

Skin & Ears - Report on the 1993 Survey

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This is a non-technical report written for the non-statistician. A more detailed statistical report of the results will be presented to the ESA Health Sub-Committee from whom copies can be obtained.

Introduction

A total of 714 questionnaires were returned, and these were entered into a computer for analysis. I am grateful to Mrs Linda Taylor and Mr Keith Smith for laboriously typing and checking all of the data entries.

Because the majority of reports did not have a formal veterinary diagnosis, I have not attempted to separate the various conditions reported on the survey forms. For the purposes of this analysis, I decided simply to ask the data what factors appeared to be associated with English Setters having "problems", and have not separated skin problems from ear problems. Consequently, where I refer to "skin problems" please remember that this may include "ear problems" as well.

There is very probably some bias in the data. Human nature being what it is, I think that ESA members are more likely to have completed a questionnaire if their dog suffered from skin problems than if it did not. Thus, I do not believe that the figures reported necessarily give a true picture of the extent of skin problems in the breed. However, I think that it is still valid to make comparisons between affected and non-affected dogs in the way that they are kept, fed, housed, etc. I also think that it is valid to make comparisons between the ages, sexes, colours, etc. of affected and non-affected dogs.

I have used "male" and "female" to cover "dogs" and "bitches". When I use "dog" it refers to both sexes. Where I say that there is a difference in some character - e.g. "males are bigger than females" this means that the difference between the two is *statistically significant* : i.e. that it is too big simply to be due to chance, and there is probably a biological reason for the difference.

I have separated the analysis into sections. The first of these relates to general details about the dogs included in the survey. The second looks at the frequency of skin problems in the breed in relation to age, sex, colour, etc. The final part examines the relationship between skin problems and various aspects of the dog's "environment".

Age, Sex and Colour of Dogs in Survey

There were 259 males and 432 females in the survey as shown in the Table. One liver animal has been omitted because I can't do much with a sample of one! There is no evidence of difference in colour proportions between the sexes.

Sex	Number	Orange	Blue	Tri-Colour
Males	259	31%	41%	28%
Females	432	34%	34%	32%

Most owners gave the ages of their dogs, and there is no evidence of age differences between the sexes in the survey return. Nor is there evidence of difference in the ages of the colours of the dogs in the survey.

Sex	< 1	1 - 2	2 - 3	3 - 4	4 - 5	5 - 6	6 - 7	> 7
Males	14	27	25	25	20	26	28	91
Females	24	47	48	44	43	33	25	157

Problems, Age & Sex

There is no evidence that owners report more skin problems with one colour than another, but both age and sex have an effect. Males are more likely to be affected than females:

Sex	Number Reported	% with Problems
Males	329	68%
Females	356	57%

The incidence of skin problems increases with age. Note though that about a third of dogs less than a year old reported in the survey suffered from some form of skin problem.

Age	Number Reported	% with Problems
1	41	37%
2	75	36%
3	75	43%
4	69	51%
5	64	47%
6	62	63%
7	52	54%
> 7	259	59%

Skin Problems and Housing/Bedding

Three categories of housing were recognised: indoors, outdoor and both.

	Number Reported	Indoors	Outdoors	Both
Frequency	638	63%	21%	16%

Six categories of bedding, of which three were rare.

	Number Reported	Natural Fibre	Synthetic Fibre	Straw	Paper	Shavings	Other
Number	652	24%	54%	< 1%	17%	< 1%	3%

The relationship between bedding and housing is complicated. Owners appear to use natural bedding more if their dogs are housed indoors, whereas (perhaps not surprisingly) shredded paper is rarely used as indoor bedding. Dogs that were described as living both indoors and out have bedding that is more similar to dogs that live outdoors - usually because they sleep outdoors in a kennel, and come in during the day.

	Number Reported	Natural Fibre	Synthetic Fibre	Paper
Indoors	397	34%	64%	2%
Outdoors	121	5%	41%	54%
Both	103	14%	47%	39%

Turning now to housing and bedding, it is evident that there is a relationship between these and the occurrence of skin problems. Dogs living indoors are reported almost twice as likely to suffer from skin problems than those that spend part or all of their time outside.

