selected from a list of known operators. The list was stratified by size and type of operation to ensure adequate sample distribution. The data was expanded by strata to represent the State totals.

The data in this report were summarized by region (shown on the previous page) 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).

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.

## **HIGHLIGHTS CATTLE PESTICIDE USAGE**

The most commonly used active ingredient in all phases of the cattle industry is Fenthion, with over 23,400 pounds being used. Over 64 percent of this total was applied in the central region. Fenthion was also the most common active ingredient used directly on cattle, with 95 percent of the total being applied through pour-on's. Malathion was the next most used active ingredient. Of the 21,500 pounds used State-wide, 73 percent was used in eastern Kansas.

Chemicals being applied in or around cattle facilities were not reported enough to summarize by district. At the State level, Dichlorvos was the most commonly used active ingredient to control pests. Almost 2,000 pounds of Dichlorvos were used in or around cattle facilities.

Diazinon-treated ear tags were the most commonly used treated ear tags. About 4,200 pounds of Diazinon were used in treated ear tags. Piperonyl Butoxide was the second most commonly used active ingredient in treated ear tags, with over 1,400 pounds being used.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>1/</u>			
				Excell .	Sati s.	Poo r	No Eff.
<b>CHLORPYRIFOS</b>							
<b>REGION 1</b>							
Pour-On	<u>2/</u>						
<b>REGION 2</b>							
Pour-On	<u>2/</u>						
<b>REGION 3</b>							
Pour-On	<u>2/</u>						
Spray	<u>2/</u>						
<b>STATE <u>3/</u></b>							
Pour-On	<u>2</u>						
Spray	<u>2/</u>						
<b>CLORSULON <u>5/</u></b>							
<b>REGION 1</b>							
Other	172,500	2,920	Confinement Flies, Grubs, Lice, Other	33	67		
<b>REGION 2</b>							
Other	19,200	460	Grubs, Lice, Pasture Flies	57	43		
<b>REGION 3</b>							
Other	40,100	950	Grubs, Lice, Pasture Flies	80	20		
<b>STATE <u>3/</u></b>							
Other	231,800	4,330	Flies <u>4/</u> , Grubs, Lice, Other	56	44		

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/ Active ingredient used in a product for both internal & external pests.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>1/</u>			
				Excell .	Sati s.	Poo r	No Eff.
<b>COUMAPHOS</b>							
<b>REGION 1</b>							
Dust	84,200	170	Flies <u>4/</u> , Grubs, Lice	24	65	12	
Rubbing Device	8,800	50	Lice, Pasture Flies		83	17	
Pour-On	<u>2/</u>						
Spray	<u>2/</u>						
<b>REGION 2</b>							
Dust	67,600	440	Flies <u>4/</u> , Grubs, Lice	13	76	11	
Pour-On	11,300	170	Flies <u>4/</u> , Grubs, Lice	20	80		
Rubbing Device	15,100	400	Grubs, Lice, Pasture Flies, Scabies	13	88		
Spray	21,700	830	Grubs, Lice, Pasture Flies	22	67	11	
Feed	<u>2/</u>						
<b>REGION 3</b>							
Dust	146,200	910	Flies <u>4/</u> , Grubs, Lice, Other	10	80	10	
Pour-On	12,000	120	Grubs, Lice, Pasture Flies	63	25	13	
Rubbing Device	25,500	750	Lice, Pasture Flies	8	83	8	
Spray	73,100	970	Ear Tick, Grubs, Lice, Pasture Flies	45	55		
<b>STATE <u>3/</u></b>							
Dust	297,900	1,510	Flies <u>4/</u> , Grubs, Lice, Other	13	77	10	
Pour-On	24,000	290	Flies <u>4/</u> , Grubs, Lice	37	58	5	
Rubbing Device	49,400	1,210	Grubs, Lice, Pasture Flies, Scabies	8	85	8	
Spray	96,200	1,850	Ear Tick, Grubs, Lice, Pasture Flies	36	61	3	
Feed	<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.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

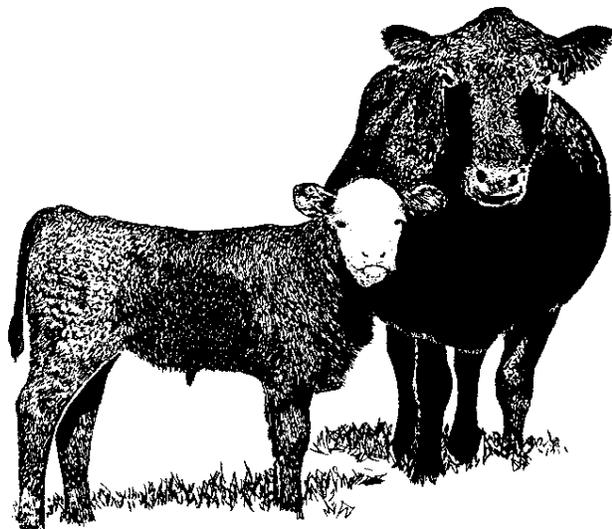
Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excell.	Satis.	Poor	No Eff.
<b>DICHLORVOS</b>							
<b>REGION 1</b>							
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>REGION 2</b>							
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>REGION 3</b>							
Spray	23,900	110	Flies <sup>4/</sup> , Lice, Other	9	82	9	
Rubbing Device	<u>2/</u>						
<b>STATE <sup>3/</sup></b>							
Spray	31,900	150	Flies <sup>4/</sup> , Grubs, Lice, Other	12	82	6	
Rubbing Device	<u>2/</u>						
<b>FAMPHUR</b>							
<b>REGION 1</b>							
Pour-On	40,100	1,340	Grubs, Lice, Pasture Flies	39	62		
<b>REGION 2</b>							
Pour-On	125,900	3,820	Grubs, Lice, Pasture Flies	33	67		
<b>REGION 3</b>							
Pour-On	34,000	1,010	Grubs, Lice, Pasture Flies, Other	43	57		
<b>STATE <sup>3/</sup></b>							
Pour-On	200,000	6,170	Grubs, Lice, Pasture Flies, Other	37	63		

<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.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excell.	Satis.	Poor	No Eff.
<b>FENTHION</b>							
<b>REGION 1</b>							
Pour-On	672,900	5,340	Flies <sup>4/</sup> , Grubs, Lice, Other	32	68		
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>REGION 2</b>							
Pour-On	1,094,900	14,160	Flies <sup>4/</sup> , Grubs, Lice, Other	35	61	2	2
Spray	<u>2/</u>						
<b>REGION 3</b>							
Pour-On	153,600	2,680	Flies <sup>4/</sup> , Grubs, Lice	30	70		
<b>STATE <sup>3/</sup></b>							
Pour-On	1,921,400	22,180	Flies <sup>4/</sup> , Grubs, Lice, Other	32	66	1	1
Rubbing Device	<u>2/</u>						
Spray	<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> Confinement & pasture flies were reported.



**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excell.	Satis.	Poor	No Eff.
<b>IVERMECTIN</b>							
<b>REGION 1</b>							
Pour-On	391,500	3,650	Flies <u>4/</u> , Grubs, Lice, Scabies, Other	56	44		
Other	695,900	1,440	Flies <u>4/</u> , Grubs, Lice, Other	71	29		
<b>REGION 2</b>							
Pour-On	503,700	5,750	Flies <u>4/</u> , Grubs, Lice, Scabies, Other	49	51		
Other	303,400	530	Flies <u>4/</u> , Grubs, Lice, Other	46	50	4	
Dip	<u>2/</u>						
Dust	<u>2/</u>						
<b>REGION 3</b>							
Pour-On	213,400	3,520	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Other	45	54	1	
Other	167,700	630	Ear Tick, Grubs, Lice, Pasture Flies, Other	57	43		
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>STATE <u>3/</u></b>							
Pour-On	1,108,600	12,920	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	49	51		★
Other	1,167,000	2,600	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Other	59	40	1	
Dip	<u>2/</u>						
Dust	<u>2/</u>						
Rubbing Device	<u>2/</u>						
Spray	<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> Confinement & pasture flies were reported. ★ Less than 0.5 percent.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excell.	Satis.	Poor	No Eff.
<b>LINDANE</b>							
<b>REGION 2</b>							
Dust	<u>2/</u>						
<b>STATE <u>3/</u></b>							
Dust	<u>2/</u>						
<b>MALATHION</b>							
<b>REGION 1</b>							
Dust	18,000	600	Flies <u>4/</u> , Lice	20	80		
Spray	16,100	290	Lice, Pasture Flies		80	20	
Pour-On	<u>2/</u>						
Rubbing Device	<u>2/</u>						
<b>REGION 2</b>							
Dust	6,100	80	Grubs, Lice, Pasture Flies		80	20	
Pour-On	<u>2/</u>						
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>REGION 3</b>							
Dust	26,400	280	Ear Tick, Flies <u>4/</u> , Lice, Scabies	14	79		7
Rubbing Device	43,200	14,150	Lice, Pasture Flies	38	63		
Spray	13,000	550	Flies <u>4/</u> , Grubs, Lice		90		10
Pour-On	<u>2/</u>						
<b>STATE <u>3/</u></b>							
Dust	50,500	960	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies	13	79		8
Rubbing Device	55,900	16,640	Flies <u>4/</u> , Lice	25	67		8
Spray	34,900	1,140	Flies <u>4/</u> , Grubs, Lice	16	74		11
Pour-On	<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> Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>1/</u>			
				Excell.	Satis.	Poor	No Eff.
<b>METHOPRENE</b>							
<b>REGION 1</b>							
Feed Additive	<u>2/</u>						
<b>REGION 2</b>							
Feed Additive	32,600		50 Lice, Pasture Flies	27	73		
<b>REGION 3</b>							
Feed Additive	14,300		30 Grubs, Lice, Pasture Flies, Other	23	69	8	
Other	<u>2/</u>						
<b>STATE <u>3/</u></b>							
Feed Additive	102,500		90 Flies <u>4/</u> , Grubs, Lice, Other	25	69	6	
Other	<u>2/</u>						
<b>METHOXYCHLOR</b>							
<b>REGION 1</b>							
Dust	<u>2/</u>						
<b>REGION 2</b>							
Dust	7,200		390 Grubs, Lice, Pasture Flies	20	60	20	
Rubbing Device	<u>2/</u>						
<b>REGION 3</b>							
Dust	13,200		1,330 Flies <u>4/</u> , Lice	15	85		
Pour-On	<u>2/</u>						
Spray	<u>2/</u>						
<b>STATE <u>3/</u></b>							
Dust	31,300		2,260 Flies <u>4/</u> , Grubs, Lice	21	74	5	
Pour-On	<u>2/</u>						
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/ Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excell.	Satis.	Poor	No Eff.
<b>PERMETHRIN</b>							
<b>REGION 1</b>							
Pour-On	192,400	420	Flies <u>4/</u> , Grubs, Lice	21	79		
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>REGION 2</b>							
Pour-On	283,100	960	Flies <u>4/</u> , Grubs, Lice, Scabies	33	65	2	
Rubbing Device	20,000	380	Flies <u>4/</u> , Grubs, Lice	38	50	13	
Spray	58,400	760	Flies <u>4/</u> , Grubs, Lice	25	75		
Dust	<u>2/</u>						
<b>REGION 3</b>							
Pour-On	219,800	2,780	Flies <u>4/</u> , Grubs, Lice	26	74		
Rubbing Device	17,400	290	Flies <u>4/</u> , Grubs, Lice	13	75	13	
Spray	41,800	140	Flies <u>4/</u> , Grubs, Lice, Other	16	72	12	
Dust	<u>2/</u>						
<b>STATE <u>3/</u></b>							
Dust	8,900	10	Lice, Pasture Flies		100		
Pour-On	695,300	4,160	Flies <u>4/</u> , Grubs, Lice, Scabies	29	71	1	
Rubbing Device	42,500	1,170	Flies <u>4/</u> , Grubs, Lice	26	63	11	
Spray	102,900	910	Flies <u>4/</u> , Grubs, Lice, Other	18	72	10	

