

**1980 Missouri
Beef Cattle Pesticide
Use Survey**



**University of Missouri-Columbia
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1980 Missouri Beef Cattle Pesticide Use Survey

Because of changing government regulation of many pesticides, development of new materials, and the general dynamic nature of pesticide use in the beef cattle industry, it is important to monitor such pesticide use patterns periodically.

In anticipation of major changes in pesticide use and other management practices among beef cattle producers, a voluntary survey was taken of Missouri cattlemen. This project was funded by University of Missouri Pesticide Impact Assessment formula-based funds and was a cooperative effort by personnel in the Departments of Animal Husbandry, Entomology and Extension Education.

Special thanks are extended to several hundred Missouri beef producers who voluntarily cooperated in this survey and to Mr. Don Bay and his staff of the Missouri Crop and Livestock Reporting Service (USDA) for their help in sampling. Dr. Gary Krause and the UMC Statistics Department provided valuable assistance. The survey forms were processed by Kathy Doisy and Lynne Rowden.

Lloyd Michael English

1980 MISSOURI
BEEF CATTLE PESTICIDE USE SURVEY

A Cooperative Function of
University of Missouri - Columbia
Pesticide Impact Assessment Program

Department of Entomology

Lloyd Micheal English
Pesticide Impact Assessment
Coordinator

Robert D. Hall
Assistant Professor

Flernoy G. Jones
Associate Professor

Department of Animal Husbandry

James E. Ross
Professor

Department of Extension Education

John G. Gross
Chairman

Background:

Beef cattle production is a very important Missouri industry. Cattle and calves on Missouri farms totaled 5.55 million head on January 1, 1979. Missouri ranked fifth in cattle numbers, behind Texas, Iowa, Nebraska and Kansas. The estimated value of all cattle and calves on Missouri farms January 1, 1979 was 2.08 billion dollars. The State's inventory of 2.56 million cows and heifers that have calved was second only to Texas. The number of calves born during 1978 totaled 2.45 million.

The relative importance and the generally dynamic nature of the beef industry points out the need to monitor production needs and patterns, including pesticide use. A survey was undertaken to ascertain information concerning beef cattle and pesticide use.

General Information:

During February 1980, 3,900 survey forms were mailed to a random selection of Missouri beef cattle producers throughout Missouri. The survey forms (see Figure 1) were designed to determine beef cattle production patterns, pesticide use on beef cattle and future informational needs of beef cattle producers. Of the 3,900 forms mailed out approximately 550 completed survey forms were returned by producers. Of the returned forms approximately 75.0 percent were directly applicable or sufficiently complete to be of benefit in the analysis of survey data.

The average herd size reported was 35.5 cows. The producers reported an 84.0 percent calving percentage with an average weaning weight of 440 pounds (Table 1). Over 89.0 percent of the producers reported owning some grade cattle while 14.7 percent reported owning some purebred stock and 9.8 percent owned both.

Fifty percent of the producers reported worming their cows while 57.0 percent of the producers wormed their calves (Table 2). Seventy-one percent of the producers said they crossbred cattle, 13.0 percent of the respondents reported using artificial insemination while only 9.0 percent said they were involved in production testing.

Beef Cattle External Pests:

The cattle producers were asked to rank eight categories of beef cattle tation they employed to control certain external pest in their beef cattle operation. Tables 4 through 11 are a compilation of these responses. Table 12 is a summary of all responses to these questions. Famphur and toxaphene were the most widely used materials, and spray treatments appeared to be the choice for method of application. However, differences were noted in control measures for different pest species and areas of the state in which they were used.

Cost of Pest Control:

Over 60 percent of the producers paid less than \$3.00 per head to control pests associated with their cattle operations (see Table 13). The state average cost was \$3.41 per head, and two producers reported paying between

Dear Friend:

This survey is to collect information that will help us in planning Extension programs for beef cattle producers in Missouri. Please help us. Individual replies are confidential, only overall summary data will be published.

The questionnaire requires no postage. Fold so the return address is on the outside. Thanks so much for your help.

