

TEXAS VETERINARIAN SURVEY: IMPACT OF RED IMPORTED FIRE ANTS ON ANIMAL HEALTH

FINAL REPORT

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Abstract

Fire ants are blamed for death and injury of animals of all types. Despite tremendous public concern, there has been little effort made to determine how much economic loss fire ants are actually causing Texas animal owners. In an effort to document these losses, a survey was developed by the Texas Agricultural Extension Service in co-operation with the Texas Veterinary Medical Association, Texas Veterinary Medical Diagnostic Laboratory and the Texas A&M College of Veterinary Medicine. Direct funding was provided by American Cyanamid Co. and program support was provided by Ciba-Geigy.

The surveys were mailed to the over 2500 veterinarians in the state of Texas. A total of 837 surveys were returned, a response rate of 33.5 percent. Of Texas' 254 counties, responses were received from 229 or 90.2 percent. The return rate was similar between the 163 infested and 91 non-infested counties.

Nearly 70 percent of the responding veterinarians cited fire ants as a significant threat to animal health. Over 80 percent cited fire ants as a threat to livestock health and economic loss. A total of 7,204 cases of fire ant related injury to animals were reported with 51.6% to pets. Reported treatment costs totalled over \$726,904 per year averaging about \$54 per case. Respondents blamed fire ants for the deaths of 2,649 animals. The estimated value of

these animals was placed at nearly \$3.5 million. Cattle accounted for 52.4 percent of these deaths, though accounting for only 18.9 percent of the economic loss.

Ratites (ostriches, emus, and rheas) accounted for only 8.0 percent of the reported deaths and 4.0 percent of the reported injuries, but made up 61.6 percent of the total reported economic loss, or \$2.2 million to this small, rapidly growing industry alone. The average loss on one of these birds was over \$10,000. Results were extrapolated to estimate the economic losses statewide and on a per acre of grazed land basis.

Despite the perceived threat, only 10 percent of respondents felt it was economically feasible to treat grazing areas for fire ants, though 47 percent favored treating "calving pastures". Over 77 percent favored treating other facilities such as feed barns, kennels, etc. Fire ant injuries are very seasonal. Over 76 percent were reported in the warmer months (April-September) while less than 24 percent occurred in the cooler season (October-March).

Extrapolation of fire ant related economic losses reported by survey respondents documented a total cost of \$2,166,800 for cattle treated and lost. On a per acre basis, however, this impact is \$0.07, far less than the cost of fire ant control.

I. Texas Veterinarian Survey

Introduction

The red imported fire ant (*Solenopsis invicta* Buren) was introduced into the United States from South America in Mobile, Alabama around the 1930's. It first entered Texas in 1956 and has spread through the eastern half of the state (**Fig. 1**)(Drees & Vinson 1993). The fire ant is now found in 64 percent of Texas counties, infesting about 107,520,000 acres. Despite numerous eradication attempts, the ants have spread across the entire southeastern United States and Puerto Rico. Their current range includes everything south and east of a line beginning about Cape Hatteras, North Carolina and extending westward across the southern edge of Tennessee, through southern Arkansas and just north of the Texas-Oklahoma border to the southeast "corner" of the Texas panhandle. The infestation line then extends south-southwest to about Del Rio, Texas on the Mexican border. Localized infestations have been found as far north and east as the Virginia area and in scattered counties in west Texas and some western states.

Fire ants are recognized as a major nuisance pest in the southeastern United States. The ants have been blamed for a few human deaths, usually falling into two categories. Most deaths are the result of an individual's hypersensitivity to the ants' protein-containing venom causing an allergic reaction and anaphalactic shock. The second category involves incapacitated people such as accident victims and bedridden individuals in nursing homes. Animals, too, suffer similar instances of fire ant mortality with most deaths involving newborn or immobile animals.

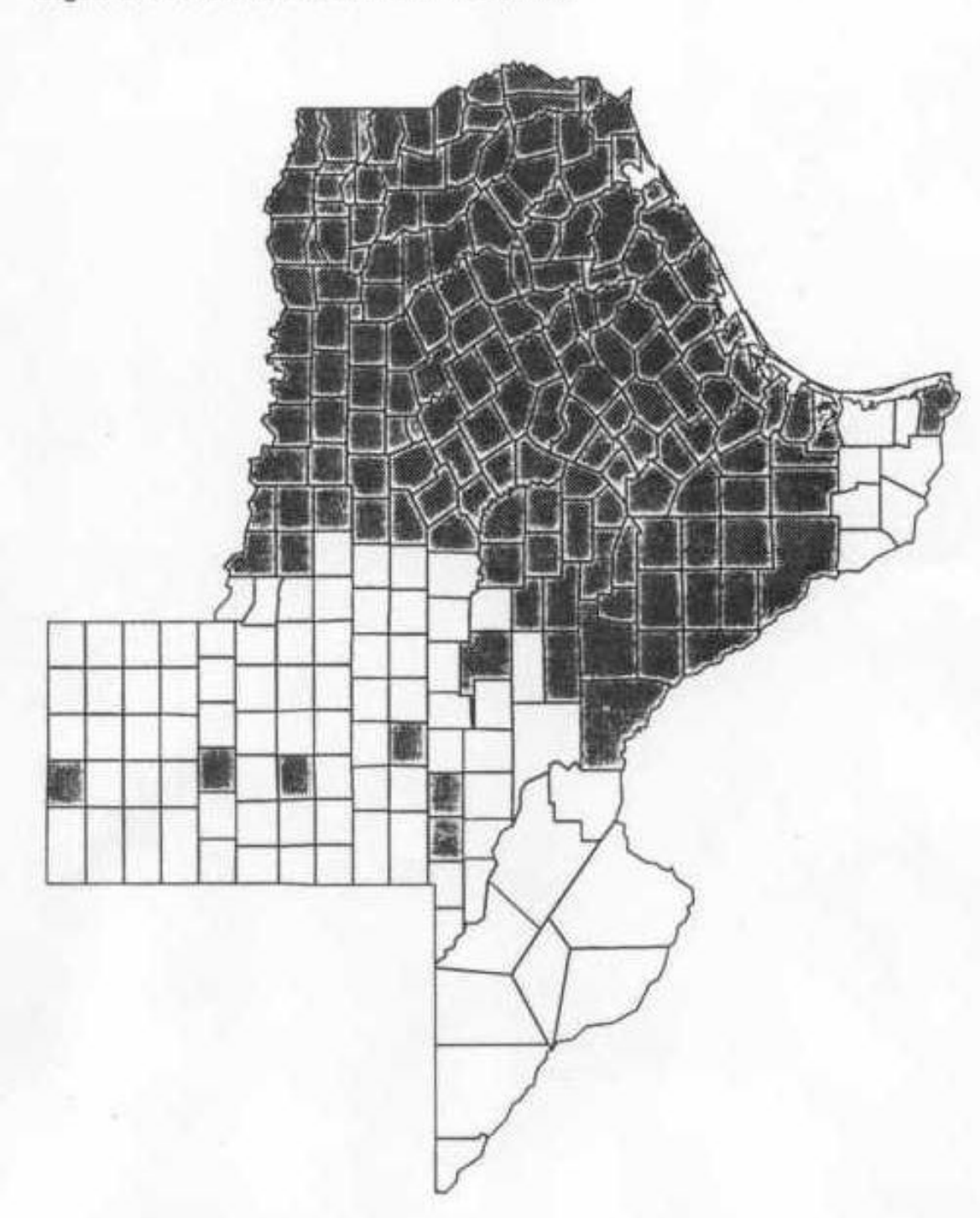
With tens of millions of infested acres, there

has been a great deal of concern and considerable anecdotal evidence about the ants' negative impact on livestock, pets and wildlife, but very little scientific data. Even more poorly documented is the ants' economic impact. With current fire ant suppression methods estimated to cost \$10 per acre per year (Drees and Vinson 1993), there is a great need to justify the cost of these treatments in agricultural systems.

To document fire ant related losses to the Texas animal industry, the Texas Agricultural Extension Service in co-operation with the Texas Veterinary Medical Association, Texas A&M College of Veterinary Medicine, the Texas Veterinary Medical Diagnostic Laboratory and the Texas Agricultural Experiment Station, conducted a survey of the veterinarians in the state of Texas. Direct funding was provided by the American Cyanamid Corporation and program support funding was provided by Ciba-Geigy. The survey was designed to assess the frequency, severity, and economic losses associated with fire ant activity in relation to animal health.

The results from the survey, together with state-wide statistics, were used to estimate the impact of the red imported fire ant on Texas cattle. The goal of this particular extrapolation process was to calculate a per acre cost of fire ant related animal health problems. This figure is important in the development of an economic injury level for this pest.

Figure 1. Fire ant infested counties in Texas, 1993.



Materials and Methods

Specialists in entomology, agronomy, livestock production, agricultural economics, large animal veterinary medicine, veterinary toxicology and general veterinary medicine developed the survey (**Appendix A**). A mailing list was provided by the Texas Veterinary Medical Association (Donald M. Wood, Executive Director and Lowell McCormack, pers. comm.). Surveys were sent to **all** listed members. No attempt was made to exclude certain specialties, practice types or areas of the state. The surveys were mailed with a cover letter explaining the survey's purpose and were printed with postage paid return instructions in a 2-fold page format.

The survey was mailed during the week of 15 August 1993 with a stated return deadline of 1 October. Due to the large number and steady flow of returns past the deadline, all surveys received on or before 15 December were included in the analysis.

Upon receipt, the surveys were divided according to the "YES - NO" blank, regarding the occurrence of fire ant injury and mortality. The surveys with a "NO" response were examined and the counties included in the service areas of each were recorded. No further examination of the "No" surveys was conducted.

The counties listed in the service area section for the "Yes" surveys were tabulated. The surveys were then examined for completeness, legibility and eligibility before further analysis. Reasons for disqualifying a survey included: no identifiable service area listing, grossly incomplete or illegible responses, and written comments only. A few surveys were eliminated on the basis of veterinarian retirement and limited or

inapplicable practice (as indicated by the respondent). Comments (**Appendix B**) were transcribed.

A spreadsheet program, using SuperCalc 5.0, was developed to tabulate the survey results. Each survey was given a reference number and all data entered into the spreadsheet. Initial transcription attempts indicated some inconsistencies in response patterns. In order to prepare the survey data for computer entry, the surveys were examined and any anomalous results converted by hand to a standard format. The following multipliers and conversions were used:

Section I, Question 1. Calculations of case incidence were multiplied by range mid-points: 1, 3, 7.5, 15, and 25 for final tabulation.

Section I, Question 2. The inclusion of both number and percentage options created some confusion among the respondents. Responses fell in three general categories and were standardized as follows:

- 1) numerical listing by category; no conversion necessary.
- 2) percentage listing by category totaling more than 100%; percentages were converted to numerical data by multiplying the case frequency in the previous section by the listed percentages.
- 3) percentage listing by category totaling exactly 100%; percentages were converted as in 2).

The converted numerical frequency data were then multiplied by the listed costs and totaled, giving a total treatment cost per respondent. This item was entered in a separate column in the spreadsheet.

Section I, Question 4. Initial loss and sale loss

were totaled and an average loss per animal was calculated. The number of deaths was multiplied by the average loss, by species. The species totals were then added to give a total mortality loss per respondent. This item was entered in a separate column in the spreadsheet.

Section I, Questions 1 through 4. As analysis of Questions 1 and 4 progressed, large numbers of responses, including very large dollar values, indicated the need for separate

"ratites" and "other exotic" categories. These were incorporated into the spreadsheet, for both questions, before data entry began.

Section II, Question 6. Costs calculated on the mid-point of each category, with \$25 used for the "over 20" category.

Section III. Number of animals treated per day were calculated using the following multipliers for each category: 0.2 (avg. one animal per week), 3.5, 7.5, 15.5, and 25.