<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.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excell.	Satis.	Poor	No Eff.
<b>PHOSMET</b>							
<b>REGION 1</b>							
Spray	<u>2/</u>						
<b>REGION 2</b>							
Pour-On	<u>2/</u>						
Spray	<u>2/</u>						
<b>REGION 3</b>							
Spray	<u>2/</u>						
<b>STATE <sup>3/</sup></b>							
Pour-On	<u>2/</u>						
Spray	<u>2/</u>						
<b>PIPERONYL BUTOXIDE (Synergist)</b>							
<b>REGION 1</b>							
Pour-On	4,500	100 Grubs, Lice, Pasture Flies	33	67			
<b>REGION 2</b>							
Pour-On	86,100	1,540 Flies <sup>4/</sup> , Grubs, Lice	33	62	5		
Dust	<u>2/</u>						
<b>REGION 3</b>							
Dust	8,200	30 Flies <sup>4/</sup>		100			
Pour-On	47,700	1,130 Flies <sup>4/</sup> , Grubs, Lice	17	83			
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>STATE <sup>3/</sup></b>							
Dust	10,100	30 Flies <sup>4/</sup> , Grubs, Lice		100			
Pour-On	138,300	2,770 Flies <sup>4/</sup> , Grubs, Lice	27	71	2		
Rubbing Device	<u>2/</u>						
Spray	<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> Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>1/</u>			
				Exce ll.	Satis .	Poor	No Eff.
<b>PYRETHRIN</b>							
<b>REGION 2</b>							
Dust	<u>2/</u>						
<b>REGION 3</b>							
Dust	8,200		★ Flies <u>4/</u>		100		
Spray	<u>2/</u>						
<b>STATE <u>3/</u></b>							
Dust	10,100		★ Flies <u>4/</u> , Grubs, Lice		100		
Spray	<u>2/</u>						
<b>SULFUR</b>							
<b>REGION 3</b>							
Dust	<u>2/</u>						
Spray	<u>2/</u>						
<b>STATE <u>3/</u></b>							
Dust	<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/ Confinement & pasture flies were reported. ★ Less than 10 lbs.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

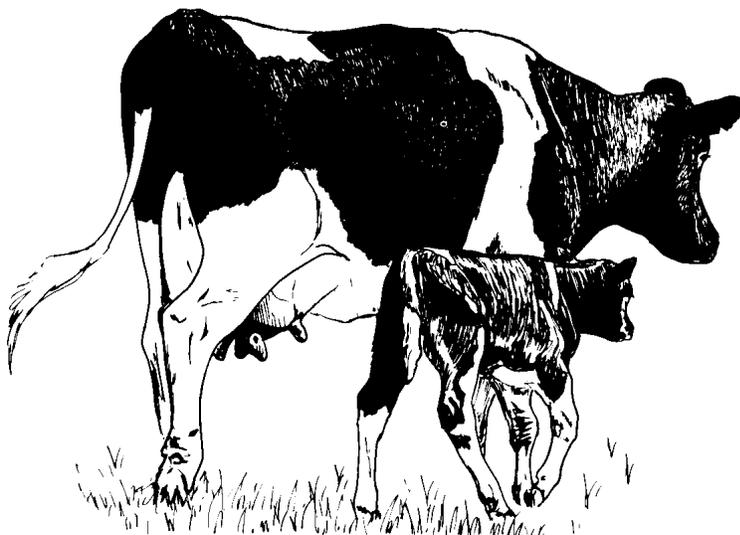
Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>1/</u>			
				Excell.	Satis.	Poor	No Eff.
<b>TETRACHLORVINPHOS</b>							
<b>REGION 1</b>							
Dust	<u>2/</u>						
Feed Additive	<u>2/</u>						
Pour-On	<u>2/</u>						
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>REGION 2</b>							
Dust	7,200	140 Lice, Pasture Flies	20	80			
Spray	10,700	140 Flies <u>4/</u>		57	43		
Rubbing Device	<u>2/</u>						
<b>REGION 3</b>							
Dust	32,100	580 Grubs, Lice, Pasture Flies	14	79	7		
Spray	23,900	420 Flies <u>4/</u> , Lice, Other	9	82	9		
Feed Additive	<u>2/</u>						
Rubbing Device	<u>2/</u>						
<b>STATE <u>3/</u></b>							
Dust	42,700	760 Grubs, Lice, Pasture Flies	14	76	10		
Rubbing Device	5,900	70 Grubs, Lice, Pasture Flies		100			
Spray	36,900	610 Flies <u>4/</u> , Grubs, Lice, Other	10	71	19		
Feed Additive	<u>2/</u>						
Pour-On	<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.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY APPLICATION METHOD, BY REGION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>1/</u>			
				Exce ll.	Satis .	Poor	No Eff.
<b>TRICHLORFON</b>							
<b>REGION 1</b>							
Pour-On	104,000	1,320	Grubs, Lice, Pasture Flies	23	69	8	
Spray	<u>2/</u>						
<b>REGION 2</b>							
Pour-On	93,500	2,250	Grubs, Lice, Pasture Flies	38	62		
<b>REGION 3</b>							
Pour-On	66,300	1,090	Flies <u>4/</u> , Grubs, Lice	33	60	7	
<b>STATE <u>3/</u></b>							
Pour-On	263,800	4,650	Flies <u>4/</u> , Grubs, Lice	34	63	3	
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/ Confinement & pasture flies were reported.



**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY METHOD OF APPLICATION, BY  
TYPE OF OPERATION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excell.	Satis.	Poor	No Eff.
<b>CHLORPYRIFOS</b>							
<b>COW/CALF</b>							
Pour-On	<u>2/</u>						
Spray	<u>2/</u>						
<b>STOCKER/FEEDER</b>							
Pour-On	<u>2/</u>						
<b>CLORSULON <sup>5/</sup></b>							
<b>COW/CALF</b>							
Other	10,700	440	Grubs, Lice, Pasture Flies	57	43		
<b>STOCKER/FEEDER</b>							
Other	18,200	330	Grubs, Lice	60	40		
<b>FEEDLOT</b>							
Other	<u>2/</u>						
<b>COMBINATIONS <sup>3/</sup></b>							
Other	<u>2/</u>						
<b>COUMAPHOS</b>							
<b>COW/CALF</b>							
Dust	156,000	750	Flies <sup>4/</sup> , Grubs, Lice, Other	16	77	8	
Pour-On	19,400	260	Flies <sup>4/</sup> , Grubs, Lice	33	60	7	
Rubbing Device	38,300	1,020	Grubs, Lice, Pasture Flies, Scabies		90	11	
Spray	36,300	770	Ear Tick, Grubs, Lice, Pasture Flies	38	56	6	
<b>STOCKER/FEEDER</b>							
Dust	17,100	30	Flies <sup>4/</sup> , Grubs, Lice	11	78	11	
Spray	26,700	670	Grubs, Lice, Pasture Flies	50	50		
Pour-On	<u>2/</u>						
Rubbing Device	<u>2/</u>						
<b>COMBINATION <sup>3/</sup></b>							
Dust	117,500	700	Flies <sup>4/</sup> , Lice	8	71	21	
Rubbing Device	11,000	170	Lice, Pasture Flies	33	67		
Spray	33,200	410	Ear Tick, Grubs, Lice, Pasture Flies	22	78		
Feed Additive	<u>2/</u>						
Pour-On	<u>2/</u>						
<b>DAIRY</b>							
Dust	<u>2/</u>						
Pour-On	<u>2/</u>						
<b>FEEDLOT</b>							
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 1 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  
BY ACTIVE INGREDIENT, BY METHOD OF APPLICATION, BY  
TYPE OF OPERATION**