Very sincerely,
James E. Ross
James E. Ross
State Beef Cow-Calf Specialist

-
1. County _____
 2. Number of:
 - Purebred cows _____
 - Grade cows _____
 - Calves weaned from above cows _____
 - No. calves born in:
 - Jan-Mar _____
 - April-Aug _____
 - Sept-Dec _____
 3. Average calf weaning wt _____ lbs
 4. Do you worm cows? Yes _____ No _____
If Yes ___ 1 time/year ___ 2 times or more/year
 5. Do you worm calves? Yes _____ No _____
If Yes ___ 1 time/year ___ 2 times or more/year
 6. Do you crossbreed? Yes _____ No _____
 7. Artificial Insemination? Yes _____ No _____
 8. Production test? Yes _____ No _____
 9. Use identification ear tag? Yes _____ No _____
10. In the next 5 years, which of the subject areas listed below would you like to see extra effort given to which would benefit the cattle business. Rank 1-2-3-4, etc. with 1 being most important, 10 least important.
- | | |
|----------------------------------|-------------------------------------|
| _____ Buildings and equipment | _____ Nutrition and feeding |
| _____ Cattle health | _____ Pasture and forage production |
| _____ External parasites | _____ Production management system |
| _____ Finishing cattle | _____ Production testing |
| _____ Marketing of feeder cattle | _____ Reproduction |
11. Rank the following pests in order of importance to your operations:
- | | | | |
|------------------|-----------------------------------|--------------------|-------------------|
| _____ Ticks | _____ Houseflies around barn area | _____ Horn flies | _____ Cattle lice |
| _____ Face flies | _____ Stable flies | _____ Cattle grubs | _____ Other _____ |
12. What insecticides do you use most often in your cattle operation? How applied (check).
- a. Louse control _____ Spray _____ Dust _____ Spot on _____ Pour on _____ Back rubber
 - b. Fly control on animals _____ Spray _____ Dust _____ Ear tag _____ Face mop _____ Feed additive or mineral block
 - c. Fly control around barns _____ Spray _____ Bait _____ Electric fly grid
 - d. Grub control _____ Spray _____ Dust _____ Spot on _____ Pour on _____ Feed additives or mineral block
13. How much do you estimate you spend per head per year for pest control in your cattle operation? \$ _____
14. Do you consider disposal of unused pesticides and containers a problem? Yes _____ No _____
15. Do you use devices other than chemical control methods for insect control in your cattle operation? Yes _____ No. If yes, please specify _____.
16. Other comments you may have about pests and pest control in beef cattle operations. _____

_____.

Figure 1 - Survey Form for 1980 Missouri Beef Cattle Pesticide Use Survey

Table 1 - 1980 Missouri Beef
Cattle Pesticide Use Survey
State Wide Calving Information

Calving Season	Number of Responding Producers	Average # of calves born/producer	% Calved per period
January - March	260	20	41
April - August	252	20	40
September - December	195	12	19

The average weaning weight was 440 lbs. and there was an 84.0% calving percentage.

\$15-\$20 per head for pest control on their cattle. These two producers, had only very few cattle and included internal as well as external pest control in their cost. The largest grouping of producers paid between \$0.51-\$1.00 per head for pest control.

Pesticide Disposal:

With new government regulations concerning pesticide waste disposal, the disposition of excess pesticide mixture, rinseates and containers is becoming increasingly more difficult. To ascertain how Missouri producers viewed this problem, they were asked if they considered disposal of unused pesticide and pesticide containers a problem. Less than 20 percent of 350 respondents viewed this as a problem in their operations. Tabulated results of the responses to this question may be found in Table 14.

Areas for Future Emphasis:

Producers were asked to rank ten production areas extension should place the most emphasis on in the next five years (see Table 15). Pasture and forage production ranked as the area in which the most emphasis should be placed, while production testing ranked tenth. It should be pointed out, however, that all of these areas are probably of high importance to cattle producers and if a select group (ex: purebred cattle producers) was surveyed the results might be quite different.

Table 2 - 1980 Missouri Beef
Cattle Pesticide Use Survey
Profile of Responses to Questions
on Production Methods

Question	Number of Responses			
	Yes	%	No	%
Do you worm cows?	<u>177</u>	<u>50</u>	175	50
One time a year.	135	79		
Two times a year.	36	21		
Do you worm calves?	<u>204</u>	<u>57</u>	151	43
One time a year.	158	81		
Two times a year.	36	19		
Do you crossbreed?	253	71	104	29
Use artificial insemination?	46	13	304	87
Production test?	32	9	311	91
Use identification ear tags?	171	49	181	51

Remarks:

The cattle producers were asked for any additional comments they might have relative to pesticide use and cattle production. Fifty-five respondents chose to make additional comments. These comments, with a minimal amount of editing are listed on pages 23 through 25.