Due to inconsistencies in responses by animal types, only percentage results from the broader categories, "Large animal" and "Small animal", were analyzed.

Results and Discussion

A total of 2,525 surveys were mailed. Of these, 26 were returned undelivered, giving a total of 2,499 surveys assumed to have reached the addressees. The number of surveys sent and received, and the number and relative percent of responses indicating experience with fire ant related medical problems with animals is provided in **Table 1**. Ineligible responses are as described in Materials and Methods. **Figure 2** depicts graphically the number of survey responses returned from each county. Greater numbers of surveys were returned from counties with urban centers (Austin, Dallas and vicinity, Houston and San Antonio).

Texas counties with documented red imported fire ant infestations are shown in **Figure 1**, and the responses from veterinarians located in fire ant infested versus non-infested counties is provided in **Table 2**. Since respondents were allowed to list multiple counties in their service

area, totals do not always equal 100 percent. Some veterinarians reported problems with fire ants in counties not known to be infested with red imported fire ants. The respondents were not asked to report incidence by county so it is likely that the service areas of these veterinarians included both infested and uninfested counties. The percentage of responses returned per county from veterinarians reporting treatment of fire ant related animal health problems is presented in **Figure 3**.

The rate of response (number of surveys completed and returned) was one of the

Table 1. Summary of responses to the Texas Veterinarian Survey

	<u>Number</u>	<u>Relative Percentage</u>
Total surveys delivered	2499	
Total surveys returned	837	33.5%
Total "Yes" responses	522	62.4%
Total "No" responses	300	35.8%
Total "ineligible" responses	15	1.8%

Table 2. Responses from fire ant infested versus uninfested counties.

	<u>Number of counties</u>	<u>Relative Percentage</u>
Counties in Texas	254	
Number "infested"	163	64.2%
Number "uninfested"	91	35.8%
Counties with responses	229	90.2%
Infested counties with responses	153	93.9% (of 163)
Infested counties with "Yes" responses	134	87.6% (of 153)
Infested counties with "No" responses	90	58.8% (of 153)
Infested counties not responding	10	
[Non-responding infested counties - Angelina, Cass, Chambers, Dimmit, Marion, Maverick, Newton, Real, Sabine, San Augustine]		
Uninfested counties with responses	76	83.5% (of 91)
Uninfested counties with "Yes" responses	17	22.4% (of 76)
Uninfested counties with "No" responses	74	97.4% (of 76)
Uninfested counties not responding		
[Non-responding uninfested counties - Armstrong, Childress, Cochran, Crane, Dallam, Dawson, Hall, Haskell, Hudspeth, Hutchinson, Knox, Sterling, Terrel, Ward, Upton]		

Figure 2. Veterinary fire ant surveys returned.

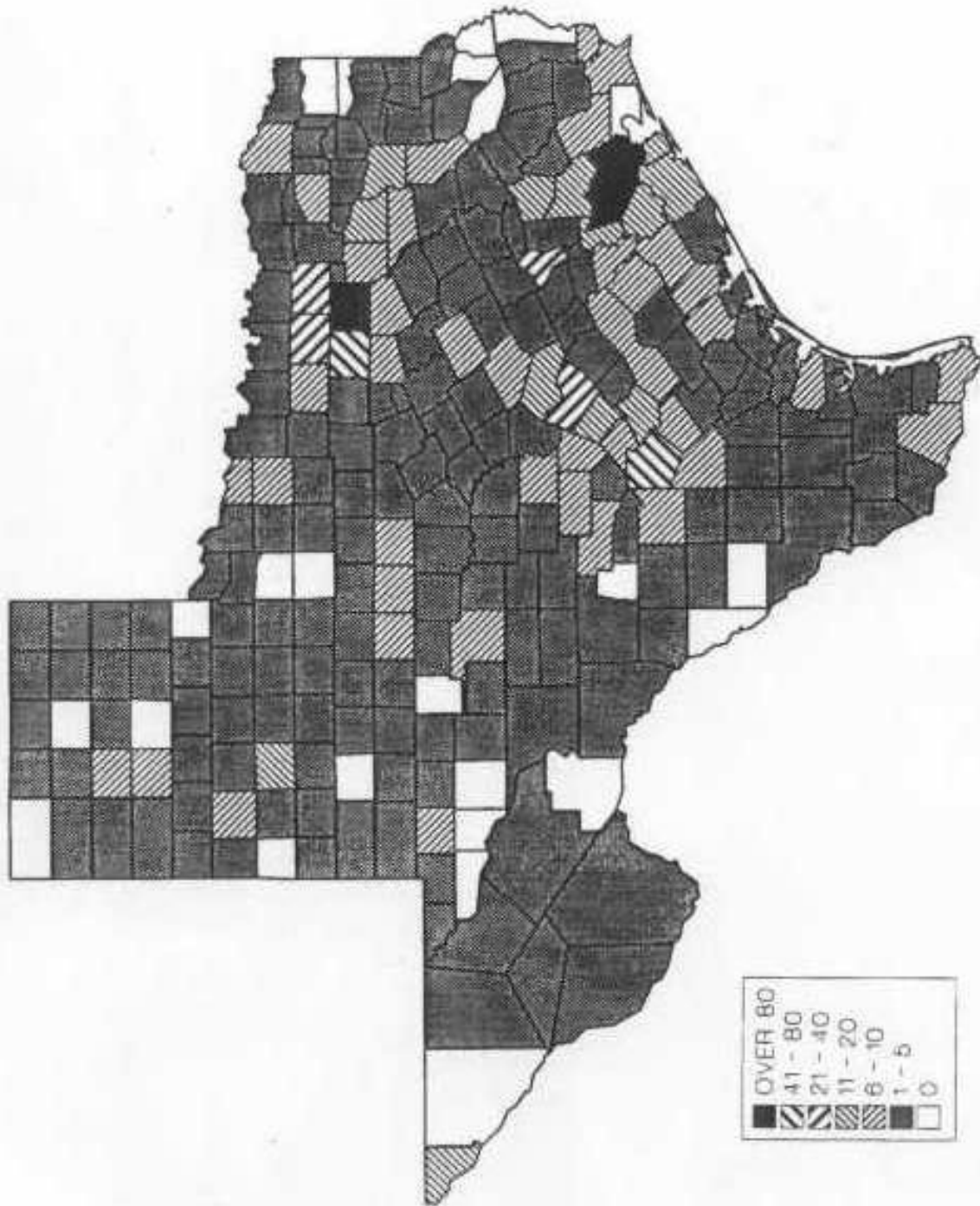
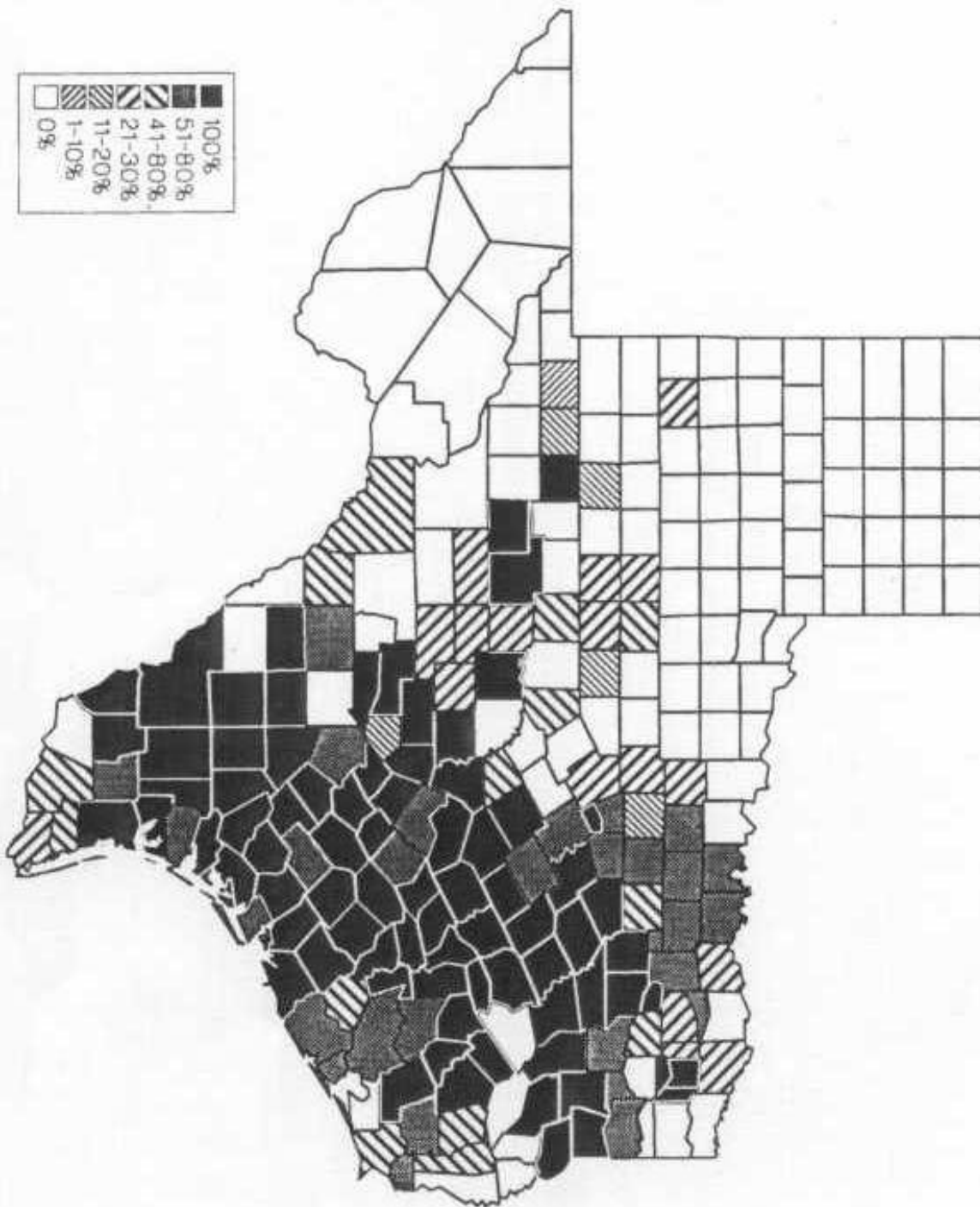


Figure 3. Percentage of veterinarians reporting fire ant injury by county, 1993.



striking results of this survey: a total of 837 out of 2,499 for a return rate of 33.5 percent. On a detailed survey of this type, 15 percent is often considered adequate. Given the hectic nature and long hours of a veterinary practice, a response of this magnitude is indicative of the great interest in fire ants within the animal health community and, most likely, the general population. The breakdown of responses by county reinforced this opinion. Even in areas not infested by fire ants, only 15 of 91 counties failed to yield responses. Large numbers of responses, such as El Paso with 18, were obtained from areas far away from ant infestation. In addition, the map of county responses (**Figure 2**) shows the thorough coverage of the state. One oddity was the lack of response from several counties in deep East Texas. Residents of these counties have lived with fire ants longer than anyone in the state (over 40 years). People in these counties may have either found ways to avoid injury to animals, or no longer worry about taking injured animals to the veterinarian for treatment.

Of the surveys returned (837) nearly two-thirds (522) were marked as "Yes," the veterinarians having treated animals for fire ant injury. Not surprisingly, frequency of reported fire ant injury is greatest from the 163 counties infested with fire ants, but there were exceptions. Over 87 percent of the infested counties were represented by veterinarians responding "Yes", but from 59 percent of the fire ant infested counties, veterinarians responded "No". The results were reversed in the 90 non-infested counties, with only 22 percent having veterinarians responding "Yes" and 97 percent responding "No". Many of the "Yes" responses in uninfested counties were from veterinarians with multi-county service areas that included fire ant infested counties.