Application Method	Cattle Treatments	Total Quantity	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excel.	Satis.	Poor	No Eff.
<b>Used DDT</b>							
<b>DITHIORVOS</b>							
<b>COW/CALF</b>							
Spray	19,500	110 Flies <u>4/</u> , Grubs,		15	77	8	
Rubbing Device	<u>2/</u>						
<b>STOCKER/FEEDER</b>							
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>COMBINATION <u>3/</u></b>							
Rubbing Device	<u>2/</u>						
<b>FAMPHUR</b>							
<b>COW/CALF</b>							
Pour-On	75,600	2,420 Grubs, Lice,		40	60		
<b>COMBINATION <u>3/</u></b>							
Pour-On	87,800	3,260 Grubs, Lice,		30	70		
<b>FEEDLOT</b>							
Pour-On	<u>2/</u>						
<b>STOCKER/FEEDER</b>							
Pour-On	<u>2/</u>						
<b>FENTHION</b>							
<b>COW/CALF</b>							
Pour-On	495,200	3,600 Grubs, Lice,		30	68	1	1
Spray	<u>2/</u>						
<b>FEEDLOT</b>							
Pour-On	1,020,600	9,320 Flies <u>4/</u> , Grubs,		35	65		
<b>STOCKER/FEEDER</b>							
Pour-On	134,000	2,950 Flies <u>4/</u> , Grubs,		29	65	6	
<b>COMBINATION <u>3/</u></b>							
Pour-On	269,600	6,280 Flies <u>4/</u> , Grubs,		36	64		
Spray	<u>2/</u>						
<b>DAIRY</b>							
Pour-On	<u>2/</u>						
Rubbing Device	<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 1 type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY METHOD OF APPLICATION, BY  
TYPE OF OPERATION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excel.	Satis.	Poor	No Eff.
<b>IVERMECTIN</b>							
<b>COW/CALF</b>							
Pour-On	345,900	4,200	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	47	53	1	
Other	98,300	330	Ear Tick, Grubs, Lice, Pasture Flies, Other	57	40	2	
Dip	<u>2/</u>						
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>DAIRY</b>							
Pour-On	6,400	90	Grubs, Lice, Pasture Flies, Other	29	71		
Other	<u>2/</u>						
<b>FEEDLOT</b>							
Pour-On	313,200	2,920	Flies <u>4/</u> , Grubs, Lice, Scabies	36	64		
Other	645,200	1,180	Confinement Flies, Grubs, Lice, Other	67	33		
<b>STOCKER/FEEDER</b>							
Pour-On	229,800	2,900	Grubs, Lice, Pasture Flies, Other	58	42		
Other	37,800	70	Grubs, Lice, Pasture Flies	60	40		
<b>COMBINATION <u>3/</u></b>							
Pour-On	213,300	2,810	Flies <u>4/</u> , Grubs, Lice, Other	57	44		
Other	385,000	1,010	Grubs, Lice, Pasture Flies, Other	60	40		
Dust	<u>2/</u>						
<b>LINDANE</b>							
<b>COW/CALF</b>							
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> Combination is operation with more than 1 type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY METHOD OF APPLICATION, BY  
TYPE OF OPERATION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excel.	Satis.	Poor	No Eff.
<b>MALATHION</b>							
<b>COW/CALF</b>							
Dust	42,400	910	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies	17	78	6	
Rubbing Device	12,400	2,090	Lice, Pasture Flies	14	71	14	
Spray	18,600	840	Flies <u>4/</u> , Grubs, Lice	15	77	8	
Pour-On	<u>2/</u>						
<b>DAIRY</b>							
Dust	<u>2/</u>						
<b>FEEDLOT</b>							
Spray	<u>2/</u>						
<b>STOCKER/FEEDER</b>							
Dust	<u>2/</u>						
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>COMBINATION <sup>3/</sup></b>							
Dust	<u>2/</u>						
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>METHOPRENE</b>							
<b>COW/CALF</b>							
Feed Additive	47,000	70	Grubs, Lice, Pasture Flies, Other	31	65	4	
Other	<u>2/</u>						
<b>FEEDLOT</b>							
Feed Additive	<u>2/</u>						
<b>STOCKER/FEEDER</b>							
Feed Additive	<u>2/</u>						
<b>COMBINATION <sup>3/</sup></b>							
Feed Additive	<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 1 type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY METHOD OF APPLICATION, BY  
TYPE OF OPERATION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>1/</u>			
				Excel.	Satis.	Poor	No Eff.
<b>METHOXYCHLOR</b>							
<b>COW/CALF</b>							
Dust	21,900	1,450	Flies <u>4/</u> , Lice	18	73	9	
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>DAIRY</b>							
Dust	6,500	530	Flies <u>4/</u> , Grubs, Lice	33	67		
Pour-On	<u>2/</u>						
<b>COMBINATION <u>3/</u></b>							
Dust	<u>2/</u>						
<b>PERMETHRIN</b>							
<b>COW/CALF</b>							
Pour-On	125,000	410	Flies <u>4/</u> , Grubs, Lice	27	71	2	
Rubbing Device	39,200	1,070	Flies <u>4/</u> , Grubs, Lice	24	65	12	
Spray	39,600	130	Flies <u>4/</u> , Grubs, Lice, Other	17	70	13	
Dust	<u>2/</u>						
<b>DAIRY</b>							
Pour-On	16,800	60	Flies <u>4/</u> , Grubs, Lice, Scabies	42	58		
Spray	11,000	110	Flies <u>4/</u> , Grubs, Lice	30	70		
Rubbing Device	<u>2/</u>						
<b>STOCKER/FEEDER</b>							
Pour-On	107,500	360	Grubs, Lice, Pasture Flies	22	78		
Spray	<u>2/</u>						
<b>COMBINATION <u>3/</u></b>							
Pour-On	192,800	2,810	Flies <u>4/</u> , Grubs, Lice	30	70		
Spray	49,300	670	Flies <u>4/</u>		100		
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 1 type of cattle operation (i.e. feedlot and cow/calf). 4/ Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY METHOD OF APPLICATION, BY  
TYPE OF OPERATION**

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excel	Satis	Poor	No Eff.
<b>PHOSMET</b>							
<b>COW/CALF</b>							
Spray	<u>2/</u>						
<b>STOCKER/FEEDER</b>							
Pour-On	<u>2/</u>						
<b>PIPERONYL BUTOXIDE (Synergist)</b>							
<b>COW/CALF</b>							
Pour-On	66,200	1,360	Flies <u>4/</u> , Grubs, Lice	26	70	4	
Dust	<u>2/</u>						
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>COMBINATION <sup>3/</sup></b>							
Pour-On	32,100	750	Flies <u>4/</u> , Grubs, Lice	29	71		
<b>DAIRY</b>							
Dust	<u>2/</u>						
Pour-On	<u>2/</u>						
<b>STOCKER/FEEDER</b>							
Pour-On	<u>2/</u>						
<b>PYRETHRIN</b>							
<b>COW/CALF</b>							
Dust	<u>2/</u>						
Spray	<u>2/</u>						
<b>DAIRY</b>							
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> Combination is operation with more than 1 type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement & pasture flies were reported.

**PESTICIDE USAGE ON CATTLE  
BY ACTIVE INGREDIENT, BY METHOD OF APPLICATION, BY  
TYPE OF OPERATION**

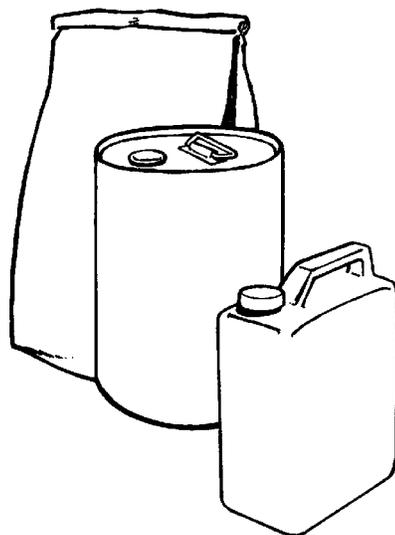
Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excel l.	Satis .	Poor	No Eff.
<b>SULFUR</b>							
<b>COW/CALF</b>							
Spray	<u>2/</u>						
<b>STOCKER/FEEDER</b>							
Dust	<u>2/</u>						
<b>TETRACHLORVINPHOS</b>							
<b>COW/CALF</b>							
Dust	38,200	690	Grubs, Lice, Pasture Flies	12	82	6	
Spray	24,100	450	Flies <sup>4/</sup> , Grubs, Lice, Other	13	69	19	
Feed Additive	<u>2/</u>						
Pour-On	<u>2/</u>						
Rubbing Device	<u>2/</u>						
<b>DAIRY</b>							
Dust	<u>2/</u>						
<b>STOCKER/FEEDER</b>							
Dust	<u>2/</u>						
Rubbing Device	<u>2/</u>						
Spray	<u>2/</u>						
<b>COMBINATION <sup>3/</sup></b>							
Dust	<u>2/</u>						
Feed Additive	<u>2/</u>						
Rubbing Device	<u>2/</u>						
Spray	<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 1 type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement & pasture flies were reported.

## PESTICIDE USAGE ON CATTLE BY ACTIVE INGREDIENT, BY METHOD OF APPLICATION, BY TYPE OF OPERATION

Application Method	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excel l.	Satis .	Poor	No Eff.
<b>TRICHLORFON</b>							
<b>COW/CALF</b>							
Pour-On	72,300	1,760	Grubs, Lice, Pasture Flies	27	69	4	
<b>COMBINATION <sup>3/</sup></b>							
Pour-On	127,900	2,070	Grubs, Lice, Pasture Flies	36	64		
<b>DAIRY</b>							
Pour-On	<u>2/</u>						
<b>FEEDLOT</b>							
Pour-On	<u>2/</u>						
Spray	<u>2/</u>						
<b>STOCKER/FEEDER</b>							
Pour-On	<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 1 type of cattle operation (i.e. feedlot and cow/calf).



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

Application Method	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>2/</u>			
			Excell.	Satis.	Poor	No Eff.
<b>DIAZINON</b>						
Area Spray	<u>3/</u>					
<b>DICHLORVOS</b>						
Area Spray	1,510	Flies <u>4/</u>	9	82	9	
Residual Spray	390	Flies <u>4/</u>	14	57	29	
Bait	<u>3/</u>					
<b>DIMETHOATE</b>						
Area Spray	<u>3/</u>					
<b>DIMETHYLCYCLOPROPANECARBOXYLATE (Synergist)</b>						
Area Spray	<u>3/</u>					
<b>DIPROPYL ISOCINCHOMERATE (Synergist)</b>						
Residual Spray	<u>3/</u>					
<b>MALATHION</b>						
Area Spray	440	Flies <u>4/</u> , Lice	20	60	20	
Residual Spray	1,420	Flies <u>4/</u> , Lice, Other	10	60	30	
<b>METHOMYL</b>						
Bait	100	Flies <u>4/</u> , Lice	16	76	8	
<b>METHOXYCHLOR</b>						
Area Spray	<u>3/</u>					
Residual Spray	<u>3/</u>					

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

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

Application Method	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>2/</u>			
			Excell.	Satis.	Poor	No Eff.
<b>N-OCTYL BICYCLPHEPTENE DICARBOXIMIDE (Synergist)</b>						
Area Spray	10	Flies <u>4/</u> , Lice, Other	43	43		14
<b>NALED</b>						
Area Spray	<u>3/</u>					
Residual Spray	<u>3/</u>					
<b>PERMETHRIN</b>						
Area Spray	50	Flies <u>4/</u>	13	88		
Residual Spray	100	Flies <u>4/</u>	20	60	20	
<b>PIPERONYL BUTOXIDE (Synergist)</b>						
Area Spray	120	Flies <u>4/</u> , Lice	36	57		7
Residual Spray	★	Flies <u>4/</u>	36	55	9	
Bait	<u>3/</u>					
<b>PYRETHRIN</b>						
Area Spray	30	Flies <u>4/</u> , Lice, Other	40	53		7
Residual Spray	★	Flies <u>4/</u>	36	55	9	
Bait	<u>3/</u>					
<b>TETRACHLORVINPHOS</b>						
Area Spray	<u>3/</u>					
Residual Spray	<u>3/</u>					
<b>TRICHLORFON</b>						
Residual Spray	<u>3/</u>					