Table 3 - 1980 Missouri Beef Cattle Pesticide Use Survey
 Ranking⁺ of Beef Cattle Pests in Missouri

	State wide		Ozark counties ¹		Other counties ²	
	# responses	mean ranking	# responses	mean ranking	# responses	mean ranking
Face flies	350	1.44	160	1.61	190	1.29
Horn flies	288	2.94	127	3.01	161	2.89
Cattle lice	303	3.10	135	2.93	168	3.24
Cattle grubs	282	3.82	120	3.93	162	3.74
Ticks	236	4.58	120	3.38	116	5.79
Stable flies	220	4.68	93	4.97	127	4.46
House flies	227	4.69	92	4.99	135	4.48
Other pests	39	6.36	15	5.53	24	6.88

⁺ Ranking from 1 to 8 in decreasing order of importance.

1/ Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Phelps, Polk, Pulaski, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

2/ Other counties include all Missouri counties not listed in footnote #1.

Table 4 - 1980 Missouri Beef Cattle Pesticide Use Survey
 Insecticides Used for Fly Control on Beef Cattle

Insecticide (common name)	State wide		Ozark counties ¹		Other counties ²	
	# responses	% responses	# responses	% responses	# responses	% responses
toxaphene	20	39.2	15	48.4	5	25.0
methoxychlor	13	25.5	8	25.8	5	25.0
ronnel	4	7.8	1	3.2	3	15.0
famphur	3	5.9	3	9.7	0	0.0
crotoxyphos	2	3.9	1	3.2	1	5.0
malathion	2	4.0	1	3.2	1	5.0
tetrachlorvinphos	2	4.0	1	3.2	1	5.0
carbaryl	1	2.0	1	3.2	0	0.0
coumaphos	1	2.0	0	0.0	1	5.0
isoprocab	1	2.0	0	0.0	1	5.0
pyrethrins	1	2.0	0	0.0	1	5.0
thidiphenylamine	1	2.0	0	0.0	1	5.0
TOTAL	51	100.0	31	100.0	20	100.0

1/ Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Ozark, Phelps, Polk, Pulaske, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

2/ Other counties include all Missouri counties not listed in footnote #1.

Table 5 - 1980 Missouri Beef Cattle Pesticide Use Survey
Insecticide Application Methods for Fly Control on Beef Cattle

Method	State wide		Ozark counties ¹		Other counties ²	
	# responses	% responses	# responses	% responses	# responses	% responses
1. Spray	62	18.2	36	23.8	26	13.7
2. Dust	71	20.8	39	25.8	32	16.8
3. Ear tag	6	1.8	1	0.7	5	2.6
4. Face Mop	28	8.2	11	7.3	17	8.9
5. Feed additive	51	15.0	23	15.2	28	14.7
6. Spray/dust ^{3/}	16	4.7	5	3.3	11	5.8
7. Spray/face mop	9	2.6	5	3.3	4	2.1
8. Spray/feed additive	21	6.2	5	3.3	16	8.4
9. Dust/ear tag	4	1.2	2	1.3	2	1.1
10. Dust/face mop	5	1.5	4	2.6	1	0.5
11. Dust/feed additive	26	7.6	11	7.3	15	7.9
12. Ear tag/feed additive	1	0.3	0	0.0	1	0.5
13. Face mop/feed additive	19	5.6	3	2.0	16	8.4
14. Spray/dust/face mop	3	0.9	1	0.7	2	1.1
15. Spray/dust/feed additive	7	2.1	3	2.0	4	2.1
16. Spray/ear tag/feed "	1	0.3	1	0.7	0	0.0
17. Spray/face mop/feed "	3	0.9	1	0.7	2	1.1
18. Dust/ear tag/face mop	1	0.3	0	0.0	1	0.5
19. Dust/ear tag/ feed additive	3	0.9	0	0.0	3	1.6
20. Dust/face mop/ feed additive	4	1.2	0	0.0	4	2.1
TOTAL	341	100.0	151	100.0	190	100.0

1/ Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Ozark, Phelps, Polk, Pulaske, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

2/ Other counties include all Missouri counties not listed in footnote #1.

3/ Respondents reporting a combination of application methods.