The results reported in the sections below were obtained only from the 522 surveys on which veterinarians responded "Yes" to treating or witnessing fire ant related animal health problems.

I. Frequency and economic impact of ant related injuries

Question 1. The number and percent of fire ant injuries to specific types or groups of animals encountered annually by veterinarians responding to this survey is summarized in **Table 3**. With a total of 7,204 cases reported annually, the average number of fire ant related cases per respondent per year was 5.2.

Of the animals affected by fire ants, small animals and pets accounted for more than half of all reported injuries. Next was injuries to cattle, 17.5 percent, and then wildlife, 12.1 percent. Judging from comments written on the surveys, many wildlife cases are routinely treated free of charge. Considering the enormous areas that are not routinely contacted by man, and the difficulty in spotting an injured fawn or bird, fire ant impact on wildlife may be more significant than the survey indicates. If nothing else, these survey results document a need for further scientific research on fire ant damage to wildlife.

Question 2. Results on the frequency and type of fire ant injuries and the average cost for treatment are summarized in **Table 4**.

Table 3. Number and percent of fire ant injuries by species or animal group.

<u>Species</u>	<u>No. responses (% of tot.)</u>	<u>No. cases (% of tot.)</u>	<u>Avg. cases/respondent</u>
Small Animal	489 (35.3%)	3,715 (51.6%)	7.6
Bovine	225 (16.3%)	1,260 (17.5%)	6.0
Equine	213 (15.4%)	622 (8.6%)	2.9
Poultry	149 (10.8%)	335 (4.7%)	2.2
Wildlife	215 (15.5%)	872 (12.1%)	4.1
Ratites	56 (4.0%)	205 (2.8%)	3.7
Other Exotic	31 (2.3%)	182 (2.5%)	5.9
Other	5 (0.4%)	13 (0.2%)	2.6
total	1383 (100%)	7,204 (100%)	5.2

Table 4. Incidence of fire ant injury type and associated costs.

<u>Injury Type</u>	<u>No. responses</u>	<u>No. cases</u>	<u>Avg. cost</u>	<u>Total Cost</u>
Blindness	209	2,717(20.1%)	\$67.59	\$183,642.03
Dermatitis	453	6,688(49.6%)	\$52.24	\$349,381.12
Secondary infection	249	1,948(14.4%)	\$44.54	\$86,763.92
Gastritis	76	440(3.3%)	\$54.16	\$23,830.40
Injury to convalescent animals	159	1,658(12.3%)	\$48.39	\$80,230.62
Other	12	43(0.3%)	\$71.08	\$3,056.44
Total		13,494	\$53.87	\$726,904.53

Extensive response standardization was required for this section as described in the Materials and Methods section. The average cost for treatment was \$53.87, resulting in an annual treatment cost of \$726,904.53.

Despite the confusion of respondents in filling out the cost of treatment section on injury type, this information proved valuable. Over \$726,000 was spent in treating 13,000 fire ant injuries, dermatitis accounted for almost half of these reported cases. Cases involving multiple forms of fire ant injury were anticipated when designing the survey. For instance, temporary blindness in a calf is almost always accompanied by dermatitis and, frequently, gastritis of varying degrees, from the animal licking off and swallowing the ants. The incidence of multiple injuries and treatments are the reason that such flexible responses were allowed. Though not formally tabulated, roughly half of the respondents wrote down percentages in the various injury type categories in Question 2 that totalled 100 percent. The percentages were taken at face value and converted to animal numbers based on responses to Question 1. Because of this, the totals for injury and accompanying cost are considered to be conservative.

The category on injury to convalescent animals was based mainly on past conversations with practicing veterinarians. Twelve percent of the reported cases fell into this category, a result documenting the need for effective fire ant suppression in areas where animals that may be weak, have open wounds, bloody dressings or restricted mobility are kept.

Question 3. The distribution of fire ant injuries throughout the year is presented in **Figure 4**. Though some injuries were reported year-round, an examination of the individual

surveys reporting winter injuries found that 53 of these respondents had checked all 12 months. Thus, cooler month incidences of fire ant related animal health problems may be less severe than the results indicate. Over 76 percent of all injuries were reported in the months April-September.

Results generated by this section document the seasonality of fire ant injury to animals and support suggestions for fire ant management in livestock operations (Drees and Vinson, 1993 and Drees, 1992). Results should also encourage animal caretakers to pay particular attention to effective fire ant suppression during warmer months or reduce the probability of ant related animal health problems by scheduling birthing for the cooler months of the year. **Appendix B** lists comments from several veterinarians who already suggest this approach to their clients.

Question 4. This question, regarding animal mortality, was answered by considerably fewer respondents, only 110 of the 522 (21.1 percent), than those responding to the question regarding injury occurrence. A total of 2,649 animals were reported to have died from fire ant related injuries annually (**Table 5**), for a total loss of \$3,486,047. Therefore, the average loss, calculated across all species, is \$1,315.99 per animal.

Cattle, presumably mostly newborn calves, made up the largest reported group of

Figure 4. Seasonal occurrence of fire ant related injuries and death to animals reported by Texas veterinarians, 1993.

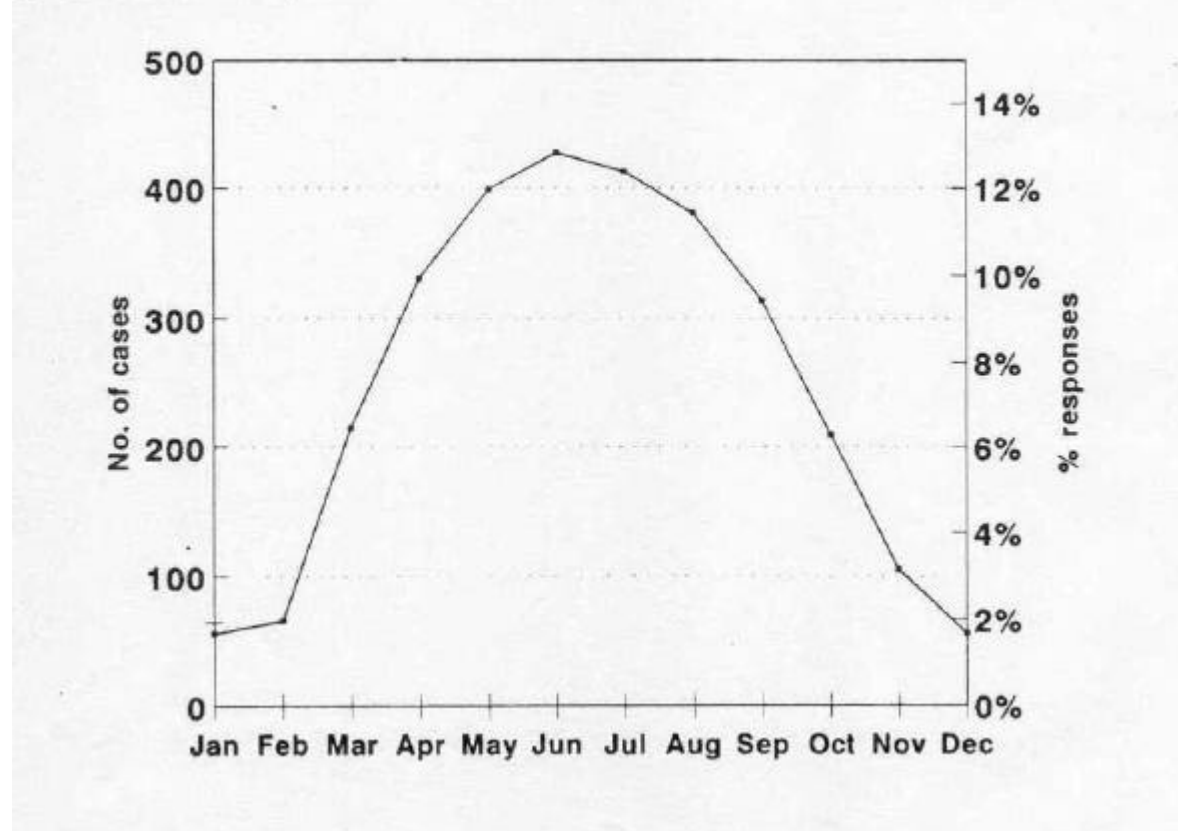


Table 5. Frequency and economic loss associated with animal mortality.

	<u>No. Animals (% of total)</u>		<u>Avg. Loss/Animal</u>	<u>Total Loss (% of total)</u>	
Bovine	1,387	(52.4%)	\$474.17	\$657,670	(18.9%)
Equine	83	(3.1%)	\$1,649.75	\$136,930	(3.9%)
Poultry	381	(14.4%)	\$44.17	\$16,830	(0.5%)
Small/Animal	423	(16.0%)	\$488.59	\$206,675	(5.9%)
Ratite	214	(8.0%)	\$10,029.42	\$2,146,295	(61.6%)
<u>Other Exotic</u>	<u>161</u>	<u>(6.1%)</u>	<u>\$1,997.81</u>	<u>\$321,647</u>	<u>(9.2%)</u>
Total	2,649		\$1,315.99	\$3,486,047	

animal deaths; 1,387 or 52.4 percent. Often, there is a problem in assessing fire ant caused mortality. It is difficult to establish a cause and effect relationship between fire ants and animal death since many animals are found covered with fire ants only after they have been lying dead or incapacitated for an unknown length of time. Fire ants are very active foragers and can recruit thousands of fellow workers that may cover an immobile animal quickly. Small animals and pets, while accounting for half the injuries, accounted for only 16 percent of the deaths. Newborn pets would seem more likely to succumb to ant injury due to their much smaller size and longer period of immobility than livestock animals. However, pets are in much more frequent contact with humans during birthing, while cattle may go days or weeks with no human contact. It is possible, then, that time between human observation is a major factor in both determining and preventing fire ant related mortality. Results here are from those incidents where a veterinarian became involved. Undoubtedly, many cases go unreported. Therefore, results of this survey may be a conservative estimate of the impact of the red imported fire ant on animal mortality.

Ratites, flightless birds including ostriches, emus, and rheas, must be included as a separate category since survey results indicate that fire ants are having a major impact on this small, specialized industry. Ratites accounted for only 2.8 percent of the reported injuries and 8.0 percent of the reported deaths. However, ratite deaths accounted for \$2.1 million in losses, 61.6 percent of the total for all animal categories. Part of the reason may be the fact that they are ground-nesting birds. As demonstrated in experiments with nesting waterbird colonies (Drees 1992), eggs are quite attractive and vulnerable to ant attack during the time between egg pipping and chick

mobility. The extent of this type of occurrence state-wide is unknown, but is thought to be small since ratites are incubated, hatched and raised as chicks under almost sterile conditions in many operations.

There may also be some sensitivity of ratites to fire ant venom. Several veterinarians reported shock-like symptoms in post-hatchling and older birds after fire ant stings. The most likely reason for the huge loss totals, however, is the value of the birds themselves. An egg may cost several thousand dollars and a proven breeding pair may cost \$30,000 or more. The average cost of ratite loss in this survey was reported at slightly over \$10,000, including the initial and potential sale loss. Obviously, the death of a single bird due to fire ants is an enormous and preventable loss.

II. Opinions and perceptions

Potential economic loss is not the only factor involved in deciding to manage fire ants (See **Appendix B**) In many instances, perceptions of the threat caused by the ants' presence play an equal or more important role. Veterinarians are not only animal health professionals, they are often knowledgeable in other areas of livestock production and are sometimes producers themselves. They are also part of the general public, subject to the same fire ant information or lack of it. Therefore, it was important to gather data on veterinarian perceptions and opinions of the fire ant problem. Responses to Questions 5 through 7 are presented in **Table 6**.