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

## CHEMICALLY TREATED EAR TAG USAGE ON CATTLE BY ACTIVE INGREDIENTS, BY REGION

Region	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>1/</u>			
				Excell.	Satis.	Poor	No Eff.
<b>CHLORPYRIFOS</b>							
REGION 1	<u>2/</u>						
REGION 2	<u>2/</u>						
REGION 3	<u>2/</u>						
STATE <u>3/</u>	16,300	20 Ear Tick, Flies <u>4/</u>		100			
<b>CYFLUTHRIN</b>							
REGION 1	25,400	80 Ear Tick, Lice, Pasture Flies		57	43		
REGION 2	47,500	170 Ear Tick, Lice, Pasture Flies		24	71	5	
REGION 3	61,200	200 Ear Tick, Flies <u>4/</u> , Lice		17	78	4	
STATE <u>3/</u>	134,100	440 Ear Tick, Flies <u>4/</u> , Lice		26	71	4	
<b>CYPERMETHRIN</b>							
REGION 2	<u>2/</u>						
REGION 3	<u>2/</u>						
STATE <u>3/</u>	10,400	20 Flies <u>4/</u>		100			
<b>DIAZINON</b>							
REGION 1	35,400	350 Ear Tick, Flies <u>4/</u> , Lice		21	74	5	
REGION 2	160,700	2,070 Flies <u>4/</u> , Lice		11	82	7	
REGION 3	141,100	1,790 Ear Tick, Flies <u>4/</u> , Lice		20	72	8	
STATE <u>3/</u>	337,200	4,210 Ear Tick, Flies <u>4/</u> , Lice		17	76	7	
<b>FENTHION</b>							
REGION 1	23,800	140 Ear Tick, Pasture Flies		10	90		
REGION 2	125,700	870 Ear Tick, Flies <u>4/</u> , Lice		12	88		
REGION 3	29,900	210 Ear Tick, Flies <u>4/</u> , Lice		30	48	22	
STATE <u>3/</u>	179,500	1,220 Ear Tick, Flies <u>4/</u> , Lice		18	73	9	

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 INGREDIENTS, BY REGION

Region	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excell.	Satis.	Poor	No Eff.
<b>FENVALERATE</b>							
REGION 1	9,500	20	Ear Tick, Lice, Pasture Flies	14	71	14	
REGION 2	36,000	70	Ear Tick, Flies <u>4/</u>	46	46	9	
REGION 3	18,400	50	Ear Tick, Lice, Pasture Flies	5	68	27	
STATE <u>3/</u>	63,800	140	Ear Tick, Flies <u>4/</u> , Lice	18	63	20	
<b>LAMBDA-CYHALOTHRIN</b>							
REGION 1	<u>2/</u>						
REGION 2	105,800	220	Ear Tick, Flies <u>4/</u> , Lice	26	74		
REGION 3	13,500	50	Ear Tick, Lice, Pasture Flies	23	62	15	
STATE <u>3/</u>	123,200	280	Ear Tick, Flies <u>4/</u> , Lice	26	69	6	
<b>PERMETHRIN</b>							
REGION 1	20,800	70	Ear Tick, Flies <u>4/</u> , Lice	29	71		
REGION 2	21,100	70	Ear Tick, Pasture Flies, Other	27	67	7	
REGION 3	32,300	90	Ear Tick, Flies <u>4/</u> , Lice	20	64	12	4
STATE <u>3/</u>	74,200	230	Ear Tick, Flies <u>4/</u> , Lice, Other	24	67	7	2
<b>PIPERONYL BUTOXIDE (Synergist)</b>							
REGION 1	34,600	120	Ear Tick, Flies <u>4/</u> , Lice	13	88		
REGION 2	246,800	1,030	Ear Tick, Flies <u>4/</u> , Lice	16	85		
REGION 3	60,500	310	Ear Tick, Flies <u>4/</u> , Lice	24	59	17	
STATE <u>3/</u>	341,900	1,470	Ear Tick, Flies <u>4/</u> , Lice	18	75	7	
<b>PIRIMIPHOS METHYL</b>							
REGION 1	18,400	90	Ear Tick, Flies <u>4/</u> , Lice		92		8
REGION 2	86,700	480	Ear Tick, Lice, Pasture Flies	3	89	8	
REGION 3	41,700	230	Ear Tick, Lice, Pasture Flies	15	80		5
STATE <u>3/</u>	146,800	800	Ear Tick, Flies <u>4/</u> , Lice	6	87	4	3

<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.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excel l.	Satis .	Poor	No Eff.
<b>CHLORPYRIFOS</b>							
COW/CALF	11,300	20	Ear Tick, Flies <u>4/</u>		100		
STOCKER/FEEDER	<u>2/</u>						
<b>CYFLUTHRIN</b>							
COW/CALF	51,300	160	Ear Tick, Flies <u>4/</u> , Lice	28	69	3	
STOCKER/FEEDER	26,600	90	Lice, Pasture Flies	17	83		
COMBINATION <u>3/</u>	46,100	160	Lice, Pasture Flies	30	60	10	
DAIRY	<u>2/</u>						
FEEDLOT	<u>2/</u>						
<b>CYPERMETHRIN</b>							
COW/CALF	10,400	20	Flies <u>4/</u>		100		
<b>DIAZINON</b>							
COW/CALF	83,300	890	Ear Ticks, Flies <u>4/</u> , Lice	14	80	6	
DAIRY	6,500	70	Flies <u>4/</u>	40	60		
STOCKER/FEEDER	151,300	1,920	Flies <u>4/</u> , Lice	15	78	7	
COMBINATION <u>3/</u>	51,800	770	Ear Tick, Flies <u>4/</u>	20	68	12	
FEEDLOT	<u>2/</u>						
<b>FENTHION</b>							
COW/CALF	58,900	440	Ear Tick, Flies <u>4/</u> , Lice	21	70	9	
COMBINATION <u>3/</u>	97,100	620	Ear Tick, Flies <u>4/</u> , Lice	13	80	7	
DAIRY	<u>2/</u>						
FEEDLOT	<u>2/</u>						
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 1 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

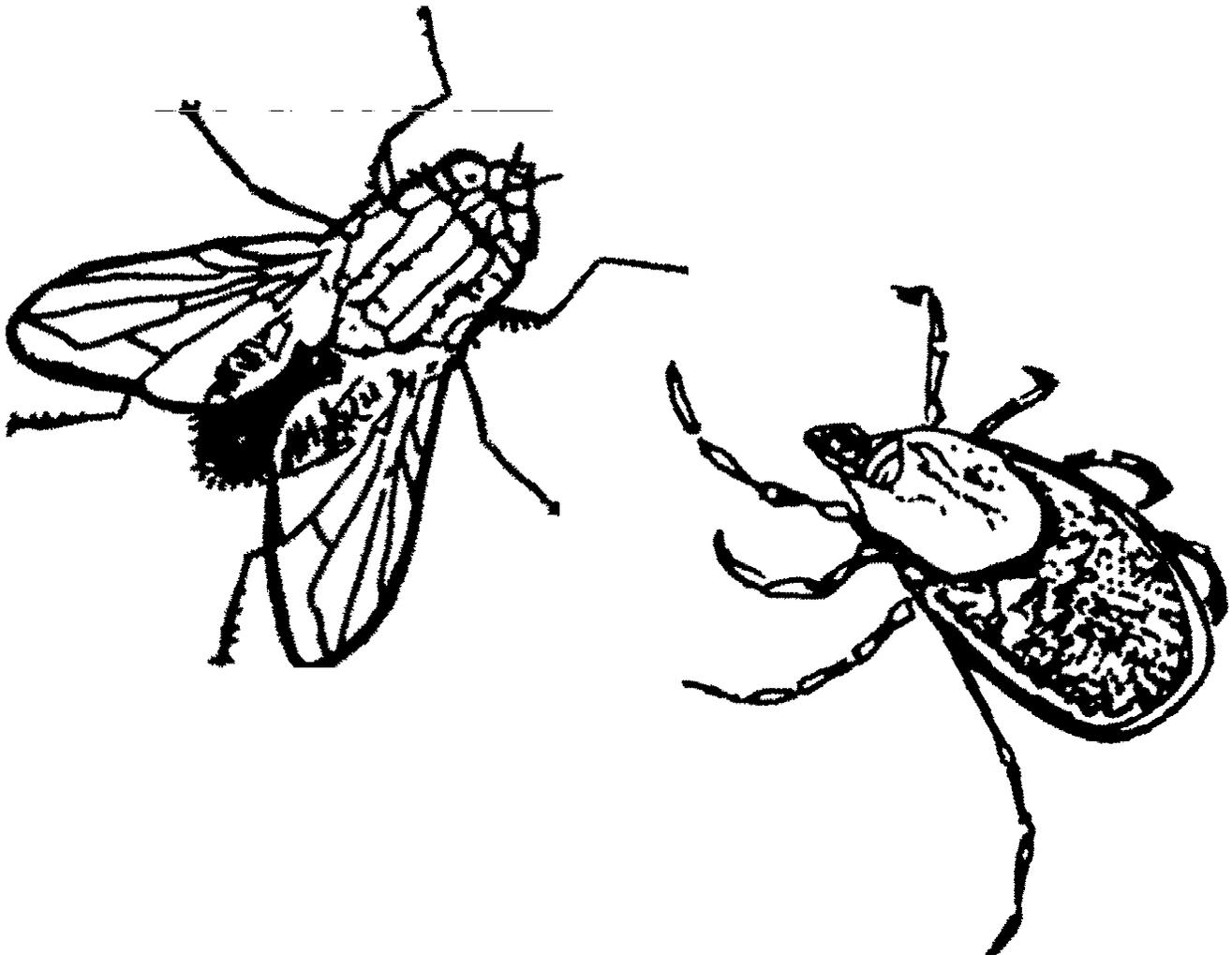
Type of Operation	Cattle Treatments	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excel l.	Satis .	Poor	No Eff.
<b>FENVALERATE</b>							
COW/CALF	31,600	70	Ear Tick, Flies <u>4/</u> , Lice	20	60	20	
COMBINATION <u>3/</u>	24,500	50	Flies <u>4/</u>	14	57	29	
DAIRY	<u>2/</u>						
FEEDLOT	<u>2/</u>						
STOCKER/FEEDER	<u>2/</u>						
<b>LAMBDA CYHALOTHRIN</b>							
COW/CALF	22,100	60	Ear Tick, Lice, Pasture Flies	19	76	5	
STOCKER/FEEDER	89,800	190	Flies <u>4/</u>	67	17	17	
COMBINATION <u>3/</u>	11,000	30	Pasture Flies	14	86		
FEEDLOT	<u>2/</u>						
<b>PERMETHRIN</b>							
COW/CALF	41,000	130	Ear Tick, Flies <u>4/</u> , Lice, Other	22	65	11	3
STOCKER/FEEDER	26,200	80	Lice, Pasture Flies	22	78		
COMBINATION <u>3/</u>	6,200	20	Pasture Flies	43	57		
FEEDLOT	<u>2/</u>						
<b>PIPERONYL BUTOXIDE (Synergist)</b>							
COW/CALF	92,200	500	Ear Tick, Flies <u>4/</u> , Lice	18	75	7	
STOCKER/FEEDER	125,400	380	Ear Tick, Flies <u>4/</u> ,	29	57	14	
COMBINATION <u>3/</u>	108,100	510	Ear Tick, Flies <u>4/</u> , Lice	14	82	5	
DAIRY	<u>2/</u>						
FEEDLOT	<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 1 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.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
				Excel l.	Satis .	Poor	No Eff.
<b>PIRIMIPHOS METHYL</b>							
COW/CALF	85,000	470	Ear Ticks, Lice, Pasture Flies	6	88	4	2
STOCKER/FEEDER	29,300	150	Lice, Pasture Flies		78	11	11
COMBINATION <sup>3/</sup>	24,500	150	Pasture Flies		100		
DAIRY	<sup>2/</sup>						
FEEDLOT	<sup>2/</sup>						