Table 6 - 1980 Missouri Beef Cattle Pesticide Use Survey
 Insecticides Used for Fly Control Around Barns

Insecticide (common name)	State wide		Ozark counties ¹		Other counties ²	
	# responses	% responses	# responses	% responses	# responses	% responses
toxaphene	8	44.4	7	53.9	1	20.0
methoxychlor	3	16.7	2	15.4	1	20.0
malathion	2	11.1	1	7.7	1	20.0
ronnel	2	11.1	1	7.7	1	20.0
coumaphos	1	5.6	0	0.0	1	20.0
crotoxyphos	1	5.6	1	7.7	0	0.0
famphur	1	5.6	1	7.7	0	0.0
TOTAL	18	100.0	13	100.0	5	100.0

1/ Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Ozark, Phelps, Polk, Pulaske, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

2/ Other counties include all Missouri counties not listed in footnote #1.

Table 7 - 1980 Missouri Beef Cattle Pesticide Use Survey
 Insecticide Application Methods for Fly Control Around Barns

Method	State wide		Ozark counties ¹		Other counties ²	
	# responses	% responses	# responses	% responses	# responses	% responses
1. Spray	97	58.4	45	66.2	52	53.1
2. Bait	48	28.9	15	22.1	33	33.7
3. Electric fly grid	4	2.4	2	2.9	2	2.0
4. Spray/bait ^{3/}	11	6.6	5	7.4	6	6.1
5. Spray/electric fly grid	3	1.8	0	0.0	3	3.1
6. Bait/electric fly grid	1	0.6	0	0.0	1	1.0
7. Spray/bait/electric fly grid ²		<u>1.2</u>	<u>1</u>	<u>1.5</u>	<u>1</u>	<u>1.0</u>
TOTAL	166	100.0	68	100.0	98	100.0

^{1/} Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Ozark, Phelps, Polk, Pulaski, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

^{2/} Other counties include all Missouri counties not listed in footnote #1

^{3/} Respondents reporting a combination of control methods.

Table 8 - 1980 Missouri Beef Cattle Pesticide Use Survey
Insecticides Used for Louse Control on Beef Cattle

Insecticide (common name)	State wide		Ozark counties ¹		Other counties ²	
	# responses	% responses	# responses	% responses	# responses	% responses
famphur	13	34.2	12	44.4	1	9.1
toxaphene	10	26.3	8	29.6	2	18.2
coumaphos	5	13.2	2	7.4	3	27.3
ronnel	3	7.9	1	3.7	2	18.2
carbaryl	2	5.3	2	7.4	0	0.0
isoproc carb	1	2.6	0	0.0	1	9.1
lindane	1	2.6	1	3.7	0	0.0
malathion	1	2.6	1	3.7	0	0.0
methoxychlor	1	2.6	0	0.0	1	9.1
trichlorfon	<u>1</u>	<u>2.6</u>	<u>0</u>	<u>0.0</u>	<u>1</u>	<u>9.1</u>
TOTAL	38	100.0	27	100.0	11	100.0

1/ Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Ozark, Phelps, Polk, Pulaski, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

2/ Other counties include all Missouri counties not listed in footnote #1.

Table 9 - 1980 Missouri Beef Cattle Pesticide Use Survey
 Insecticide Application Methods for Louse Control on Beef Cattle

Method	State wide		Ozark counties ¹		Other counties ²	
	# responses	% responses	# responses	% responses	# responses	% responses
1. Spray	34	10.8	22	14.8	12	7.3
2. Dust	55	17.5	24	16.1	31	18.8
3. Spot on	9	2.9	2	1.3	7	4.2
4. Pour on	77	24.5	38	25.5	39	23.6
5. Back rubber	48	15.3	23	15.4	25	15.2
6. Spray/dust ^{3/}	3	1.0	1	0.7	2	1.2
7. Spray/spot on	2	0.6	2	1.3	0	0.0
8. Spray/pour on	5	1.6	2	1.3	3	1.8
9. Spray/back rubber	9	2.9	4	2.7	5	3.0
10. Dust/spot on	5	1.6	1	0.7	4	2.4
11. Dust/pour on	10	3.2	5	3.4	5	3.0
12. Dust/back rubber	24	7.6	12	8.1	12	7.3
13. Spot on/back rubber	4	1.3	1	0.7	3	1.8
14. Pour on/back rubber	18	5.7	7	4.7	11	6.7
15. Spray/dust/pour on	1	0.3	0	0.0	1	0.6
16. Spray/dust/back rubber	2	0.6	2	1.3	0	0.0
17. Spray/pour on/back rubber	1	0.3	1	0.7	0	0.0
18. Dust/spot on/back rubber	1	0.3	1	0.7	0	0.0
19. Dust/pour on/back rubber	6	1.9	1	0.7	5	3.0
TOTAL	314	100.0	149	100.0	165	100.0

^{1/} Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Ozark, Phelps, Polk, Pulaske, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

^{2/} Other counties include all Missouri counties not listed in footnote #1.