Question 5. With 70 percent of the total (522) responding to this question, 69.5 percent felt that fire ants were a significant threat to animal health. Over 81 percent felt they were a significant threat to livestock health and 83

percent felt that fire ants posed the potential for economic loss in livestock. These responses indicate a great concern among veterinarians over the negative impact of fire ants.

Question 6. This question was designed to quantify the perception of cost of fire ant treatments. Only those respondents concerned with livestock were asked to complete this question and about 44 percent of the total complied. The perceived annual cost per acre for treatment was somewhat evenly distributed across the range of five categories, though over a quarter thought fire ant control would cost over \$20 per acre per year. The average estimated cost was \$13.87 per acre per year, not far from the roughly \$10.00 per acre per year estimated by Drees and Vinson (1993). When asked what an economically justifiable cost should be, 44.6 percent of the veterinarians felt that a cost of between \$1 to \$3 per acre per year would be acceptable. The average across the entire response range was \$4.42 per acre per year. Comparing the two averages, a gap of \$9.45 exists between what the respondents think it costs to treat for fire ants and what they think it should cost to be economically feasible. In other words, veterinarians think the cost of treatment is over three times as expensive as it should be.

Question 7. There are several known problem areas involving fire ants in livestock operations. This question sought to address the opinions of the veterinarians on the feasibility of treating specific sites. With over 62.5 percent of the total responding to all three questions, over 59 percent felt it was not economically feasible to treat large areas such as pastures and rangeland, though 31 percent reported they were unsure. It is common practice in some areas to suppress the fire ants in a small pasture and move pregnant cows in

shortly before they give birth. Of the respondents, 46 percent reported that "calving pastures" were economically feasible. Fire ants also tend to infest feed, impair electrical equipment, and gather around wells and stock tanks in large numbers searching for water. Though not particularly dangerous in these situations, the ants are certainly a nuisance and may cause loss of feed and damage to electrical equipment. Over 77.4 percent of the veterinarians felt it was feasible to suppress ants in these areas.

III. Composition and Caseload

The composition and caseload of Texas veterinarians responding to the fire ant survey is summarized in **Table 7**. These results are reported on an estimated daily basis. **Table 8** lists the number of respondents providing information in the "Small Animal" and "Large Animal" percentage categories. The number of respondents in each category was quite variable and inconsistent between practice type. The small animal practice type was calculated from percentages of those responding to either both spaces or only the "Small Animal" space. The large animal

Table 6. Responses to "Opinions and Perceptions" section.

Question 5.

"Do you feel that fire ants pose significant:

threats to small animal/pet health?"

<u>Yes (%)</u>	<u>No (%)</u>	<u>Unsure(%)</u>	<u>Total no. responses (% of 522)</u>
255 (69.5%)	75 (20.4%)	37 (10.1%)	367 (70.3%)

threats to livestock health?"

<u>Yes (%)</u>	<u>No (%)</u>	<u>Unsure(%)</u>	<u>Total no. responses (% of 522)</u>
252 (81.6%)	15 (4.9%)	42 (13.6%)	309 (59.2%)

potential for livestock economic loss?"

<u>Yes (%)</u>	<u>No (%)</u>	<u>Unsure(%)</u>	<u>Total no. responses (% of 522)</u>
257 (83.0%)	8 (2.5%)	45 (14.5%)	310 (59.4%)

Question 6.

"For livestock production in your area, what do you think:

is the annual cost per acre of suppressing fire ants?"

<u>\$1-5</u>	<u>\$6-10</u>	<u>\$11-15</u>	<u>\$16-20</u>	<u>over \$20</u>	<u>Tot. responses (% of 522)</u>
48 (21.3%)	46 (20.5%)	38 (16.9%)	30 (13.3%)	63 (28.0%)	225 (43.1%)

The weighted average cost was \$13.87 per acre.

is an economically justifiable annual cost per acre for treatment?"

<u>none</u>	<u>\$1-3</u>	<u>\$4-6</u>	<u>\$7-9</u>	<u>\$10-12</u>	<u>\$13-15</u>	<u>Tot. resp. (% of 522)</u>
19(8.1%)	104(44.6%)	20(8.9%)	20(8.9%)	19(8.2%)	11(4.7%)	233 (44.6%)

The weighted average cost was \$4.42 per acre.

Question 7.

"Do you feel that it is economically feasible for livestock producers in your area to:

treat their pastures/rangeland?"

<u>Yes (%)</u>	<u>No (%)</u>	<u>Unsure(%)</u>	<u>Total no. responses (% of 522)</u>
33 (10.1%)	193 (59.2%)	100 (30.7%)	326 (62.5%)

treat "calving pastures?"

<u>Yes (%)</u>	<u>No (%)</u>	<u>Unsure(%)</u>	<u>Total no. responses (% of 522)</u>
151 (46.3%)	85 (26.1%)	90 (27.6%)	326 (62.5%)

treat other facilities such as pens, kennels, sheds, stock tanks, etc.?"

<u>Yes (%)</u>	<u>No (%)</u>	<u>Unsure(%)</u>	<u>Total no. responses (% of 522)</u>
267 (77.4%)	30 (8.7%)	48 (13.9%)	345 (66.1%)

Table 7. Composition and caseload analysis of respondent practices.

	<u>Number of responses</u>	<u>Number of cases</u>	<u>Average cases per respondent</u>	<u>Fire ant related percent of caseload</u>
Small animal				
Dog/Cat	462	7,092	15.4	0.19%
Avian/exotic	281	455	1.6	N/A
Large Animal				
Bovine	206	1,502	7.3	0.32%
Equine	215	903	4.2	0.27%
Poultry	106	34	0.32	2.64%
Sheep/Goat/Swine	154	124	0.81	N/A
Exotic	133	120	0.91	1.56%
Other	24	22	0.92	N/A

Table 8. Practice type of respondents.

	<u>Percentage of practice</u>	
	<u>≥ 90%</u>	<u>≥ 75%</u>
Primarily small animal practice	172	199
Primarily large animal practice	11	16
Total responding to small animal percentage:	462	
Total responding to large animal percentage:	206	

practice type was based on percentages of those responding to either both spaces or only the "Large Animal" space. Cut-off percentages are arbitrary.

This section was an effort to compare the frequency of fire ant related problems to the average caseload in a veterinary practice. Using 95 percent as the cut-off percentage describing veterinarian practices in terms of animal categories served, about 172 (33 percent) of the respondents would be considered "small animal veterinarians," whereas only 11 (2 percent) were almost exclusively "large animal veterinarians." The numbers did not change appreciably when the cut-off point was lowered to 75 percent. Therefore, it appears that the "average" veterinarian responding to this

survey has a mixed practice. The breakdown of caseload by species confirms this. In an average day the "average" veterinarian treats: 15 to 16 dogs and cats; 1 or 2 exotic small animals or birds; 7 to 8 cows; about 4 horses; about 1 sheep, goat, or pig; about 1 exotic large animal or ratite; only 1 or 2 fowl per week; and the occasional reptile, fish or other animal.

If an average veterinarian sees 2,737 cattle per year (7.5 cattle per day x 365, from above), and sees 6 cases of fire ant related animal health problems requiring treatment per year, only 0.22 percent of the cases seen are fire ant related. **Table 3** lists a similar breakdown of injury frequency for all species.

Conclusions

- Based on the rate and statewide distribution of the returns and responses to relevant questions, there is considerable interest in and concern over the impact of fire ants on animal health in Texas.
- Small animals and pets are, by far, the most frequently treated type of animal for fire ant related health problems, with cattle second and wildlife a close third.
- This survey documented a conservative cost of \$750,000 per year to treat fire ant injuries with over 7,200 animals treated, most with multiple injuries.
- Fire ants cause over three-fourths of their yearly injuries from April through September.
- This survey documented nearly \$4.5 million of animal death losses that were

blamed on fire ants.

- The ratite industry suffered over \$2.1

million in losses, alone.

- The respondents felt, overwhelmingly, that fire ants pose a significant threat to animal health and livestock production.
- The respondents felt that fire ant treatments are more than three times as expensive than is necessary to make them economically feasible in a livestock operation.
- Few respondents felt it was economically feasible to treat large acreages, though many felt it feasible to treat "calving pastures" and most facilities.
- The average respondent has a mixed practice with a caseload of roughly 60 percent small animals and 40 percent large animals.
- Though fire ant associated losses are substantial and of great concern, they are relatively minor compared to the size of the livestock and pet industries.
- This survey documented only cases seen by veterinarians. It is likely that many more animals are affected, but are not taken for

medical care.

Recommendations

- Given the great interest, particularly in areas not infested with the red imported fire ant, there needs to be increased targeting of information regarding effective fire ant management programs to veterinarians and livestock producers.
- Animal health professionals and the public need to be made aware of the seasonality of fire ant injury and educated on ways to take advantage of it with methods such as scheduled breeding and timing of fire ant treatments.
- With wildlife being third in the number of reported fire ant related cases treated by veterinarians, further research needs to be conducted to determine the impact of fire ants on wildlife, particularly deer.
- The ratite industry urgently needs a

targeted program on fire ant management methods and pesticide label additions or clarifications regarding use in and around ratite facilities.

- Manufacturers and researchers must develop new chemicals and/or application methods to reduce fire ant treatment costs to make their use economically feasible in livestock operations.
- More surveys on economic loss need to be conducted among livestock producers and ranchers, in addition to those reported here from veterinarians, to help justify the costs invested in fire ant treatments.

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I. Extrapolation of Survey Results for Cattle Statewide

Introduction

One of the reasons for conducting the Texas Veterinarian Survey was to provide documented losses for the development of an economic injury level for the red imported fire ant, *Solenopsis invicta* Buren, in cattle production systems.

Many types of losses have been attributed to fire ants and their tall, hardened mounds. In pastures, the red imported fire ant can sting calves, causing temporary blindness (Joyce 1983) and occasionally death (Lofgren 1986). However, ant predation also suppresses ticks and related problems (disease and related insecticide applications to cattle)(Harris and Burns 1972, Fleetwood et al. 1984). The ants also prey on the immature stages of horse flies (Johnson and Hays 1973, Drees 1987) and other insects (Lofgren 1986). In hay production, fire ant presence has not been documented to affect yield or quality of forage produced (Blust 1977). The ants reportedly cause problems because the tall, hardened mounds may destroy harvesting machinery and the ants may invade hay bales (Lofgren, 1986). Few attempts have been made to determine the economic losses associated with the red imported fire ant in cattle production systems (Sorenson, 1988).

In 1991, the red imported fire ant infested 131 (52 percent) of the counties in Texas (Drees and Vinson, 1991). According to the 1974 U.S. Census of Agriculture, fire ants infest 74.9 percent of the hay acreage (1,762,381 acres/2,350,721 acres total x 100) and 77.6 percent of the hay fields (47,319 field/61,089 fields total x 100). The average size of a hay field was 37.3 acres (38.5 acres for Texas). Hay acreage is relatively stable over time according to Dr. Arthur Gerlow, Extension Agricultural Economist. The cost of treating

all hay pasture acreage with 1 to 1.5 lb. Amdro® at \$10.50/lb. is \$18,505,000. Sheppard, et. al (1989) estimate equipment (mowers, balers, etc.) losses due to fire ants in Georgia by estimating that one incident occurs for each 1,000 acres of cropland or hay field at a cost of \$50.00 per repair. For Texas, this formula calculates the cost to be \$88,119.00 (1,762,381/1,000 x 50).

For many ranchers, particularly those not deriving a large part of their income from their cattle operations, the decision to control fire ants is often subjective and is not based solely upon economic considerations. Results of surveys characterizing cattle producers in the Texas (Ladewig & Beverly 1987; Ladewig 1986 & the Texas Agric. Ext. Serv. 1985) are provided in **Table 9**. Two-thirds (76.3 percent) of the cattle producers surveyed claimed that agricultural income made up less than half of their gross family income, while a relatively small percent (12.5 percent) derive their entire income from agriculture. Only eighteen percent of producers work full time in their cattle operations (Ladewig 1986).