<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 1 type of cattle operation (i.e. feedlot and cow/calf).



## ALL PESTICIDE USAGE ON CATTLE AND FACILITIES BY ACTIVE INGREDIENT BY REGION

Region	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>1/</u>			
			Excell.	Satis.	Poor	No Eff.
<b>CHLORPYRIFOS</b>						
REGION 1	<u>2/</u>					
REGION 2	220	Flies <u>4/</u> , Lice		100		
REGION 3	750	Flies <u>4/</u> , Lice		100		
STATE <u>3/</u>	1,220	Ear Tick, Flies <u>4/</u> , Lice		100		
<b>CLORSULON <u>5/</u></b>						
REGION 1	2,920	Confinement Flies, Grubs, Lice, Other	33	67		
REGION 2	460	Grubs, Lice, Pasture Flies	57	43		
REGION 3	950	Grubs, Lice, Pasture Flies	80	20		
STATE <u>3/</u>	4,330	Flies <u>4/</u> , Grubs, Lice, Other	56	44		
<b>COUMAPHOS</b>						
REGION 1	270	Flies <u>4/</u> , Grubs, Lice	15	73	12	
REGION 2	1,850	Flies <u>4/</u> , Grubs, Lice, Scabies	15	77	8	
REGION 3	2,750	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Other	21	71	8	
STATE <u>3/</u>	4,870	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	18	73	8	
<b>CYFLUTHRIN</b>						
REGION 1	80	Ear Tick, Lice, Pasture Flies	57	43		
REGION 2	170	Ear Tick, Lice, Pasture Flies	24	71	5	
REGION 3	200	Ear Tick, Flies <u>4/</u> , Lice	17	78	4	
STATE <u>3/</u>	440	Ear Tick, Flies <u>4/</u> , Lice	26	71	4	

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 and 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.)	Target Pests	Percent Effectiveness <u>1/</u>			
			Excell.	Satis.	Poor	No Eff.
<b>CYPERMETHRIN</b>						
REGION 2	<u>2/</u>					
REGION 3	<u>2/</u>					
STATE <u>3/</u>	20	Flies <u>4/</u>		100		
<b>DIMETHYLCYCLOPROPANECARBOXYLATE (Synergist)</b>						
REGION 3	<u>2/</u>					
STATE <u>3/</u>	<u>2/</u>					
<b>DIAZINON</b>						
REGION 1	350	Ear Tick, Flies <u>4/</u> , Lice	21	74	5	
REGION 2	2,120	Flies <u>4/</u> , Lice	11	82	7	
REGION 3	1,790	Ear Tick, Flies <u>4/</u> , Lice	20	72	8	
STATE <u>3/</u>	4,260	Ear Tick, Flies <u>4/</u> , Lice	17	76	7	
<b>DICHLORVOS</b>						
REGION 1	390	Flies <u>4/</u> , Grubs, Lice	10	70	20	
REGION 2	1,510	Flies <u>4/</u>	14	79	7	
REGION 3	160	Flies <u>4/</u> , Lice, Other	13	81	6	
STATE <u>3/</u>	2,060	Flies <u>4/</u> , Grubs, Lice, Other	13	78	10	
<b>DIMETHOATE</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/ Confinement and pasture flies were reported.

## ALL PESTICIDE USAGE ON CATTLE AND FACILITIES BY ACTIVE INGREDIENT BY REGION

Region	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
			Excell.	Satis.	Poor	No Eff.
<b>DIPROPYL ISOCINCHOMERATE (Synergist)</b>						
REGION 2	<u>2/</u>					
REGION 3	<u>2/</u>					
STATE <u>3/</u>	<u>2/</u>					
<b>FAMPHUR</b>						
REGION 1	1,340	Grubs, Lice, Pasture Flies	39	62		
REGION 2	3,820	Grubs, Lice, Pasture Flies	33	67		
REGION 3	1,010	Grubs, Lice, Pasture Flies, Other	43	57		
STATE <u>3/</u>	6,170	Grubs, Lice, Pasture Flies, Other	37	63		
<b>FENTHION</b>						
REGION 1	5,490	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Other	27	73		
REGION 2	15,030	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Other	29	68	2	2
REGION 3	2,890	Ear Tick, Flies <u>4/</u> , Grubs, Lice	30	65	6	
STATE <u>3/</u>	23,410	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Other	29	68	3	1
<b>FENVALERATE</b>						
REGION 1	20	Ear Tick, Lice, Pasture Flies	14	71	14	
REGION 2	70	Ear Tick, Flies <u>4/</u>	46	46	9	
REGION 3	50	Ear Tick, Lice, Pasture Flies	5	68	27	
STATE <u>3/</u>	140	Ear Tick, Flies <u>4/</u> , Lice	18	63	20	
<b>IVERMECTIN</b>						
REGION 1	5,090	Flies <u>4/</u> , Grubs, Lice, Scabies, Other	61	39		
REGION 2	6,330	Flies <u>4/</u> , Grubs, Lice, Scabies, Other	48	52	1	
REGION 3	4,180	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Other	48	51	1	
STATE <u>3/</u>	15,590	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	51	48	1	

<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 due to rounding. <sup>4/</sup> Confinement and pasture flies were reported.

## ALL PESTICIDE USAGE ON CATTLE AND FACILITIES BY ACTIVE INGREDIENT BY REGION

Region	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
			Excell.	Satis.	Poor	No Eff.
<b>LAMBDA CYHALOTHRIN</b>						
REGION 1	<u>2/</u>					
REGION 2	220	Ear Tick, Flies <u>4/</u> , Lice	26	74		
REGION 3	50	Ear Tick, Lice, Pasture Flies	23	62	15	
STATE <u>3/</u>	280	Ear Tick, Flies <u>4/</u> , Lice	26	69	6	
<b>LINDANE</b>						
REGION 2	<u>2/</u>					
STATE <u>3/</u>	<u>2/</u>					
<b>MALATHION</b>						
REGION 1	2,360	Flies <u>4/</u> , Grubs, Lice	25	69	6	
REGION 2	3,420	Flies <u>4/</u> , Grubs, Lice	23	55	23	
REGION 3	15,750	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	14	78	8	
STATE <u>3/</u>	21,530	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	19	69	12	
<b>METHOMYL</b>						
REGION 1	60	Flies <u>4/</u>	29	67	5	
REGION 2	30	Flies <u>4/</u>		100		
REGION 3	10	Flies <u>4/</u> , Lice		80	20	
STATE <u>3/</u>	100	Flies <u>4/</u> , Lice	16	76	8	
<b>METHOPRENE</b>						
REGION 1	<u>2/</u>					
REGION 2	50	Lice, Pasture Flies	27	73		
REGION 3	30	Grubs, Lice, Pasture Flies, Other	21	71	7	
STATE <u>3/</u>	90	Flies <u>4/</u> , Grubs, Lice, Other	24	70	6	

<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 due to rounding. <sup>4/</sup> Confinement and pasture flies were reported.

## ALL PESTICIDE USAGE ON CATTLE AND FACILITIES BY ACTIVE INGREDIENT BY REGION

Region	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>1/</u>			
			Excell.	Satis.	Poor	No Eff.
<b>METHOXYCHLOR</b>						
REGION 1	<u>2/</u>					
REGION 2	400	Grubs, Lice, Pasture Flies	17	67	17	
REGION 3	1,500	Flies <u>4/</u> , Lice	28	67	6	
STATE <u>3/</u>	2,450	Flies <u>4/</u> , Grubs, Lice	28	64	8	
<b>N-OCTYL BICYCLPHEPTENE DICARBOXIMIDE (Synergist)</b>						
REGION 1	<u>2/</u>					
REGION 2	<u>2/</u>					
REGION 3	<u>2/</u>					
STATE <u>3/</u>	10	Flies <u>4/</u> , Lice, Other	43	43		14
<b>NALED</b>						
REGION 1	<u>2/</u>					
REGION 2	<u>2/</u>					
STATE <u>3/</u>	<u>2/</u>					
<b>PERMETHRIN</b>						
REGION 1	1,010	Ear Tick, Flies <u>4/</u> , Grubs, Lice	22	75	3	
REGION 2	2,190	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	30	67	3	
REGION 3	3,400	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Other	21	71	7	1
STATE <u>3/</u>	6,610	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	25	70	5	★
<b>PHOSMET</b>						
REGION 1	<u>2/</u>					
REGION 2	<u>2/</u>					
REGION 3	<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/ Confinement and pasture flies were reported. ★ Less than 0.5 percent.