^{3/} Respondents reporting a combination of application methods.

Table 10 - 1980 Missouri Beef Cattle Pesticide Use Survey

Insecticides Used for Grub Control on Beef Cattle

Insecticide (common name)	State wide		Ozark counties ¹		Other counties ²	
	# responses	% responses	# responses	% responses	# responses	% responses
famphur	17	51.5	16	69.6	1	10.0
ronnel	6	18.2	2	8.7	4	40.0
toxaphene	3	9.1	2	8.7	1	10.0
malathion	2	6.0	1	4.3	0	0.0
trichlorfon	2	6.0	0	0.0	2	20.0
carbaryl	1	3.0	1	4.3	0	0.0
coumaphos	1	3.0	0	0.0	1	10.0
crotoxyphos	1	3.0	1	4.3	0	10.0
TOTAL	33	100.0	23	100.0	10	100.0

^{1/} Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Phelps, Polk, Pulaski, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

^{2/} Other counties include all Missouri counties not listed in footnote #1.

Table 11 - 1980 Missouri Beef Cattle Pesticide Use Survey
 Insecticide Application Methods for Grub Control on Beef Cattle

Method	State wide		Ozark counties ¹		Other counties ²	
	# responses	% responses	# responses	% responses	# responses	% responses
1. Spray	16	6.0	6	5.0	10	6.8
2. Dust	35	13.2	20	16.8	15	10.2
3. Spot on	12	4.5	5	4.2	7	4.8
4. Pour on	110	41.4	55	46.2	55	37.4
5. Feed Additive	50	18.8	15	12.6	35	23.8
6. Spray/pour on ^{3/}	1	0.4	1	0.8	0	0.0
7. Spray/feed additive	2	0.8	0	0.0	2	1.4
8. Dust/pour on	5	1.9	2	1.7	3	2.0
9. Dust/feed additive	7	2.6	1	0.8	6	4.1
10. Spot on/pour on	1	0.4	1	0.8	0	0.0
11. Spot on/feed additive	1	0.4	1	0.8	0	0.0
12. Pour on/feed additive	18	6.8	9	7.6	9	6.1
13. Spray/dust/spot on	1	0.4	0	0.0	1	0.7
14. Spray/dust/pour on	1	0.4	0	0.0	1	0.7
15. Spray/dust/feed additive	2	0.8	1	0.8	1	0.7
16. Spray/pour on/feed additive	2	0.8	1	0.8	1	0.7
17. Dust/pour on/feed additive	2	0.8	1	0.8	1	0.7
TOTAL	266	100.0	119	100.0	147	100.0

1/ Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Ozark, Phelps, Polk, Pulaski, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

2/ Other counties include all Missouri counties not listed in footnote #1.

3/ Respondents reporting a combination of application methods.

Table 12 - 1980 Missouri Beef Cattle Pesticide Use Survey
Pesticide Use on Beef Cattle

		toxaphene	famphur	ronnel	methoxychlor	coumaphos	malathion
Louse Control	Ozark counties ¹	# responses	8	12	1	0	1
		% responses	29.6	44.4	3.7	0.0	3.7
		% state wide resp.	21.1	31.6	2.6	0.0	0.0
Louse Control	Other counties ²	# responses	2	1	2	1	0
		% responses	18.2	9.1	18.2	9.1	0.0
		% state wide resp.	5.3	2.6	5.3	2.6	0.0
	TOTAL % STATE WIDE RESPONSES	26.3	34.2	7.9	2.6	13.2	2.6
Fly control on animals	Ozark counties ¹	# responses	15	3	1	8	1
		% responses	48.4	9.7	3.2	25.8	3.2
		% state wide resp.	29.4	5.9	2.0	15.7	2.0
Fly control on animals	Other counties ²	# responses	5	0	3	5	1
		% responses	25.0	0.0	15.0	25.0	5.0
		% state wide resp.	9.8	0.0	5.9	9.8	2.0
	TOTAL % STATE WIDE RESPONSES	39.2	5.9	7.8	25.5	2.0	4.0
Fly control around barn areas	Ozark counties ¹	# responses	7	1	1	2	1
		% responses	53.9	7.7	7.7	15.4	5.6
		% state wide resp.	38.9	5.6	5.6	11.1	5.6
Fly control around barn areas	Other counties ²	# responses	1	0	1	1	1
		% responses	20	0.0	20.0	20.0	20.0
		% state wide resp.	5.6	0.0	5.6	5.6	5.6
	TOTAL % STATE WIDE RESPONSES	44.5	5.6	11.1	16.7	5.6	11.1
Grub control	Ozark counties ¹	# responses	2	16	2	0	1
		% responses	8.7	69.6	8.7	0.0	4.3
		% state wide resp.	6.1	48.5	6.1	0.0	3.0
Grub control	Other counties ²	# responses	1	1	4	0	1
		% responses	10.0	10.0	40.0	0.0	10.0
		% state wide resp.	3.0	3.0	12.1	0.0	3.0
	TOTAL % STATE WIDE RESPONSES	9.1	51.5	18.2	0.0	3.0	6.0