	Number Reported	% with Problems
Indoors	408	64.4%
Outdoors	129	36.4%
Both	109	39.4%

Only three classes of bedding are sufficiently common in the survey responses to be amenable to analysis. However, these show striking differences. Dogs that live on shredded paper are much less likely to suffer skin problems. Although it appears as though dogs that live on synthetic fibre are less affected than those on natural fibre, this difference is not significant.

	Number Reported	% with Problems
Natural Fibre	160	62.5%
Synthetic Fibre	349	58.7%
Paper	111	31.5%

However, these two results are made complicated because owners use paper or fibre differently depending upon whether their dogs live indoors or not. We can turn this to our advantage, first by looking at the effects of bedding on the dogs housed indoors or out, and secondly looking at the effects of housing on dogs kept on the same bedding.

The following table shows the proportion of dogs suffering from skin problems in relation to their housing and bedding. There are significant differences between the columns, but not between the rows. This means that dogs living indoors more likely to be affected - whatever their bedding. Although there are slight differences among the three categories of bedding, none of these is large enough to be significant, and we can conclude that bedding plays little part in determining whether a dog will suffer from skin problems compared with its housing.

	Indoors	Outdoors	Both
Natural Fibre	65.2%	20.0%	53.3%
Synthetic Fibre	64.3%	40.8%	36.7%
Paper	62.5%	28.6%	30.0%

The numbers are a bit small, but there is one clear effect: if the dog is kept indoors, it is more likely to have skin problems whatever its bedding.

Skin Problems and Other Animals

There is no evidence that the presence of animals other than dogs (cats, horses, rabbits, etc.) has a major effect upon the incidence of skin problems in the English Setters reported. However, dogs kept alone were more likely to be affected than a dog in a group.

	Number Reported	% with Problems
More than one dog	575	52.0%
Only one dog	80	73.8%

Perhaps not surprisingly, there were more likely to be problems if another dog in the household was affected:

	Number Reported	% with Problems
Other dog affected	183	66.7%
Other not affected	354	49.4%

However, once again there is a relationship between the presence of other dogs and the way that they are housed: if an owner has only one dog, it is more likely to live indoors.

	Number Reported	% only dog
Indoors	410	17.6%
Outdoors	133	3.8%
Both	110	1.8%

The number of single dogs kept out of doors is very small, so analysis is difficult. However, only looking at dogs kept in groups, there is a significant difference between reports of skin problems when the three methods of housing are compared.

	Number Reported	% with Problems
Indoors	336	61.9%
Outdoors	124	35.5%
Both	106	40.6%

So, again, it appears that the housing has a major effect upon the likelihood that a dog will be affected with skin problems.

Skin Problems and Diet - Meat

Several different meats were used by the respondents. Some of these (red meat, chicken, fish) showed no association with the occurrence of skin problems. Others, however, did show a possible connection:

	Number Reported	% with Problems
Tripe	353	49.3%
No Tripe	298	60.7%

Tinned food	293	60.4%
No tinned food	359	49.6%
Cooked meat	218	55.5%
Raw meat	120	42.5%

All of these differences are statistically significant, so there is evidence that diet may play a part in affecting whether a setter suffers from skin problems. Feeding tripe appears to reduce the risk of dogs developing skin problems, as does serving uncooked meat. Conversely, tinned food appears to increase the incidence. However, just as there are interactions between housing and bedding, so there are interactions between housing and diet: Owners who keep their dogs indoors are more likely to use tins or to cook their dog meat.

	Indoors	Outdoors	Both
% Tripe	47.7%	67.9%	66.7%
% Tins	60.1%	34.5%	40.0%
% Cooked	33.0%	50.6%	33.0%

And again, as with bedding, the main factor here is the housing. When dogs kept indoors or outdoors are examined separately, there is no effect of diet on the percentage of affected dogs. It does not seem to matter what the dog was fed on, in the dogs from the survey, the incidence of skin problems is much more influenced by housing than diet.