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

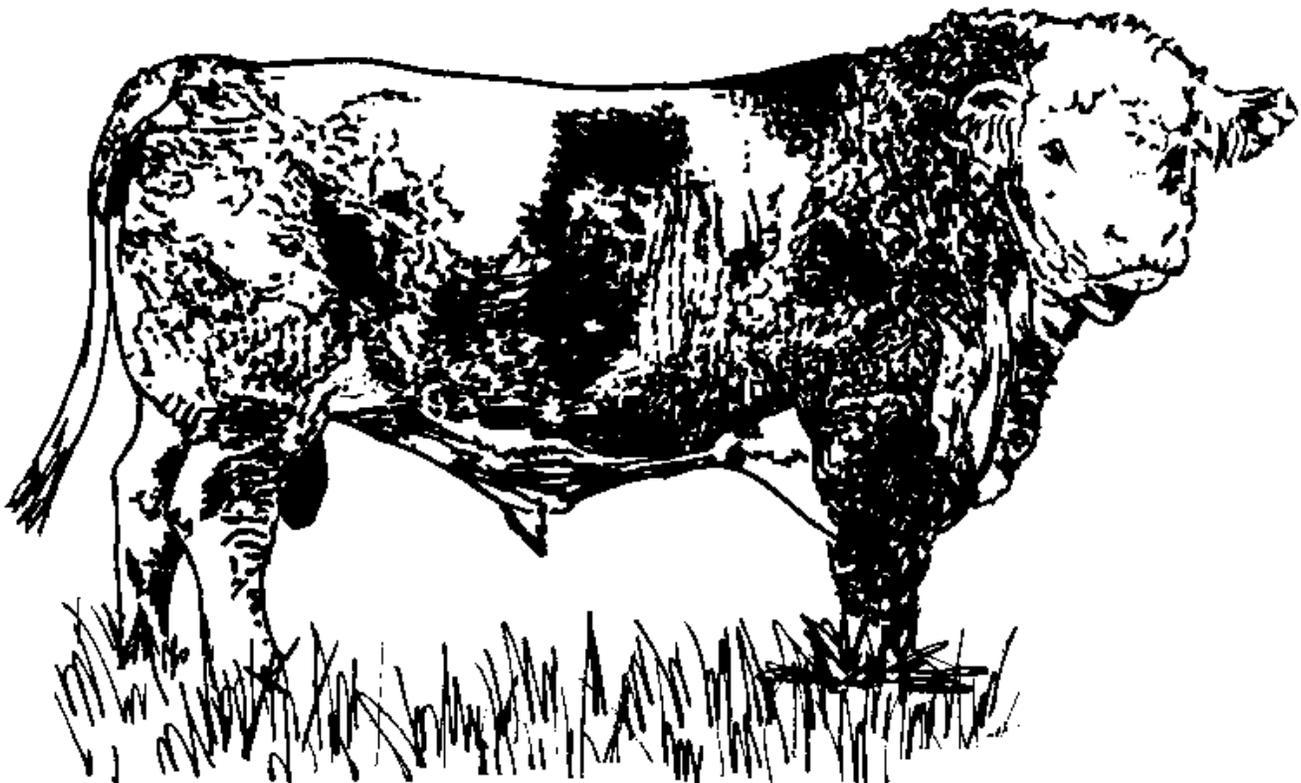
Region	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <u>1/</u>			
			Excell.	Satis.	Poor	No Eff.
<b>PIPERONYL BUTOXIDE (Synergist)</b>						
REGION 1	230	Ear Tick, Flies <u>4/</u> , Grubs, Lice	19	78		4
REGION 2	2,680	Ear Tick, Flies <u>4/</u> , Grubs, Lice	22	77	1	
REGION 3	1,520	Ear Tick, Flies <u>4/</u> , Grubs, Lice	26	63	11	
STATE <u>3/</u>	4,430	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	23	71	5	1
<b>PIRIMIPHOS METHYL</b>						
REGION 1	90	Ear Tick, Flies <u>4/</u> , Lice		92		8
REGION 2	480	Ear Tick, Lice, Pasture Flies	3	89	8	
REGION 3	230	Ear Tick, Lice, Pasture Flies	15	80		5
STATE <u>3/</u>	800	Ear Tick, Flies <u>4/</u> , Lice	6	87	4	3
<b>PYRETHRIN</b>						
REGION 1	★	Flies <u>4/</u>	20	60		20
REGION 2	20	Flies <u>4/</u> , Grubs, Lice	36	64		
REGION 3	10	Flies <u>4/</u> , Other	37	58	5	
STATE <u>3/</u>	30	Flies <u>4/</u> , Grubs, Lice, Other	34	60	3	3
<b>SULFUR</b>						
REGION 3	<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/ Confinement and 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.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
			Excell.	Satis.	Poor	No Eff.
<b>TETRACHLORVINPHOS</b>						
REGION 1	740	Grubs, Lice, Pasture Flies	20	60	20	
REGION 2	290	Flies <sup>3/</sup> , Lice	8	69	23	
REGION 3	1,090	Flies <sup>3/</sup> , Grubs, Lice, Other	14	79	7	
STATE <sup>2/</sup>	2,110	Flies <sup>3/</sup> , Grubs, Lice, Other	14	73	14	
<b>TRICHLORFON</b>						
REGION 1	3,380	Grubs, Lice, Pasture Flies	29	64	7	
REGION 2	2,250	Grubs, Lice, Pasture Flies	38	62		
REGION 3	1,110	Flies <sup>3/</sup> , Grubs, Lice	31	56	13	
STATE <sup>2/</sup>	6,740	Flies <sup>3/</sup> , Grubs, Lice	35	61	4	

<sup>1/</sup> May not add to 100 percent due to rounding. <sup>2/</sup> Combination is operation with more than 1 type of cattle operation (i.e. feedlot and cow/calf). <sup>3/</sup> Confinement and 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.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
			Excell.	Satis.	Poor	No Eff.
<b>CHLORPYRIFOS</b>						
COW/CALF	960	Ear Tick, Flies <u>4/</u> , Lice		100		
STOCKER/FEEDER	<u>2/</u>					
<b>CLORSULON <u>5/</u></b>						
COW/CALF	440	Grubs, Lice, Pasture Flies	57	43		
STOCKER/FEEDER	330	Grubs, Lice	60	40		
FEEDLOT	<u>2/</u>					
COMBINATION <u>3/</u>	<u>2/</u>					
<b>COUMAPHOS</b>						
COW/CALF	2,800	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	18	74	8	
DAIRY	40	Flies <u>4/</u> , Grubs, Lice	17	83		
STOCKER/FEEDER	730	Flies <u>4/</u> , Grubs, Lice	29	65	6	
COMBINATION <u>3/</u>	1,290	Ear Tick, Flies <u>4/</u> , Grubs, Lice	15	73	13	
FEEDLOT	<u>2/</u>					
<b>CYFLUTHRIN</b>						
COW/CALF	160	Ear Tick, Flies <u>4/</u> , Lice	28	69	3	
STOCKER/FEEDER	90	Lice, Pasture Flies	17	83		
COMBINATION <u>3/</u>	160	Lice, Pasture Flies	30	60	10	
DAIRY	<u>2/</u>					
FEEDLOT	<u>2/</u>					
<b>CYPERMETHRIN</b>						
COW/CALF	20	Flies <u>4/</u>		100		
<b>DIMETHYLCYCLOPROPANECARBOXYLATE (Synergist)</b>						
COW/CALF	<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 1 type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement and pasture flies were reported. <sup>5/</sup> 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.)	Target Pests	Percent Effectiveness <u>1/</u>			
			Excell.	Satis.	Poor	No Eff.
<b>DIAZINON</b>						
COW/CALF	950	Ear Tick, Flies <u>4/</u> , Lice	14	80	6	
DAIRY	70	Flies <u>4/</u>	40	60		
STOCKER/FEEDER	1,920	Flies <u>4/</u> , Lice	15	78	7	
COMBINATION <u>3/</u>	770	Ear Tick, Flies <u>4/</u>	20	68	12	
FEEDLOT	<u>2/</u>					
<b>DICHLORVOS</b>						
COW/CALF	280	Flies <u>4/</u> , Grubs, Lice, Other	12	77	12	
FEEDLOT	1,410	Flies <u>4/</u>		80	20	
STOCKER/FEEDER	40	Lice, Pasture Flies		100		
COMBINATION <u>3/</u>	320	Flies <u>4/</u> , Grubs	17	83		
DAIRY	<u>2/</u>					
<b>DIMETHOATE</b>						
COMBINATION <u>3/</u>	<u>2/</u>					
<b>DIPROPYL ISOCINCHOMERATE (Synergist)</b>						
COW/CALF	<u>2/</u>					
DAIRY	<u>2/</u>					
<b>FAMPHUR</b>						
COW/CALF	2,420	Grubs, Lice, Pasture Flies, Other	40	60		
COMBINATION <u>3/</u>	3,260	Grubs, Lice, Pasture Flies	30	70		
FEEDLOT	<u>2/</u>					
STOCKER/FEEDER	<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 1 type of cattle operation (i.e. feedlot and cow/calf). 4/ Confinement and 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.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
			Excell.	Satis.	Poor	No Eff.
<b>FENTHION</b>						
COW/CALF	4,040	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Other	28	69	3	1
DAIRY	60	Grubs, Lice, Pasture Flies	67	33		
FEEDLOT	9,400	Flies <u>4/</u> , Grubs, Lice	30	70		
STOCKER/FEEDER	3,010	Flies <u>4/</u> , Grubs, Lice	24	67	10	
COMBINATION <u>3/</u>	6,910	Ear Tick, Flies <u>4/</u> , Grubs, Lice	29	69	2	
<b>FENVALERATE</b>						
COW/CALF	70	Ear Tick, Flies <u>4/</u> , Lice	20	60	20	
COMBINATION <u>3/</u>	50	Flies <u>4/</u>	14	57	29	
DAIRY	<u>2/</u>					
FEEDLOT	<u>2/</u>					
STOCKER/FEEDER	<u>2/</u>					
<b>IVERMECTIN</b>						
COW/CALF	4,570	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	49	50	1	
DAIRY	90	Flies <u>4/</u> , Grubs, Lice, Other	25	75		
FEEDLOT	4,110	Flies <u>4/</u> , Grubs, Lice, Scabies, Other	50	50		
STOCKER/FEEDER	2,970	Grubs, Lice, Pasture Flies, Other	59	42		
COMBINATION <u>3/</u>	3,860	Flies <u>4/</u> , Grubs, Lice, Other	58	43		
<b>LAMBDA CYHALOTHRIN</b>						
COW/CALF	60	Ear Tick, Lice, Pasture Flies	19	76	5	
STOCKER/FEEDER	190	Flies <u>4/</u>	67	17	17	
COMBINATION <u>3/</u>	30	Pasture Flies	14	86		
FEEDLOT	<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 1 type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement and 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.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
			Excell.	Satis.	Poor	No Eff.
<b>LINDANE</b>						
COW/CALF	<u>2/</u>					
<b>MALATHION</b>						
COW/CALF	6,350	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Scabies, Other	19	71	10	
STOCKER/FEEDER	410	Flies <u>4/</u> , Lice	25	67	8	
COMBINATION <u>3/</u>	14,520	Flies <u>4/</u>	17	50	33	
DAIRY	<u>2/</u>					
FEEDLOT	<u>2/</u>					
<b>METHOMYL</b>						
DAIRY		10 Flies <u>4/</u>		71	29	
FEEDLOT		50 Flies <u>4/</u>	24	77		
COMBINATION <u>3/</u>		40 Flies <u>4/</u>		88	13	
COW/CALF	<u>2/</u>					
STOCKER/FEEDER	<u>2/</u>					
<b>METHOPRENE</b>						
COW/CALF		80 Grubs, Lice, Pasture Flies, Other	30	67	4	
FEEDLOT	<u>2/</u>					
STOCKER/FEEDER	<u>2/</u>					
COMBINATION <u>3/</u>	<u>2/</u>					
<b>METHOXYCHLOR</b>						
COW/CALF		1,510 Flies <u>4/</u> , Lice	27	67	7	
DAIRY		650 Flies <u>4/</u> , Grubs, Lice	38	50	13	
COMBINATION <u>3/</u>	<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 1 type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement and 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.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
			Excell.	Satis.	Poor	No Eff.
<b>N-OCTYL BICYCLPHEPTENE DICARBOXIMIDE (Synergist)</b>						
COW/CALF	<u>2/</u>					
DAIRY	<u>2/</u>					
COMBINATION <u>3/</u>	<u>2/</u>					
<b>NALED</b>						
FEEDLOT	<u>2/</u>					
COMBINATION <u>3/</u>	<u>2/</u>					
<b>PERMETHRIN</b>						
COW/CALF	1,760	Ear Tick, Flies <u>4/</u> , Grubs, Lice, Other	22	70	7	1
DAIRY	280	Flies <u>4/</u> , Grubs, Lice, Scabies	35	66		
STOCKER/FEEDER	440	Grubs, Lice, Pasture Flies	20	75	5	
COMBINATION <u>3/</u>	3,600	Flies <u>4/</u> , Grubs, Lice	29	69	2	
FEEDLOT	<u>2/</u>					
<b>PHOSMET</b>						
COW/CALF	<u>2/</u>					
STOCKER/FEEDER	<u>2/</u>					
<b>PIPERONYL BUTOXIDE (Synergist)</b>						
COW/CALF	1,930	Ear Tick, Flies <u>4/</u> , Grubs, Lice	23	71	6	1
DAIRY	310	Flies <u>4/</u> , Grubs, Lice	32	68		
STOCKER/FEEDER	880	Ear Tick, Flies <u>4/</u> , Grubs, Lice	25	60	15	
COMBINATION <u>3/</u>	1,260	Ear Tick, Flies <u>4/</u> , Grubs, Lice	21	76	2	