In agricultural production systems, justifiable investments to suppress pests should be equal or less than the real or potential loss caused by the pest. Losses reported by veterinarians to this survey document only a part of the impact of fire ants in cattle production systems. A method for extrapolating these results to Texas is presented and loss per acre was calculated. As documentation for other types of fire ant

related losses are generated, the average total cost of fire ants in cattle production systems can be ascertained.

Table 9. Pasture size in the fire ant infested regions of Texas.

<u>Acreage</u>	Percent of respondents (see survey references)			
	<u>South Central</u> ¹		<u>South and Central</u> ²	<u>East</u> ³
	<u>owned</u>	<u>leased</u>		
1-50	10.3	57.2	9.9	11.6
51-100	15.4	7.5	12.1	16.5
101-200	18.8	10.9	18.4	24.2
201-500	27.1	12.5	23.6	25.8
501-1,000	15.2	6.4	14.0	12.2
> 1,000	13.1	5.5	22.0	9.6
Make own hay	66.2		69.5	88.1

¹ Ladewig and Beverly, 1987. Number of respondents: 1,344

² Ladewig, 1986. Number of respondents: South: 422, Central: 1,224

³ TAEX, 1985. Number of respondents: 2,091

Materials and Methods

Using the results of the Texas Veterinary Survey and statewide statistical information obtained from the sources cited, an attempt was made to calculate the impact of fire ant related animal health problems to Texas. We have focused on cattle as an example, but similar methods can be applied to other animal groups.

Assumption. In order to extrapolate from the survey results, the assumption is made that those veterinarians not responding to the

survey experienced similar ant related problems as did respondents. This assumption may provide exaggerated estimates because no effort was made to contact these individuals to determine the reasons for not responding.

The formulas below were developed to calculate estimates for the statewide impact of fire ants on animal health:

I. Value of cows per grazed acre:

A. The number of cattle in Texas; $[(H \times I \div J) + H] \div C \times 100 = K$ (4)

$$A \div B = C \quad (1)$$

where: A = Value of cattle (Anderson, Bartek and Davis, pers. comm.); B = Average value of a cow (from survey question 4); and C = No. cattle in Texas (1992).

This equation (1) can also be used to calculate the numbers of cattle in the fire ant infested part of Texas (C_1) for use in equation 2.

B. Number of acres grazed for cattle production in the fire ant infested counties of Texas;

$$C_1 \div D = E \quad (2)$$

where: C_1 = No. cattle in the fire ant infested Texas counties (equation 1); D = Mean stocking rate (cattle per acre) (Ladewig & Beverly, 1987); and E = No. acres grazed in fire ant infested Texas counties.

C. Value of cattle per acre of grazed land in the fire ant infested part of Texas;

$$D \times F = G \quad (3)$$

where: D = Mean stocking rate (cattle per acre) (Ladewig & Beverly, 1987); F = Average value of a cow (from survey question 4); and G = Value of cattle per grazed acre.

II. Fire ant related economic impact in Texas:

A. Percent of cattle in the fire ant infested part of Texas affected by ant related health problems:

where: H = No. cattle reportedly *treated* (H) (survey result, question 2); I = Percent non-respondents to the survey (see assumption, above); J = Percent respondents to survey); C = No. cattle in fire ant infested Texas counties (from equation 1) x 100; and K = Percent cattle estimated to be *treated* in Texas.

The same equation was used to calculate the percent of cattle *lost* due to mortality (K_1) using the loss value, H_1 , from survey question 4.

B. Statewide value of cattle treated or lost due to fire ant related health problems;

$$[(H \times I \div J) + H] \times L = M \quad (5)$$

where: L = Mean treatment cost (result of survey question); and M = Statewide value of cattle *treated*. The same equation was used to calculate the statewide value of cattle *lost* due to mortality (M_1) using F from equation 3 instead of L.

Adding the cost of treatment plus mortality loss yields the total estimated impact of fire ants on the cattle industry in Texas.

III. Per acre cost of fire ant related health problems to cattle in Texas;

$$[(H \times I \div J) + H] \times F \div E = N \quad (6)$$

where: N = Per acre cost of fire ant related treatments. The same equation was used to

calculate the per acre cost of cattle *lost* due to mortality (N_1) using H_1 .

Adding the cost of treatment plus loss per acre will yield the total estimated impact of fire ants on cattle health.

Results and Discussion

Values used (Table 10) and results of the extrapolation equations (Table 11) are provided below.

I. Value of cows per grazed acre:

A. The number of cattle in Texas: (1)

A = Value of Texas cattle (milk + other beef, Table 10) =
\$3,330,712,220.00

B = Average value of a cow (Table 10) =
\$474.17

C = No. cattle in Texas (1992) =
7,024,299.77

This estimate (C) is close to that reported by E. E. Davis; 7,310,000 cattle for 1994 (Table 10). For infested counties in Texas, this equation results in an estimated 5,450,830 cattle (= C_1), 77.6 percent of the state's cattle population and valued at \$2,584,620,061. These values exclude feed lot cattle operations which are not thought to be adversely affected by fire ants.

B. Number of acres grazed for cattle production in the fire ant infested counties of Texas: (2)

C_1 = No. cows in the fire ant infested Texas counties (equation 1) =
5,450,830.00

D = Mean stocking rate (cow/ac.) (Ladewig & Beverly 1987, Table 10) =
0.1667

E = No. acres grazed in fire ant infested Texas counties = 32,704,980.13

C. Value of cattle per acre of grazed land in the fire ant infested part of Texas: (3)

F = Average value of a cow (Table 10) =
\$474.17

G = Value of cows per grazed acre =
\$79.04

II. Fire ant related economic impact in Texas:

A. Percent of cattle affected by ant related health problems in the fire ant infested part of Texas:

Treatment (4)

H = Cattle treated (Table 10) = 1,267

I = Percent non-respondents to the survey

Table 10. Values used to extrapolate fire ant related treatment and mortality costs to cattle in Texas.

Item			Value(s) used
● Percentage of Texas veterinarians <u>not</u> responding to the survey =			66.5%
● Value of livestock for Texas and within fire ant counties, 1992 (C. G. Anderson and B. Bartek, pers. comm.):			
	<u>Texas</u>	<u>Fire ant infested Texas counties</u>	
fed beef	\$1,525,474,150	\$290,408,000	
milk cows	67,020,800	62,380,600	
other beef	3,263,691,420	2,522,239,360	
milk + other beef	3,330,712,220	2,584,619,960	both
beef total	4,856,186,370	2,875,007,776	
● Estimated number of cattle in Texas, 1994 (E. E. Davis, pers. comm.):			
calves		5,810,000	
milk cows		390,000	
replacement heifers (>500 lbs.)		980,000	
milk cow replacements		130,000	
total			7,310,000
● Average value of a cow (Question 4) =			\$474.17
● Mean stocking rate (Ladewig & Beverly, 1987):			
Native pastures		1 cow/7 acres	
Improved coastal bermudagrass pastures		1 cow/3 acres	
Weighted average			1 cow/6 acres
● No. cattle reportedly treated (Question 2) =			1,260
● No. cattle lost (survey results, Question 4) =			1,387
● Mean treatment cost (Question 2) =			\$53.87

Table 11. Results of extrapolation from responses.

7,024,299.77	No. cattle in Texas (1992)
5,450,830	Cattle in fire ant infested Texas counties
\$2,584,620,061.00	Value of cattle in fire ant infested Texas counties
32,704,980.3	No. acres grazed in fire ant infested Texas counties
\$79.04	Value of cows per grazed acre
0.069%	Percent cattle estimated to be treated for ant injury in Texas
0.076%	Percent cattle estimated to be lost due to ant related mortality in Texas
\$203,736.34	Statewide value of cattle treated due to fire ant related health problems
\$1,963,063.80	Statewide value of cattle lost due to fire ants
\$2,166,800.00	Estimated statewide economic impact of fire ants on livestock health
\$0.01	Per acre cost of fire ant related treatments to cattle in Texas
\$0.06	Per acre cost of fire ant related death to cattle in Texas
\$0.07	Total extrapolated per acre impact of fire ants of cattle health

$= 66.5$
J = Percent respondents to the survey = 33.5

K = Percent of Texas cattle treated = 0.069%

An estimated 3,782 cattle were treated for fire ant sting related injuries.

Loss (mortality)

H₁ = Cattle lost (Table 10) = 1,387

K₁ = Percent of Texas cattle lost = 0.076%

An estimated 4,140 cattle lost to fire ant related deaths.

B. Statewide value of cattle treated and/or lost due to fire ant related health problems

Treatment (5)

L = Mean treatment cost (Table 10) = \$53.87

M = Statewide value of cattle treated due to fire ant related health problems = \$203,736.34

Loss (mortality)

F = Mean cost of lost animal (Table 10) = \$474.17

M₁ = Statewide value of cattle lost due to fire ants = \$1,963,063.80

Thus, the annual statewide economic impact of fire ant related cattle treatment (\$203,736.34) and loss (\$1,963,063.80) extrapolated from the veterinarian survey results is \$2,166,800.

III. Per acre cost of fire ant related health problems to cattle in Texas:

Treatment (6)

With a statewide value of cattle treated due to fire ant related health problems (from equation 5) of \$203,736.34 divided by the number of acres grazed in fire ant infested Texas counties, 32,704,980.3,

N = Per acre cost of fire ant related treatments of cattle in Texas = \$0.006.

Loss (mortality)

With a statewide value of cattle lost due to fire ants \$1,963,063.80 grazed on 32,704,980.3 acres,

N₁ = \$0.060 Per acre cost of fire ant related death of cattle in Texas.

Thus, the total cost per acre of treatment (\$0.01) plus loss (\$0.06) per acre will yield the total extrapolated per acre impact of fire ants on cattle health: \$0.07.

Although the estimated statewide loss to cattle from fire ant related problems appears substantial (\$2,166,800), the per acre reported loss calculated is small (\$0.07) and the probability of having medical problems is low (0.069% for treatable injury and 0.076% for mortality). Certainly, much cattle mortality is not reported to veterinarians. Direct surveys of cattle producers would undoubtedly result in higher reported loss values, although the medical determination of the cause of the cattle health problem might be less reliable.

Conclusions

Results (**Table 11**) confirm veterinarian response to the survey indicating that the cost of treatment for fire ant suppression (estimated at \$10.00 per acre per year by Drees & Vinson 1993) is more expensive than is justified by the potential cost of fire ant related animal health problems.

However, this loss value does not account for other potential (direct and indirect)

economic losses caused by the red imported fire ant in a cattle production system such as possible reduction of forage production, equipment damage and potential medical impact on man (see **Appendix B**).

The methodology developed for extra-polating survey results for cattle treatment and losses to the state may also be useful in extrapolating results for other animals.

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Appendix A. Cover letter and survey sent, August 1994, to 2,525 veterinarians using the mailing list provided by the Texas Veterinary Medical Association.

P. O. Box 2150
Bryan, Texas 77806-2150
August 17, 1993

MEMORANDUM TO: Selected Texas Practitioners of Veterinary Medicine

SUBJECT: Survey of Fire Ant Related Impact to Livestock

The red imported fire ant is undoubtedly a major insect pest in Texas. Despite many anecdotal reports of fire ant related injuries and deaths to animals, no effort has been made to document or quantify the related economic loss. Through daily contact with producers and pet owners, the veterinarians of Texas have the most knowledge and documentation of the frequency and severity of fire ant attacks on domestic animals available.

This survey has been developed by a team of researchers and extension personnel at Texas A&M University to obtain scientifically sound data describing the impact of fire ants on animal health in Texas. The information about your practice and the clientele will be used to extrapolate your responses to the state, as a whole. These data may form a basis for fire ant management decisions by producers, governmental agencies, pesticide manufacturers, and homeowners across Texas.