Table 12 - Continued

Table 12 - Continued

		crotoxyphos	trichlorfon	carbaryl	isoprocarb	tetrachlor- vinphos
Louse Control	Ozark counties ¹	# responses % responses % state wide resp.	0 0.0 0.0	2 7.4 5.3	0 0.0 0.0	0 0.0 0.0
	Other counties ²	# responses % responses % state wide resp.	0 0.0 0.0	0 0.0 0.0	1 9.1 2.6	0 0.0 0.0
	TOTAL % STATE WIDE RESPONSES		0.0	5.3	2.6	2.6
Fly control on animals	Ozark counties ¹	# responses % responses % state wide resp.	1 3.2 2.0	1 3.2 2.0	0 0.0 0.0	1 3.2 2.0
	Other counties ²	# responses % responses % state wide resp.	1 5.0 2.0	0 0.0 0.0	0 0.0 0.0	1 5.0 2.0
	TOTAL % STATE WIDE RESPONSES		3.9	2.0	0.0	2.0
Fly control around barn areas	Ozark counties ¹	# responses % responses % state wide resp.	1 7.7 5.6	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0
	Other counties ²	# responses % responses % state wide resp.	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0
	TOTAL % STATE WIDE RESPONSES		5.6	0.0	0.0	0.0
Grub control	Ozark counties ¹	# responses % responses % state wide resp.	1 4.3 3.0	1 4.3 3.0	0 0.0 0.0	0 0.0 0.0
	Other counties ²	# responses % responses % state wide resp.	0 0.0 0.0	0 20.0 6.0	2 0.0 0.0	0 0.0 0.0
	TOTAL % STATE WIDE RESPONSES		3.0	6.0	3.0	0.0

Table 12 - Continued

Table 12 - Continued

		lindane	thiodiphenyl- amine	pyrethrins	TOTALS
Louse Control	Ozark counties ¹	# responses % responses % state wide resp.	1 0.0 0.0	0 0.0 0.0	27 100% 71%
	Other counties ²	# responses % responses % state wide resp.	0 0.0 0.0	0 0.0 0.0	11 100% 29%
	TOTAL % STATE WIDE RESPONSES	2.6	0.0	0.0	100%
Fly control on animals	Ozark counties ¹	# responses % responses % state wide resp.	0 0.0 0.0	0 0.0 0.0	31 100% 61%
	Other counties ²	# responses % responses % state wide resp.	1 5.0 2.0	1 5.0 2.0	20 100% 30%
	TOTAL % STATE WIDE RESPONSES	0.0	2.0	2.0	100%
Fly control around barn areas	Ozark counties ¹	# responses % responses % state wide resp.	0 0.0 0.0	0 0.0 0.0	13 100% 72%
	Other counties ²	# responses % responses % state wide resp.	0 0.0 0.0	0 0.0 0.0	5 100% 28%
	TOTAL % STATE WIDE RESPONSES	0.0	0.0	0.0	100%
Grub control	Ozark counties ¹	# responses % responses % state wide resp.	0 0.0 0.0	0 0.0 0.0	23 100% 70%
	Other counties ²	# responses % responses % state wide resp.	0 0.0 0.0	0 0.0 0.0	10 100% 30%
	TOTAL % STATE WIDE RESPONSES	0.0	0.0	0.0	100%

^{1/} Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Ozark, Phelps, Polk, Pulaski, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

^{2/} Other counties include all Missouri counties not listed in footnote #1.