<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 1 type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement and pasture flies were reported.

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

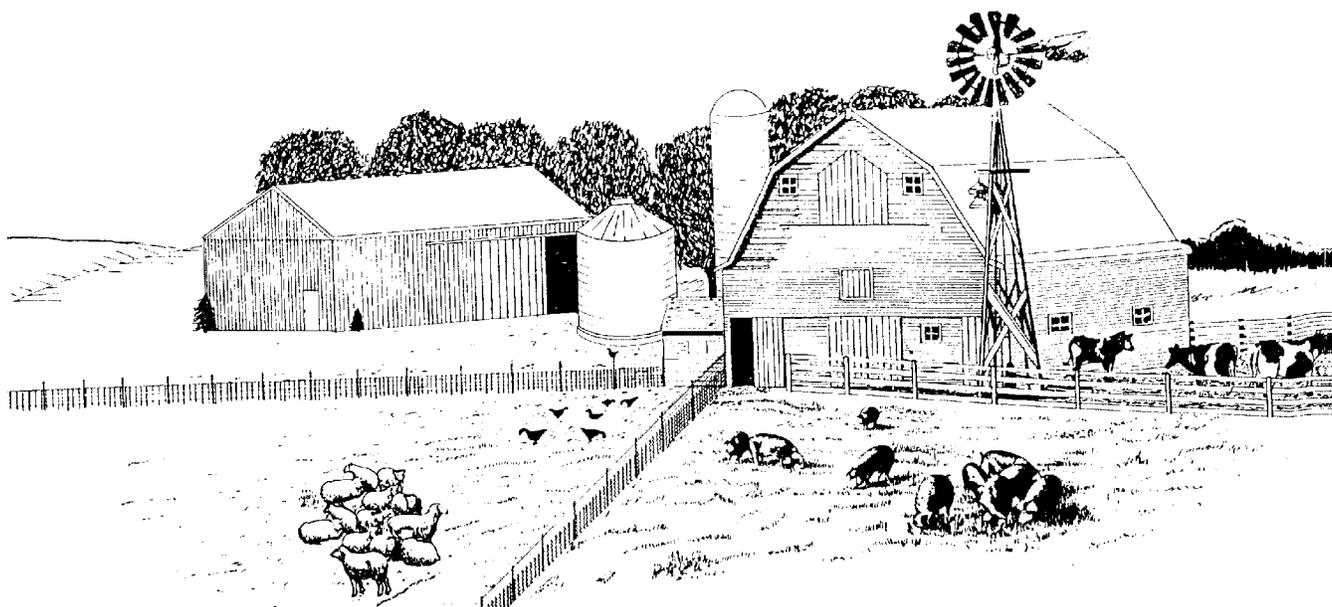
Type of Operation	Total Quantity Used (lbs.)	Target Pests	Percent Effectiveness <sup>1/</sup>			
			Excell.	Satis.	Poor	No Eff.
<b>PIRIMIPHOS METHYL</b>						
COW/CALF	470	Ear Tick, Lice, Pasture Flies	6	88	4	2
STOCKER/FEEDER	150	Lice, Pasture Flies		78	11	11
COMBINATION <sup>3/</sup>	150	Pasture Flies		100		
DAIRY	<u>2/</u>					
FEEDLOT	<u>2/</u>					
<b>PYRETHRIN</b>						
COW/CALF		★ Flies <u>4/</u> , Other	40	50		10
DAIRY		20 Flies <u>4/</u>	35	65		
COMBINATION <sup>3/</sup>		★ Flies <u>4/</u> , Lice	33	67		
STOCKER/FEEDER	<u>2/</u>					
<b>SULFUR</b>						
COW/CALF	<u>2/</u>					
STOCKER/FEEDER	<u>2/</u>					
<b>TETRACHLORVINPHOS</b>						
COW/CALF	1,780	Flies <u>4/</u> , Grubs, Lice, Other	13	74	13	
STOCKER/FEEDER	170	Lice, Pasture Flies		100		
DAIRY	<u>2/</u>					
COMBINATION <sup>3/</sup>	<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 1 type of cattle operation (i.e. feedlot and cow/calf). <sup>4/</sup> Confinement and 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.)	Target Pests	Percent Effectiveness <u>1/</u>			
			Excell.	Satis.	Poor	No Eff.
<b>TRICHLORFON</b>						
COW/CALF	1,760	Grubs, Lice, Pasture Flies	27	69	4	
COMBINATION <u>3/</u>	2,070	Grubs, Lice, Pasture Flies	36	64		
DAIRY	<u>2/</u>					
FEEDLOT	<u>2/</u>					
STOCKER/FEEDER	<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 1 type of cattle operation (i.e. feedlot and cow/calf).

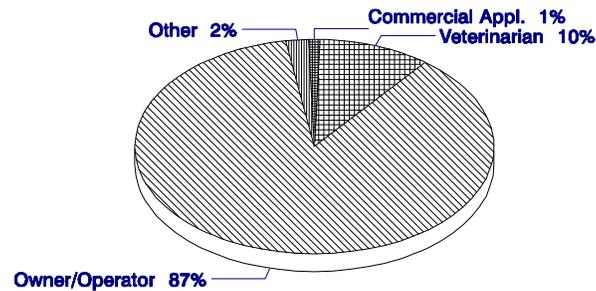


## APPLICATION OF CHEMICAL PEST CONTROLS

Owner/Operator	Veterinarian	Commercial Applicators	Other
----- PERCENT -----			
--			
<b>BY REGION</b>			
<b>REGION 1</b>			
86	9	4	1
<b>REGION 2</b>			
85	11	★	4
<b>REGION 3</b>			
88	10	★	2
<b>BY OPERATION TYPE</b>			
<b>COW/CALF</b>			
88	11	--	1
<b>DAIRY</b>			
94	5	--	1
<b>FEEDLOT</b>			
68	5	17	10
<b>STOCKER/FEEDER</b>			
85	8	1	6
<b>COMBINATION <u>1/</u></b>			
87	10	1	2
<b>STATE</b>			
87	10	1	2

1/ 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

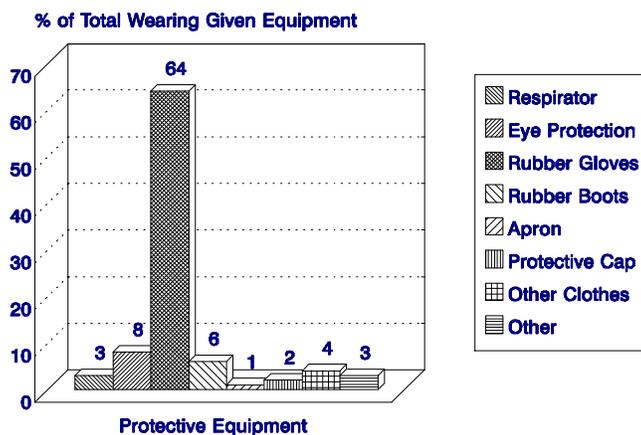


# PROTECTIVE EQUIPMENT WORN BY CHEMICAL APPLICATORS

Respirator	Eye Protection	Rubber Gloves	Rubber Boots	Apron	Protective Cap	Other Clothes	Other
----- PERCENT -----							
--							
<b>BY REGION</b>							
<b>REGION 1</b>							
4	14	69	8	2	5	8	5
<b>REGION 2</b>							
2	8	67	6	2	2	4	3
<b>REGION 3</b>							
4	5	59	5	1	1	2	3
<b>BY OPERATION TYPE</b>							
<b>COW/CALF</b>							
3	7	65	6	1	2	5	4
<b>DAIRY</b>							
2	7	45	9	2	5	5	--
<b>FEEDLOT</b>							
13	30	83	17	7	7	9	4
<b>STOCKER/FEEDER</b>							
3	6	54	2	--	1	3	3
<b>COMBINATION <u>1/</u></b>							
1	5	65	4	1	1	1	4
<b>STATE</b>							
3	8	64	6	1	2	4	3