Please take a few minutes to complete the survey, even if only to report that you have not seen cases of fire ant losses to animals. We welcome comments and/or case histories. Comments, etc. may be quoted in presentations and print, but the identity of the respondent will not be used.

INDIVIDUAL SURVEY RESPONSES WILL BE KEPT STRICTLY CONFIDENTIAL.

Thank you very much for your time and thoughtful responses. We hope to begin summarizing responses by **October 1, 1993.**

Sincerely,

Dr. Bastiaan M. Drees
Associate Professor of Entomology
and Extension Entomologist

Charles L. Barr
Extension Associate

The survey (copy attached) has been developed and approved by a team of Texas A&M research and extension personnel including:

Dr. Bastiaan M. Drees, Associate Professor of Entomology and Extension Specialist
Mr. Charles L. Barr, Extension Associate

Dr. David H. Bade, Professor and Extension Forage Specialist
Dr. Noah D. Cohen, Assistant Professor, Texas Veterinary Medical Center
Dr. Gerald C. Cornforth, Extension Economist-Management
Dr. A. Konrad Eugster, Executive Director, Texas Veterinary Medical Diagnostic
Laboratory
Dr. John C. Reagor, Head, Diagnostic Toxicology, Texas Veterinary Medical Diagnostic
Laboratory
Dr. L. R. Sprott, Professor and Beef Cattle Specialist
Dr. S. Bradleigh Vinson, Professor, Department of Entomology

Financial and clerical support provided by American Cyanamid Corporation, manufacturers of Amdro® Fire Ant Bait and the Texas Agricultural Extension Service.

**TEXAS VETERINARIAN SURVEY
IMPACT OF RED IMPORTED FIRE ANTS ON TEXAS ANIMAL HEALTH**

NAME / CLINIC _____

ADDRESS (optional) _____

SERVICE AREA [portion(s) of county(s)] _____
(Please complete this item)

Has anyone in your practice ever treated fire ant injured animals or witnessed fire ant caused mortality in your service area?

- YES** _____ (Please continue with survey)
NO _____ (You may stop here. Thank you for your help.)

I. FREQUENCY AND ECONOMIC IMPACT OF Ant RELATED INJURIES

1. Please estimate the total number of fire ant related cases you treat for each type of animal in an average year.

	<u>< 2</u>	<u>2-5</u>	<u>5-10</u>	<u>10-20</u>	<u>> 20</u>
Cattle	~	~	~	~	~
Horses	~	~	~	~	~
Poultry	~	~	~	~	~
Small (Domestic) Animals	~	~	~	~	~
Wildlife	~	~	~	~	~
Other _____	~	~	~	~	~

2. Please give the average number of injury types (percent of total or actual number) you treat per year and the cost of treatment per case to the client.

	<u># or %</u>	<u>Avg. cost</u>
a) temporary blindness	_____	_____
b) dermatitis (treatment of stings)	_____	_____
c) secondary infections	_____	_____
d) gastritis	_____	_____
e) injury to convalescent animals	_____	_____
g) other (or comments)	_____	_____

3. Fire ant activity is very seasonal. To help improve the timing of fire ant control, please:

check the months in which you have encountered **any** fire ant related problems, and **circle** any month(s) in which the problems are **particularly frequent or severe**.

- January February March April
 May June July August
 September October November December

4. Newborn or young animal mortality may constitute the most severe type of fire ant related loss. How many deaths per year do you encounter and what is the estimated monetary loss, both initially and if the animal had survived to sale, to a client in your area?

	<u># of deaths</u>	<u>initial loss</u>	<u>market loss</u>
Bovine	_____	_____	_____
Equine	_____	_____	_____
Poultry/Fowl	_____	_____	_____
Small animals/Pets	_____	_____	_____
Other (specify)	_____	_____	_____
	_____	_____	_____

II. OPINIONS AND PERCEPTIONS

(Questions 6. and 7. relate to livestock production only.)

5. Do you feel that fire ants pose significant:

- threats to domestic animal health? ~ Yes ~ No ~ Unsure
 threats to livestock health? ~ Yes ~ No ~ Unsure
 potential for livestock economic loss? ~ Yes ~ No ~ Unsure

6. For livestock production in your area, what do you think:

is the **annual cost per acre** to suppress fire ants?

- ~ \$1-5 ~ \$6-10 ~ \$11-15 ~ \$16-20 ~ over \$20

is an economically justifiable **annual cost per acre** for treatment?

- ~ none ~ \$1-3 ~ \$4-6 ~ \$7-9 ~ \$10-12 ~ \$13-15

-
7. Do you feel that it is economically feasible for producers in your area to:
- | | | | |
|--|-------|------|----------|
| treat their pasture/rangeland? | ~ Yes | ~ No | ~ Unsure |
| treat "calving pastures"? | ~ Yes | ~ No | ~ Unsure |
| treat other facilities such as pens,
sheds, stock tanks, etc.
(please specify) _____ | ~ Yes | ~ No | ~ Unsure |

III. COMPOSITION AND CASELOAD (Please complete for your practice.)

	%	<u>Estimated number of animals treated per day</u>				
SMALL ANIMAL (tot.) _____						
Dog/Cat _____		~ < 2	~ 2-5	~ 5-10	~ 11-20	~ over 20
Avian/exotic _____		~ < 2	~ 2-5	~ 5-10	~ 11-20	~ over 20
LARGE ANIMAL (tot.) _____						
Bovine _____		~ < 2	~ 2-5	~ 5-10	~ 11-20	~ over 20
Equine _____		~ < 2	~ 2-5	~ 5-10	~ 11-20	~ over 20
Poultry _____		~ < 2	~ 2-5	~ 5-10	~ 11-20	~ over 20
Sheep/Goat/Swine _____		~ < 2	~ 2-5	~ 5-10	~ 11-20	~ over 20
Exotic _____		~ < 2	~ 2-5	~ 5-10	~ 11-20	~ over 20
Other (specify) _____		~ < 2	~ 2-5	~ 5-10	~ 11-20	~ over 20

We welcome any comments or fire ant related case histories or other documentation on the back of this page or attached pages.

THANK YOU FOR YOUR ASSISTANCE

Return completed survey and comments by folding this form in half and stapling the loose edge. Please be sure that the address and postage paid mark on the back of this page are visible.

No Return Postage is Necessary.

Surveys may also be returned to:
 Dr. Bastiaan M. Drees
 Texas Agricultural Extension Service
 P.O. Box 2150
 Bryan, Texas 77806-2150

Appendix B. Comments from respondents to the Texas Veterinarian Survey: Impact of red imported fire ants on Texas animal health, 1993.

1. Cost of treatment may be minimal compared to loss of productivity on death loss. I don't think I see even a small percentage of the cases. Producers could assure this. My colleagues see many fawns each year many of which die.
2. I see a number of skin pustules related to suspected fire ant bites, particularly on foals, but the animals don't require treatment.
5. During drought it is harder to tell where the nests are since no mounds are formed. One may inadvertently occupy the wrong space, therefore, either yourself or the livestock. They can also get into hay and barns and nest in these areas. No, mice can't use hay either. I believe, but cannot confirm, that the fire ant has a positive affect in areas where there are many ticks by reducing the tick population. However, the advantage cannot be considered worth the problem since they (ants) reduce the use the land, to the extent some areas cannot grow livestock left unattended, esp. so very young. Loss of habitat to wildlife is the greatest concern outside of our agricultural audience. Another serious problem I see is the attraction the ants have for electrical boxes around pumps etc. causing frequent shorts and consequent loss of water supply. We treat the boxes with insecticide powders (Sevin® dust).
6. One dog on a chain stung to death no value was placed on the dog.
10. My brother-in-law has 10-15 head of cattle near Yoakum, Texas and has had at least 1 calf die from fire ants; maybe others - common problem in the area.
19. Our greatest problem with ants is their entry into barns and sheds especially when it rains. They get into feed.... they sting us and animals. Our daughter was stung badly when she was young.
20. Greatest problem in baby calves and fawns. Also in baby birds, esp. in quail. Many fawn are found alive or dead - ? eco loss. No baby quail can be found in fire ant areas. Regardless of the treatment that is legal or approved - nothing really works! I moved from Hays County to Hopkins County in the Fall of '92. I continue to do limited work in Hays County. Primarily ranch work. Fire ants east of I-35 in Hays County are much more of a problem than I find in Hopkins County. In Hays County any calf that has the slightest problem at birth could loss both eyes within a day. A healthy calf always has some fire ant problems at birth. Any calf kept in a pen for treatment will have multiple problems from fire ants. The same goes for a cow that is down or convalescing for some reason. The same applies to humans. You cannot stay on the ground for long (to change tire or work on equipment) before suffering from fire ants. Fire ants are not the problem in Hopkins County as in other areas.
24. I don't see any real economic impact to the small animal pet owner except in cases where fire ant stings are very numerous or secondary problems occur due to self-mutilation or infection. Well over 95% of the problems we see with fire ant are in dogs; we see very few incidents in cats. With dogs, more presentations are in the very young and the old or debilitated. I can not relate any death to fire ants even in these animals.
29. All ant related injures (are) associated with a large canine breeding program. Most injuries (are) in juvenile dogs inside pen areas (where) many ants (are) on (the) premise.
30. I witness most fire ant activity and death/morbidity during the spring four fall when it is wet and fire ants are active. Ninetyfive percent of cases are newborns, others are recumbent animals or horses confined to stalls infested with ants. We see so many whitetail fawns near death, especially after Memorial Day that we have quit treating those near death due to low success rate. On beef calves one high dollar exotic hoofed animals, the most severe problem is corneal ulceration and intoxication and gastritis and gastric ulceration; animals that survive are often not fit for sale. Attempts to control (the) fire ant infestation in calving areas is unproductive or unfeasible.
35. I find that fire ants infest stalls and paddocks causing aggravation to the animals. I see mostly dermatitis secondary to bites but also damage to the eyes if the animals lay down. I believe Logic® is the best control method since it does not kill other non-harmful insects. I would like more information on the best and safest way to apply Logic® to stalls and pastures.
41. Fire ants seem to attack cattle that are weak or sick and unable to get up.