	Indoors	Outdoors	Both
Tripe	63.9%	31.0%	32.9%
No tripe	65.3%	48.8%	50.0%
Tins	65.2%	41.9%	36.1%
No tins	60.1%	34.5%	40.0%
Cooked meat	68.2%	41.9%	36.1%
Raw meat	60.1%	34.5%	40.0%

Skin Problems and Diet - Complete Foods

Most complete foods do not appear to have any effect upon the incidence of skin problems. Sample sizes were small, so it is difficult to reach any firm conclusions, especially since some foods may have been used **because** the dog was

already suffering, and so the association is not necessarily causative. However, this aspect may well repay further study.

Skin Problems and Hygiene - Cleaning Materials

There is evidence that cleaning materials may have a significant effect upon the incidence of skin complaints.

	Number Reported	% with Problems
Water	16	18.8%
Disinfectant	277	44.4%
Detergent	133	70.7%
Soap	15	46.7%
Vacuum Cleaner	18	72.2%
Other	160	59.4%

But again, there is an interaction with housing, for owners tend to use detergent, soap and vacuum cleaners more if the dog lives indoors. The following table shows the number of respondents who use each cleaning aid and where their dogs live.

	Water	Disinfectant	Detergent	Soap	Vacuum	Other	Total
Indoors	1	107	121	10	15	121	375
Outdoors	11	98	4	4	0	15	132
Both	2	75	8	1	1	22	109

Several of the categories had less than 10 respondents, and too few for analysis. They have been left out of the next table where it can be seen that disinfectant is the only cleaning aid commonly used among all three classes of housing. As with several earlier findings, it seems that the effect of housing is greater than that of the cleaning aid itself.

	Water	Disinfectant	Detergent	Soap	Vacuum	Other
Indoors		52.8%	73.3%	40.0%	73.3%	69.4%
Outdoors	27.3%	37.9%				28.6%
Both		40.5%				31.8%

It seems that cleaning reagents do not seem to be associated with skin problems among animals kept out of doors, but those indoors are slightly less likely to be affected if the owner uses disinfectant for the bed and bedding than simply uses a vacuum cleaner or detergent.

Conclusions

The results of this survey seem to suggest that dogs kept indoors are more likely to be affected with skin problems than those that spend all, or part, of their lives outside. The other factors included in the survey appear to be more or less side effects. Thus, if an owner only has a single dog, it is more likely to be affected than a member of a group. However, it is also more likely to live indoors and to sleep upon natural fibre, especially in view of the mess that shredded paper will cause in the house.

The presence of animals other than dogs is not a major factor, although if an owner has a single dog, it is more likely to be affected than one of a group. However, if an owner possesses a single dog it is much more likely to live in the house.

A dog fed on tripe is less likely to have problems, and one fed from tins is more likely. Again, though, there is this interaction with housing. If an owner has several dogs, practical economics decrees that they are less likely to be fed from tins, and more likely to be given the cheaper alternative of tripe - cooked or otherwise. So, again, the housing seems to play the significant part in the condition.

At the recent Annual General Meeting of the E.S.A., Mr Keith Thoday from Edinburgh University reported that many of the skin conditions that he saw in his work involved "atopic dermatitis" - allergic type reactions. He showed that these often seem to be caused by allergenic agents that live in houses - the "dust mite" being one of the most common. Many of the results of this survey support this suggestion. The dust mite is commoner indoors, and especially in those rooms with carpets. Keeping a dog under such conditions is likely to increase the chances that it will develop allergy reactions, such as dermatitis.

However, keeping the dogs out of doors all of the time is not the whole solution. There are still plenty of reports in this survey of dogs that live outdoors that have developed skin problems. Indeed, Mr Thoday reported that English Setters are one of the worst breeds for developing dermatitis which suggests that there is a genetic component to the susceptibility. Unravelling any genetic component would be very difficult, not only because of the inherent difficulty in analysing such a complex condition, but also because of the reluctance of many breeders to permit detailed veterinary/genetic investigation of the pedigree and history of their stock.