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

## Protective Equipment Worn By Chemical Applicators

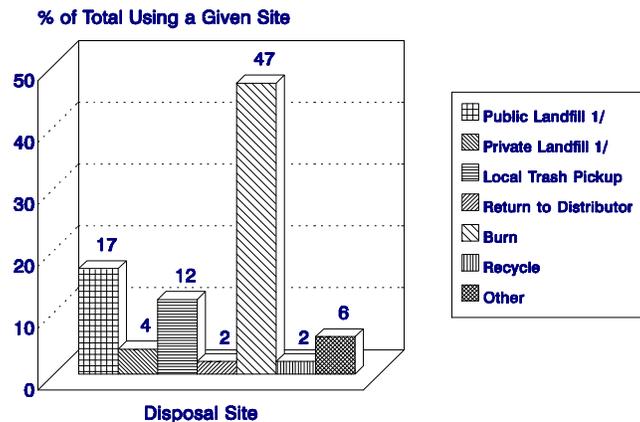


## DISPOSAL OF EMPTY PESTICIDE CONTAINERS

Public Landfill <u>1/</u>	Private Landfill <u>1/</u>	Local Trash Pickup	Return to Distributor	Burn	Recycle	Other
PERCENT						
--						
BY REGION						
REGION 1						
18	4	14	5	42	3	6
REGION 2						
19	6	8	1	49	2	7
REGION 3						
14	3	15	1	47	3	6
BY OPERATION TYPE						
COW/CALF						
15	3	11	1	50	3	7
DAIRY						
25	9	25	--	36	2	7
FEEDLOT						
24	9	28	17	15	2	2
STOCKER/FEEDER						
17	4	12	--	49	1	6
COMBINATION <u>2/</u>						
19	5	12	2	48	3	5
STATE						
17	4	12	2	47	2	6

1/ Direct delivery to landfill. 2/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf).

### Disposal of Empty Pesticide Containers



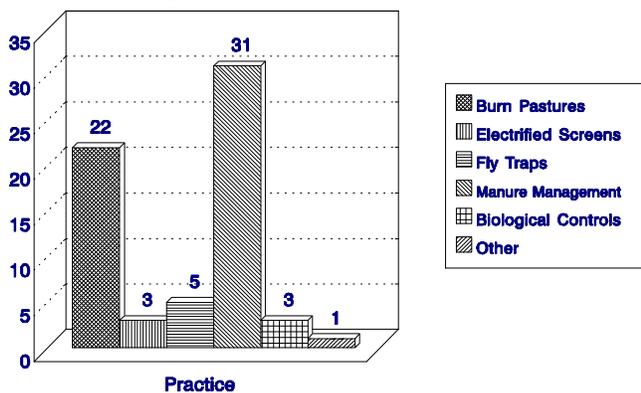
## TYPES OF NON-CHEMICAL PEST CONTROL USED

Burn Pastures	Electrified Screens	Fly Traps	Manure Management	Biological Controls	Other
----- PERCENT -----					
--					
<b>BY REGION</b>					
<b>REGION 1</b>					
2	3	5	39	9	3
<b>REGION 2</b>					
17	3	5	31	2	1
<b>REGION 3</b>					
37	2	4	28	★	1
<b>BY OPERATION TYPE</b>					
<b>COW/CALF</b>					
23	2	4	26	1	1
<b>DAIRY</b>					
9	16	11	59	5	2
<b>FEEDLOT</b>					
2	2	2	65	28	--
<b>STOCKER/FEDDER</b>					
3	--	5	27	1	--
<b>COMBINATION <u>1/</u></b>					
23	3	5	31	3	1
<b>STATE</b>					
22	3	5	31	3	1

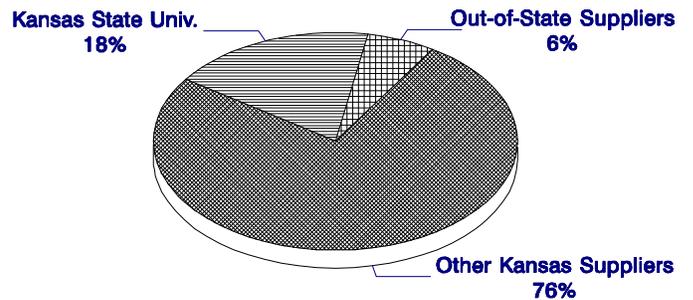
1/ Combination is operation with more than one type of cattle operation (i.e. feedlot and cow/calf).

### Types of Non-Chemical Pest Control Used

% of Total Using a Given Practice



### Purchases of Biocontrols

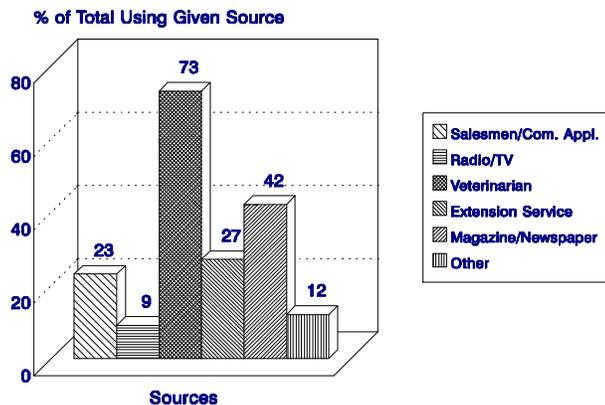


# SOURCES OF INFORMATION FOR CONTROLLING CATTLE PESTS

Salesmen/Commercial Appl.	Radio/TV	Veterinarian	Extension Service	Magazine/Newspaper	Other
----- PERCENT -----					
-					
<b>BY REGION</b>					
<b>REGION 1</b>					
22	7	73	22	38	9
<b>REGION 2</b>					
24	8	78	29	41	9
<b>REGION 3</b>					
22	12	69	28	45	12
<b>BY OPERATION TYPE</b>					
<b>COW/CALF</b>					
20	10	75	29	44	6
<b>DAIRY</b>					
30	9	70	25	32	18
<b>FEEDLOT</b>					
41	--	63	17	13	7
<b>STOCKER/FEEDER</b>					
28	10	65	26	45	8
<b>COMBINATION <sup>1/</sup></b>					
24	8	75	26	42	13
<b>STATE</b>					
23	9	73	27	42	12

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

Sources of Information for Controlling Cattle Pests



## INSECT PESTS CAUSING THE GREATEST ECONOMIC LOSS

Ear Tick	Flies <u>1/</u>	Grubs	Lice	Scabies	Other
----- PERCENT -----					
--					
BY REGION					
REGION 1					
★	53	16	30	★	★
REGION 2					
★	57	7	35	★	1
REGION 3					
4	61	9	26	--	1
BY OPERATION TYPE					
COW/CALF					
2	56	9	32	--	1
DAIRY					
--	80	5	15	--	--
FEEDLOT					
--	51	18	29	1	--
STOCKER/FEEDER					
1	61	10	29	--	--
COMBINATION <u>2/</u>					
1	58	10	31	★	--
STATE					
2	57	10	31	★	★

## MOST REPORTED PRODUCTS

Region	Most Reported	2nd Most Reported	3rd Most Reported
Region 1	Ivomec Pour-on	Ivomec Injectable	Lysoff Pour-On
Region 2	Ivomec Pour-On	Lysoff Pour-On	Co-Ral Animal Dust, Spotton Pour-On, Warbex Pour-On
Region 3	Ivomec Pour-On	Lysoff Pour-On	Co-Ral Animal Dust
Type of Operation	Most Reported	2nd Most Reported	3rd Most Reported
C/C	Ivomec Pour-On	Lysoff Pour-On	Co-Ral Animal Dust
Dairy	Ivomec Pour-On	Lysoff Pour-On	Terminator Ear Tags
Feedlot	Tiguvon Pour-On	Ivomec Pour-On	Golden Malrin Fly Bait
S/F	Ivomec Pour-On	Lysoff Pour-On	Dominator Ear Tags
Combination <u>2/</u>	Ivomec Pour-On	Lysoff Pour-On	Ivomec Injectable
State	Ivomec Pour-On	Lysoff Pour-On	Co-Ral Animal Dust

1/ Confinement and pasture flies were reported. 2/ 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

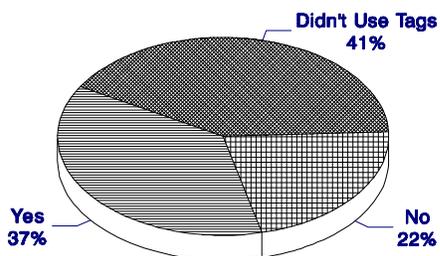
Yes	No	Didn't Use Tags
----- PERCENT ----- -----		
BY REGION		
REGION 1		
32	24	44
REGION 2		
40	21	39
REGION 3		
36	23	41
BY OPERATION TYPE		
COW/CALF		
36	23	42
DAIRY		
25	27	48
FEEDLOT		
23	34	43
STOCKER/FEEDER		
46	22	32
COMBINATION <u>1/</u>		
42	16	42
STATE		
37	22	41

### ROTATION OF OTHER CHEMICAL PEST CONTROLS

Yes	No
----- PERCENT ----- --	
BY REGION	
REGION 1	
28	72
REGION 2	
32	68
REGION 3	
35	65
BY OPERATION TYPE	
COW/CALF	
36	64
DAIRY	
18	82
FEEDLOT	
24	76
STOCKER/FEEDER	
21	79
COMBINATION <u>1/</u>	
34	66
STATE	
32	68

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

Rotation of Chemically Treated Ear Tags to Avoid Resistance



Rotation of Other Chemical Pest Controls to Avoid Resistance