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42. The most severe case I saw was a maltese from a county boarding kennel. Its hind quarters were denuded. Ants had blistered its mouth, anus, and corneas. I gave it, I.V. fluids dexamethosone, and antibiotics and it did fine. Mostly I see pastures on the ventral abdomen, which I rarely treat. I work in a city pet practice!
47. Unless an affordable large area treatment that is completely selective for fire ants can be developed I don't think any large scale control should be attempted.
50. (An) usual presentation is (a) young animal with pustular dermatitis, pruritus, (and) self mutilation. One will display signs of toxicity, vomiting, diarrhea, agitation. Rarely, edema near bite sites.
57. My clients have been extremely pleased with the results and cost for treatment of their yards or acreage with fenoxycarb. Those who used fenoxycarb (Logic®) report resolution of their fire ant problems.
60. Most problems are in neonates, however, I did have one case of a young healthy dog.
61. Chicks were killed at 24 hours after hatching. I have not had a fire ant problem in my veterinary practice I live on a small farm in Arkansas County and the fire ants are so bad I have given up trying to raise chicks, ducklings and goslings. I have been spending an average of \$25.00 month to treat a one acre area where I keep the poultry. This problem is not getting controlled.
62. It is useless to treat just one area because the wild just move in from another area within a few weeks.
68. We have had many dogs die from ant bite problems. Usually a dog that rolls in a fire ant mound and gets multiple stings. We have a problem in our area where we have many small "ranchettes" with high animal populations and low acreage. This concentration of animals (and) fire ants together makes us more aware of injuries by these insects. My own place 150 acres used to have many quail and small animals on it 15 years ago and even though I plant food plots and have feeders out the numbers of wildlife is decreased. I try to control my pastures with Amdro® and Orthene®, but it is cost prohibitive.
70. The majority of our fire ant problem comes in late spring. The cases we see are fire ant bite to calves eyes and baby deer. We can commonly find fire ant bites on dogs. We recommend Jan-March calving programs to avoid the ants. I imagine a great may deer killed a year from fire ants. We see 3-6 baby deer a year eaten up with fire ants.
72. Fire Ants have been a real problem for some cattle producers in this area. The ants get into newborn calves' eyes and can cause blindness or at the very least severe irritation. Also, we have had some reports of cows calving in ant infested pasture that had a high enough level of ants to kill the calves.
80. Producer reports would be higher than these figures because few bring them in for treatment.
81. Our hospital does deal with many wild life cases. I just don't personally handle them. Large numbers of whitetail deer (are) seen by (our) wildlife and exotic service. Nesting birds (are) affected on our property. Bluebirds (are) killed in nest/boxes by fire nuts. (The) impact on ground nesting birds and small numerals is probably severe but difficult to assess.
85. (We) regularly treat for fire ants. Problems have been minimal but have occurred despite the best of (control) efforts.
89. I see sporadic cases of fire ant injuries to small animals, primarily young dogs and cats. Also, (I) see occasional attacks on old, debilitated animals with compromised ambulatory ability. The lesions are primarily (on the) skin and (on the) anogenital areas.
92. Two cases seen by me recently one was a cat bit-by-a car, the other was an ill juvenile gray fox.
95. I practice only on my own ranch and those of two neighbors which I lease.
101. Much of what owners report as fire ant bites is usually staph dermatitis or pyoderma.
102. The worst case I have seen was in a dog that was a fenced yard on a chain. He tried to dig out & was hung under the fence on top of a fire ant bed for 2 hrs. An area of skin 14"x12" died & sloughed. The dog healed well but was extremely depressed and sick for about four days.
104. I found a bull in its stall. As for other cattle and horses that I might to put in those pens, (ants are) a big problem if I do not stay after them. It's easy to lose an animal in a pen if you do not stay after the ants. (The animals) will lay down near one (ant mound) and get up and down. (The ants) get in another pen and so on until they have the animal.
107. Fire ants are seven problem with baby calves or calves weekend from other illnesses. Most calves have temporary blindness from ant stings. Most will recover with treatment but growth is slowed for a period. Many calves may be lost if the owner is not diligent or neglects the calves that are injured. There is also a severe loss in wildlife. I have numerous calls and inquiries about how to treat and feed baby deer that have been blinded

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- and then abandoned by the doe.
108. I see numerous small animal (dog) cases in which I feel ant stings are the initial cause, but most clients do not think they have them. I tell them where to look and, from personal experience here I would say if someone doesn't have any (ants) they are also the people who swear they don't have fleas (and I want to know this secret). I have been battling fire ants on my 5 acres and would like to find a reasonable solution. They are even in the house.
114. In the last 5 years this county has gone from no fire ants to a situation where when I am in the field, fire ants get on me and the animal I'm treating (that is) is down, every time. In other words, if I kneel down, or my patient is down, fire ants are on us, everywhere I go. Something should be done before its too late. The government better start taking care of matters such as this and stop worrying about the environmentalist groups, or pretty soon we won't have an environment we can enjoy.
117. Fire ant problems are increasing in frequency.
119. One other problem (other than dermatitis) we see to small animals is the ants get in the pets food outside leading to disposed of that food.
122. I work part time so I see a limited number of patients but I regularly see minor dermatitis due to fire ant bites - usually as the abdomen. Occasionally and see more severe reactions with significant swelling if the bites are around the face. These cases are usually puppies. In my experience with small animals, fire ants are not a major health problem, but they are a nuisance for people and their pets.
128. In our practice we see primarily young animals affected by fire ants. In calves, it appear to ones that are given birth onto a fire ant mound or lay down on top of one. Also, calves that are sick from some other reason and can't move about become victims. The dogs affected are those kept in pens or those that are sick and are unaware that they are being bitten. Occasionally, we will have people bring us fawn they have found that have been severely bitten. Whether these fawns were sick before being bitten I have no way of telling but I think this wildlife loss is fairly great. I also believe the wild bird population is being hurt by fire ants.
132. Wildlife rehabilitation includes turtles, birds, (and) fawns. The cost was not been computed.
134. Formerly we had toads under our air conditioner but the fire ants killed them all. I would see mounds of soil and the toad, being eaten by the ants, was under the thin layer of soil. We used to have ant lion pits under our back car port and the fire ants have killed them all off. We used to have green *Anoles* come to our night lights in front and the fire ants have killed them all also.
136. (Fire ants are) probably the most devastating ectoparasite in my practice area from an economic and environment viewpoint. With present day control measures virtually worthless and completely non-practical, an all out effort by the state should be conducted to eradicate this organism.
137. This is a problem of increasing proportions in the animal health field. Certainly more research must be done to find the weak link (and) attack that weakness.
141. Fire ants have a real impact on our wild life. May deer fawns, wild turkey poults and quail chicks succumb to fire ant invasion.
148. The economic importance in my area is very significant. The average producer's problem will range from calf being lost to fire ant bites to blindness to loss of production. You could easily ask any producer in Madison, Grime or Leon counties and they are practicing prevention or treatment. This possibly will become more and more of an economic factor in raising cattle, especially (in) the future.
151. It is our opinion that most fire ant injured cattle (and) pets are not presented to a veterinarian.
152. I have personally witnessed horses being bitten by fire ants with no known injury to these animals. I regularly see numerous cases of reported, or rather suspected cases of fire ant exposure. In most instances Whether or not these cases respond to conservative therapy, they make complete, uneventful recoveries. As a point of interest, the incidence of equine cases with tick problems has drastically declined in recent years in our area.
157. Most puppies and some kittens I see in my practice usually, before 3 month of age we will treat for fire ant bites. Also, all wildlife neonates I treat for rehabilitators and myself have ant bite related injuries or illnesses. Most ant bit white tail fawns that are severely involved die, usually 2-3 weeks after treatment is initiated. Most of my exotic bird clients have problems with fire ant wounds and since these birds are difficult to treat; occasionally young birds are lost. Most livestock I treat for ant bite wounds (are) debilitated and/or are very young neonates.
160. This survey is most likely on underestimation for our area. Most ranchers lose calves every year and do not

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- report the loss to us.
167. Usually only see mild localized dermatitis. (I) have seen one case involving anaphylactic type reaction in a young puppy.
170. Especially serious to wildlife, young birds, fawns, cottontails, every species. I feel that an effort to alienate or severely limit fire ant activity is justified by the government to limit threat to wildlife and threatened and endangered native species. I feel that this cost is justifiable. I would support a tax increase to fight them and would indirectly benefit livestock producers as well. I feel, however, that individual producers, pet owners, etc should bear some of the cost.
175. In the spring we get several calls a week of fawn that were found covered with fire ants. Many of them are blinded or have injury to tongue and mouth preventing eating. In the past I saw similar problem in calves. At this time I don't see large animal clients.
180. Fire ants make enjoyment of the outdoors and the keeping of all animals much more difficult. It is imperative that control be developed.
191. Numerous mouth sores from ants in pets' foods. Most of these require no treatment.
195. We just moved into a new subdivision (Willowbridge West Road Belt Way). It was an old rice field and we have a severe fire ant problem in the subdivision.
197. Fire ants only recently began to show up in our area. The number of ants is so small at this time (that we) we do not recognize it as a major problem.
206. I had one calf this summer down with pneumonia. While down fire ants infested the eyes and caused total blindness in (the) right eye and significant blindness on the left eye.
209. Serious for domestic animals, but I believe it is a major cause of death in young wildlife.
215. Economic losses due to lost forage area are severe.
217. Fire ants continually cause headaches for clients especially agricultural clients in more ways than imagined. (They) continually nest in electric boxes causing equipment problems; invade feed and storage areas; produce multiple mounds in hay fields and pastures; damage mowing equipment and cause extremely rough pastures for traveling (driving or horseback); cause problems when treating animals down in pastures (ie. calving calls, downer cattle colics, injuries due to stumbling on rough ground); invade feeding pans and storage areas for small animal clients.
223. Fire Ants are a major problem. There is no way in h___ you are going to eliminate their take over of our state, in my meager opinion. Good Luck! They are the most resourceful and adaptive creatures that I have ever encountered.
239. There are many cases that we do not even hear of because the rancher doesn't find the calf or, when he does, the calf is covered with ants and the death is not reported.
244. I see in (ant) wounded wildlife, ruptured eyes, and sick puppies.
254. In small animals, puppies are the most severely affected. I have (seen) skin infection in pusticular form or death if severely affected (animals). Severe pain and swelling of the skin on the underside belly and between the rear legs causes difficulty in walking. Baby calves are sometimes affected but not as severely as horses due to the tough skin.
259. (In) most cases seen fire ants cause two percent (of the) problems (ie. downers with eyes, vulva, etc. covered with ants.
263. We have seen lots of fire ants on a fawn whiletailed deer that was in captivity.
275. Have the fire ants eaten all the ticks in this part of Texas? We have only seen approximately six tick dogs this season.
276. People would treat if anything would rid the pastures and pens of ants. Find something that will work in the yards and pastures.
278. I have seen one feeding yearling that died, possibly from fire ant stings, but we do not know that there was not something wrong with it that allowed it to be overcome by fire ants. It appeared to die from shock.
282. Frequent telephone inquires as to suspected injury, few requiring care.
286. (I) have cattle in southwest Montgomery County (and) have particular problems with (ants in) feed. (I) have to use fire ant proof dishes for dog and cat food and poultry feeders. For cattle feed (I) have to spray feed through and feed container and corn barrels. (I have) lots of fire ant mounds in (the) pasture (that) sting cattle and calves. (I do) not know how much economic loss they cause. We do have greatly reduced problems with

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- tick problems with all the fire ants around.
287. Fire ants have almost completely eliminated tick problems in my area. I have not seen a tick anemia case in several years.
295. I hate them. The truck stops right over (a) mound if one is near.
304. Stalled horses: fire ants invade (the) stall to go after dropped sweet feed. Dogs chained or kenneled: fire ants invade to go after feed. Free ranging cattle: said to have problems. (They are) continued attacked.
306. Fire ants are a constant problem in Kleberg and surrounding counties. (I) treat dogs, cats, bovine and horses and other species for ant bites. With rain they invade the pastures-particularly hay fields - making it almost impossible to harvest hay. They are particularly destructive to electrical outlets, switches, etc. In farms and houses (ants affect) the wiring, switches and insulation, causing other electrical problems. I'm not familiar with ways of preventing and eliminating fire ants. Something needs to be done.
307. The current folklore here is that if you have fire ants, you won't have fleas and ticks.
310. The first case I saw in this area was on a horse at the roadside park nearby. The horse was on a trail ride from Abilene to Coleman was stung at the Roadside park.
317. In my opinion as a veterinarian and farm rancher, fire ants pose the largest problem we face. Their invasion into gain and mixed feed, attraction to (developing stages of) flies and fierce aggression requires immediate action in the form of research to control this economic pest.
319. Five year old foal apparently laid fawns in fire ant bed. (They) died from toxic reaction. Two foals laid in fire ants (and) developed dermatitis. One developed ringworm in all of the fire ant bites.
320. A rancher told me he thought the cattle tick infestation had been reduced by fire ants, also the quail population.
326. I was very upset when I could not find Logic® in the store in Austin. I had to get it out of town. I feel too much insecticide is being used everywhere. Logic® is the safest and you are preventing new ant mounds from even coming up or maturing.
327. (Fir) small animals, most cases require little or no treatment. I probably see fifty or more cases per year with what appears to be ant bite related dermatitis that require little or no therapy.
330. The largest losses that producers in our area suffer from fire ant are ant bites to the cornea of the eye of newborn calves. These lesions are especially hard to treat and usually the out come is unfavorable resulting in total blindness, partial blindness, and in severe cases anovulation of the eye. Most other losses are in small animals and are associated with dermatitis in the pervined area and bites on the cycloids and mouth. Cats especially seem prone to bites in the mouth due to their most fastidious grooming habits.
331. I think Amdro® works if used correctly.
333. We know of excessive losses of baby chicks though these are not treated at the clinic. We've had healthy adult dogs attacked in their sleep and rendered care to them. Lots of fawns are brought in every year. Virtually all of these die. We are (a) small animal practice only, but from 1979 to 1989 we were mixed and know lots of blind calves etc. Fire ants first appeared here in 1982- 83.
335. Calves born in the summer months seem to by very susceptible to fire ant injuries, especially eye corneal damage.
355. I am a recent graduate of TAMU and I have seen many fawns presented with severe fire ant induced lesions. I believe fire ants are responsible for the decreased population of quail and rabbits in the south Texas area. Although we personally have not lost any calves to fire ants, I have heard other ranchers discuss this as a problem.
357. Anaphylaxis potentially could occur in small animals that could lead to sudden death. This anaphylaxis occurred in humans in Harris County. I know two children and an adult under desensitization (in) Texas now. In cases with pets, sudden death would probably not be recognized if the pet is already dead when the owner arrived at home. No action except to dispose of the body would usually be taken. I've seen several dogs over the years that were scarred from fire ant attacks, but no known deaths in small animals around here. This is a suburban area and parents keep their yards treated because of their kids.
362. Most fire ant bite problems that I see are usually secondary problems. I think most urbanite pet owners treat the fire ant mounds on their premises.
368. Most of my clients are aware of fire ants and treat their yards for them. I probably receive more calls requesting information for home treatment than requests for exam and treatment.