Table 13 - 1980 Missouri Beef Cattle Pesticide Use Survey
The Cost of Pest Control on Beef Cattle

dollars/head	State wide		Ozark counties ¹		Other counties ²	
	# responses	% responses	# responses	% responses	# responses	% responses
\$0.00 - 0.50	18	5.6	12	8.1	6	3.7
0.51 - 1.00	54	17.1	27	18.0	27	16.7
1.01 - 1.50	25	7.8	8	5.4	17	10.4
1.51 - 2.00	47	14.9	19	12.6	28	17.2
2.01 - 2.50	16	5.1	11	7.3	5	3.1
2.51 - 3.00	34	10.8	14	9.3	20	12.3
3.01 - 3.50	7	2.2	4	2.7	3	1.8
3.51 - 4.00	17	5.4	9	6.1	8	4.9
4.01 - 4.50	4	1.3	4	2.7	0	0.0
4.51 - 5.00	44	14.1	21	13.9	23	14.2
5.01 - 5.50	1	0.3	1	0.7	0	0.0
5.51 - 6.00	7	2.2	5	3.3	2	1.2
6.01 - 6.50	1	0.3	0	0.0	1	0.6
6.51 - 7.00	7	2.2	2	1.3	5	3.1
7.01 - 7.50	5	1.6	2	1.3	3	1.9
7.51 - 8.00	2	0.6	0	0.0	2	1.2
8.01 - 8.50	2	0.6	1	0.7	1	0.6
8.51 - 9.00	0	0.0	0	0.0	0	0.0
9.01 - 9.50	0	0.0	0	0.0	0	0.0
9.51 - 10.00	19	6.1	8	5.3	11	6.8
10.01 - 10.50	1	0.3	1	0.7	0	0.0
15.01 - 20.00	2	0.6	2	1.4	0	0.0
TOTAL	313	100.0	151	100.0	162	100.0
Mean	\$3.41		\$3.44		\$3.38	

1/ Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Ozark, Phelps, Polk, Pulaski, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

2/ Other counties include all Missouri counties not listed in footnote #1.

Table 14 - 1980 Missouri Beef
Cattle Pesticide Use Survey

Pesticide Disposal

	State wide		Ozark counties ¹		Other counties ²	
	# responses	% responses	# responses	% responses	# responses	% responses
14. Do you consider disposal of unused pesticides and containers a problem?						
YES	63	18.0	25	15.7	38	19.9
NO	287	82.0	134	84.3	153	80.1
TOTAL	350	100.0	159	100.0	191	100.0

1/ Ozark counties include Barry, Barton, Benton, Bollinger, Butler, Camden, Carter, Cedar, Christian, Crawford, Dade, Dallas, Dent, Douglas, Greene, Hickory, Howell, Iron, Jasper, Laclede, Lawrence, McDonald, Madison, Maries, Miller, Morgan, Newton, Oregon, Ozark, Phelps, Polk, Pulaski, Reynolds, Ripley, St. Clair, St. Francois, Shannon, Stone, Taney, Texas, Washington, Wayne, Webster and Wright.

2/ Other counties include all Missouri counties not listed in footnote #1.

Table 15 - 1980 Missouri Beef
Cattle Pesticide Use Survey
Ranking⁺ by Respondents of Production
Areas for Future Emphasis

Producers were asked to rank ten production areas on the basis of which areas extension should put the most emphasis on in the next five years. They were ranked by 376 producers in the following order of importance:

1. Pasture and forage production
 2. Cattle health
 3. Marketing of feeder cattle
 4. Nutrition and feeding
 5. External parasites
 6. Reproduction
 7. Production - management systems
 8. Buildings and equipment
 9. Finishing cattle
 10. Production testing
-

⁺Ranking from 1 through 10 in decreasing order of importance.

Remarks to Question #16
 "Other comments about Pests and Pest Control
 in beef cattle operations"

1. To add a few comments if I may. I feel more effort on cattle health would be helpful, especially how to prevent and treat pink eye and shipping fever, since so many cattle move in and out of sale barns today. Also, more knowledge about dealing with calving problems. I am only a small producer along with cows I background a few calves each year.
2. How much can you pay me to go around and get people to fillout questionnaires-as I need a job.
3. Mowing pastures helps fly control and pink eye--IBR injections fly control-pink eye.
4. There are a lot of recommended materials. It would help to only recommend those most effective.
5. Raise ducks, guineas and chickens and let roam where cattle feed and roam. They help keep fly reproduction down as well as bugs.
6. I had noticeably less face fly infestation in 1979 than recent years.
7. Pink eye research, and fescue foot.
8. Face flies are a real problem.
9. Purchased 25-Polled Hereford Calves in November, will breed them to Angus Bull in July.
10. Take time and look after them and do what needs to be done.
11. Markets should be stabilized--Importance of pasture rotation and stocking rates in relation to forage production--Stress caused by extensive health programs outweigh benefits.
12. I feed lots of Sulphur salt blocks for flies and you need shade or brush for cattle during day; which helps very much on flies, or low ceiling buildings also dark as possible.
13. Pink eye is most expensive plague.
14. We are having very little trouble due to non-confinement of animals.
15. I have difficulty in getting my worming done. I usually use boluses. I would like to see palatable wormer in salt or feed form. I've never been able to get a bull to eat Tramisol feed yet.
16. Cattle will gain 3 times faster if wormed twice in spring--Cows will give more milk--Thus fatter, better calves.