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381. We have seen an increase in fire ants in homes in our area in the past two months, probably due to the extreme heat and dry weather. I feel the ants are seeing better environmental conditions inside homes (and) under foundations. I personally spend no less than \$40.00 per year on home control of imported fire ants.
390. Ants attack neonate fawns (and) get in eyes and nose. Fawns generally die. The Texas zoo used to rehab fawns that were brought in. The majority of them had fire ants in their eyes and nose. We would try to flush them out and wash them out. A majority of these fawns did not live. These were just a few of the total number in the wild so there's no telling how many actually are killed by fire ants. Others have commented the same type of occurrence may be happening with the dove or quail population. Food for thought.
396. Have to spray self with insecticide prior to field work. It may not be recognized (that) most (ant caused) blindness has been (a) 50% to 100% loss of vision.
400. (Ant caused) loss of suckling young rabbits. Fire ants are a severe pest in parks and recreation areas causing significant injury to children and adults alike. Wish that something could be done to control their spread in west Texas.
416. Bushwacker™ is only product which has had any long term control on my premises.
417. I have had clients who have had to move cattle to a separate premise to calves out due to (the) fire ant problem. I expect to be bitten whenever I go out on large animal calls. Most moribund animals will have fire ants on them. It is hard to estimate the economic loss. I suspect it is greater than we might think. I have found the product Logic® to be most effective in controlling fire ants in my yard and around my clinic and would hope that it is released for agricultural use soon. I'm sure there are many unreported death losses in calves each year.
418. Of all the normal things seen about fire ants the most (unusual) sight was fire ants living, eating or loving (in) a still-green inside cow patty. What is it they don't love?
419. Many clients attribute various skin conditions to fire ants, even with no known exposure to ants.
421. As a small animal practitioner, most of my cases are puppies that have unexpectedly encountered fire ants.
422. When I served on the board of the Dallas County Farm Bureau, we obtained 6000 lbs. of Mirex corn cob mix which we distributed to farm Bureau members, ag. teachers etc. Then USDA had an aerial application program. Nothing worked since the introduction of fire ants into our area. I have noticed a significant decrease in the severity of ticks on large animals. Cotton farmers report a decrease in the pink boll worms. I cannot say that fire ants attack healthy, live animals or merely attack weak, debilitated, calves etc. I personally believe they are an annoyance rather than an economic threat in our particular area (Dallas, Tarrant, Denton, Wise counties). Reports of wildlife deaths (quail and small game) are unrealistic to me. We have tried control measures such as Mirex, diazinon and Dursban® granules without any seeming long lasting results. We now only try to control them in the yard around gates, picnic areas, gas tanks, children play areas and other places they might come into contact with humans.
423. I want to eradicate fire ants!
424. Initially, most people in this area aggressively treated fire ant infestations. They found this very expensive and generally ineffective. Now most people have given up on treating any pastureland and they concentrate on treating small pastures, tracts, lots and pens areas and close to their house.
425. Loss is often insidious. Loss of grazing area or a diminished use of grass near mounds. Many people treat calves, dogs, etc. without contacting (a) veterinarian because after (the) first case, they know how.
426. (Fire ants) may contribute to death by dermatitis, conjunctivitis, rectal irritation, secondary infection rectal irritation of swine (5 percent). Swine usually (have) minimal mortality unless (the) piglet is already weak and dying from another condition. However, probably at least 25 to 100 piglets die from primary fire ant stings per year in Texas. (The) most common cause of dermatitis in slaughtered hogs may lead to carcass trim loss through skinning affected areas. Have seen rectal irritation and conjunctivitis one baby calves from fire ants. It is interesting that the fire ants do not seem to affect the numbers of feral swine we have in Texas. (I) estimate (an) average as high as 1 million head and increasing. It is also possible feral swine are affected, but they are so prolific that they simply overcome fire ant mortality to piglets due to numbers reproduced. At any rate, feral swine numbers continue to increase.
432. Seventy five percent of the animals that I see are moribund are beyond treatment. For all purposes, your questions do not give an accurate survey.
434. Our practice has been presented with many animals with fire ant bites usually diagnosed by owner if the

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- animal. Yes, I have seen fire ants on dead carcass but I can not say I have seen animal killed or die from fire ants bites. I have received numerous fire ant bites and they always follow with a small pustules. I have examine pups with small pustules (the) owner says (where from) fire ants, but I can't recall any pups dying from these bites.
435. Ever since fire ants showed up in East Texas it decreased the tick populations. We see less tick infested animals. In the years before they arrived you couldn't go into bottom land with out getting into a bed of seed ticks. Since ticks carry disease (Lymes) this may be a trade-off by having them around. Fire ants, however, have been very detrimental to wildlife especially to an Elk Farm in our area. They kill the baby elk before they are able to rise. Quail and dove populations have also decreased.
440. Two livestock-related areas of economic loss not addressed in this survey: 1) damage to water pump and outdoor lighting power sources causing increased maintenance costs and time spent checking water sources; 2) loss and damage to feed. Probably five percent of some grain type feed are eaten or ruined by ants. Often entire sacks or pellets of feed will be rendered unpalatable by fire ant infestation. Often a more expensive pellet feed must be used to prevent infestation. Hay is frequently infested, resulting in reduced palatability and lowered hay quality. Beyond the injury to eyes of newborn calves, the most serious fire ant related problems we encounter are in sick, weak, or injured livestock. I feel that fire ants are a significant factor in reducing the survivability of many newborn calves and down cows. Eye injury to calves and death of hatching chicks are the only conditions I can ascribe directly to fire ants, but many other conditions are exacerbated by ants (i.e. downer cows, dystocia, weak newborn calves).
444. Being (a) small animal practitioner, my experience with fire ant bite cases is limited. I have seen a few cases (less than 5) consisting of dogs (no cats) seen exposed to ants in the owners yard or while on walks around town or at local city parks. The cases I have seen have been confined to dermatitis treatment of bite wounds and secondary infections. One animal was somewhat in shock and treated accordingly. All cases responded to treatment and recovered completely without complications.
452. The majority of fire ant cases I see are very young puppies and kittens with generalized stings. Most do well (and are) not severely affected. I have seen some cases of systemic allergic reactions as well as anaphylaxis.
459. We recommend people have their cows/heifers calving out before June and after September because of the death loss due to fire ants. We see dogs hit by cars that have multiple pustules that the owner has treated. Most people in our area have dealt with fire ants for so long, they do most of the treatment themselves. Five to ten years ago we saw a lot more cases at the clinic. Now we hear clients tell us about fire ants when they come in for other problems. To prevent skewed (results), I hope some form of input is being made by livestock producers.
464. I see many more animals with the fire ant type dermatitis lessons than are actually treated as this is an animal control facility and not a private practice.
466. Mostly white tail fawns, newborn or young puppies and outdoor fed dogs.
467. Blindness from corneal damage limited to wildlife, usually fawns.
469. We see a high mortality in small animals, puppies, (and) kittens affected by fire ants. We see weak and stunted animals in larger breeds especially cattle, sheep, (and) goats due to their inability to move when affected by fire ants.
470. I believe fire ants to pose the greatest single threat to livestock, wildlife, and eventually human survival of any pest. We need dramatic increases in research to establish control (in ways) other than (with) pesticides.
474. One calf found by (its) owner was dead near (a) fire ant bed. One owner reported (this) past month that 10 pups were killed at birth (were) covered with ants. Rangeland and calving pastures otherwise uneconomically justified.
479. (Ant problems are) usually secondary to (the) main reason patient was presented for exam. Complication. Fire ants bites in small animals that I treat are usually debilitated patients that were unable to move from the ants.
480. Many cows fire ant injures and deaths are most are not reported nor do we see then as veterinarians. The losses due to destroyed pastures, loss of hay production, destruction of machinery, are much more of problem (than) the actual fire ants. This is a major insect pest and it seem no one has the answer to its control. We need a state wide control program including spraying etc.
481. (The) main fire ant problem in my practice is that related to downer/convalescent animals and newborns and fresh hay handling. They are a serious concern for me as a parent also, as my young children are growing up

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- in the country and we constantly have a vigil for fire ant populations around our farm. We use Amdro® with a fair to moderate success rate. Would welcome some form of biological efforts.
487. We have seen one kitten affected by fire ants. It was very debilitated. The owners opted for euthanasia.
494. Fire ants are becoming more important with each year. Cases (are) increasing dramatically in the last 2 years. I would expect them to worsen.
497. I have had baby calves brought in that looked like they had been dipped in boiling water. All of the hair on the legs was gone and some of the hooves were gone. We have lots of eye problems especially when it is dry and the ants are looking for moisture. I have experimented mixing ants from different mounds hoping they would kill each other, but I think I only created hybrids.
498. I think we see fewer ticks.
500. A very common morbidity problem. I see fire ant bites in animals daily. Most make the animal uncomfortable but don't need treatment.
504. In my small animal practice I have had numerous clients bring their dogs in for what they suspected were fire ant bites (pustules with erythema). In actuality, I suspect they were a staph hypersensitivity an allergy- related dermatitis. Treatment for the dermatitis with appropriate antibiotics was always successful. I haven't seen the dogs bothered as much by fire ant bites as much as we humans are!
505. We see damage to the eyes in young animals. Often we see calves that have been blinded and suffering from heat stress and strokes. Any down animal must be closely monitored and in older animals the fire ants only affect those that are injured and can't get away. I strongly advise my clients not to have cows calving in the summer because that is when we see all the blindness problems. We almost never lose an animal to fire ants unless we have associated heat stroke problem.
507. My practice is mostly with small animals. Most of the fire ant cases that I have seen have involved puppies or kittens or injured animals unable to move. It seems to be more of a problem in wet weather when the ants were concentrated in areas not saturated by water.
513. (The) most serious condition I have encountered is in newborn animals when the fire ant attack the eyes leading to blindness and inflammation affecting the central nervous system and causing death.
516. Gastritis cases may be much higher in nature. (The cause of) the upset (is) not always known. (There are) often multiple problems.