17. More study on sore eyes.
18. Face fly resistance to chemicals may indicate something like the old time fly-chaser masks they used on horses.
19. I buy a few calves when pasture is good to pay taxes and home insurance-- as I retired just 10 acres.
20. Too much poison is used on farms now. Is there some other way?
21. Want to try diatomaceous earth.
22. Too much control of effective supplies.
23. Inspection of out-of-state imports.
24. Breed flies for sterilization.
25. Face flies as pertain to sore eyes or pink eye.
26. In item #10, my first 8 rankings carry equal importance to me.
27. Anything that is good, the environment bans.
28. Clean all manure from barn and feed lot in early spring to control flies.
29. Do you have a sure preventive for pink eye, or a cure for it?
30. Don't pasture short and rotate often.
31. White eye or pink eye is our greatest problem.
32. Face flies causing eye trouble.
33. Avoid confinement of livestock in buildings and I believe it reduces risk of scours and other disease and insect problems.
34. Many farmers are unaware that worming or simple dusting of cattle will kill grubs in some very dangerous positions inside the animal which could cause various complications.
35. I am unable to get cows to calve at proper time--young calves die when 3-7 days old.
36. The horseflies are worse every year and there's nothing to stop them.
37. Need more control of pink eye.
38. Face flies seem to be the worst.
39. Presuming that "pink eye" is transmitted by flies--this is the one problem that causes the biggest problem, with no answer known.

40. Insecticides are good for what they are recommended for, but users should not market livestock or fowl too soon after using for human consumption; 2-3 weeks after applying.
41. Face flies are the largest problem for cattlemen, (Cow and calf producers).
42. Horn and face flies appear to be the only major cattle pest in my immediate area.
43. Need to have a really effective way to control face flies.
44. The reason for 28 weaned. Most of these cows are 1/2 Holstein or a second cross later and my son puts 2 calves on each cow. After they take them he turns them out with them and has good success with this. We have several crossbred heifers about ready to breed.
45. Completely stop raising cattle for two years, mow pasture to hay, start on clean pastures.
46. I have not had any eye problem since I started 2 years ago by using Bulk mineral. I don't know what is in it, but I get it mixed at Ricketts Grain, Bronaugh, MO.
47. We need a feed that will do all of this not just talk about it.
48. Are there any methods other than chemical? If so, please publicize these.
49. More dissemination of information to producers--particularly to encourage all neighboring producers to cooperate in controlling migration of horse and face flies.
50. I would like to have Yellow Market Paper sent daily--a lot of people get paper that don't own livestock.
51. What do you do about birds flocking to your feeding troughs.
52. Use of #2 diesel oil mixed with fly spray on back rubber, is good.
53. Pink eye is #1 problem.
54. We use ear tags (quest #9) only when we have our cattle same color as neighbors.
55. If you have a lot of shade move cattle often from pasture to pasture--conserve your trees, plant more trees. Then you won't need any preventives for flies and other pest.

INSECTICIDE GLOSSARY

<u>Common Name</u>	<u>Trade Name</u>
carbaryl	Sevin [®]
coumaphos	Co-Ral [®] , Baymix [®] , Muscatox [®]
crotoxyphos	Ciodrin [®] , Cio-Vap [®]
famphur	Warbex [®]
isoproc carb	Hytox [®]
lindane	Lintox [®]
malathion	Malathion [®] , Cythion [®]
methoxychlor	Marlate [®]
pyrethrins	Pyrethrins [®]
ronnel	Korlan [®] , Ectoral [®] , Etrolene [®] , Trolene [®]
tetrachlorvinphos	Rabon [®]
toxaphene	Toxaphene [®]
trichlorfon	Neguvon [®]

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