

ILU Reproduction Survey report. September 2011

Introduction:

At the meeting of the International Leonberger Union in September 2009, there was a discussion about what appeared to be a high number of bitches failing to conceive following mating. It was decided to undertake a survey to learn more. In March 2010 the survey was launched. It was posted on the Union website in a “clickable” electronic format in 4 languages, as well as being separately circulated to owners via national Leonberger clubs. In September 2010, an interim report was briefly presented at the Union meeting in Leonberg. The survey was closed in March 2011, having been “live” for 12 months. The following is a report on the data gathered.

General findings:

Of 128 forms returned, 108 reported that the bitch achieved a pregnancy representing a conception rate of just over 84.5%. This is slightly higher than that rate of conception stated in the interim report at last year’s ILU meeting, due to the arrival of a few more completed forms. I believe this to be a false estimation and in my opinion, the actual rate of conception is likely to be somewhat lower than this. This conclusion is based on both my own anecdotal evidence (by word of mouth as well as reported failed matings posted on the internet etc.) as well as by the evidence of a high percentage of empty bitches reported from the German club 2 years ago when this survey was commissioned. The great numbers of misses reported then was in fact the motivation for attempting such a survey in the first place.

As with any voluntary survey, it is human nature to celebrate the good and under-report the bad, despite the fact that complete anonymity was provided. However, the survey did throw up some interesting results. One of the most significant for me was the great number of Leonbergers delivered through surgical intervention, e.g. by C-sections. The final figure shows that 27% of births involve caesareans. I do not know how this compares with similar breeds, but it does seem a rather high percentage and perhaps represents a lack of reproductive vigour in at least some of our lines.

Detail of factors covered:

The survey offered breeders the opportunity to comment on a wide range of factors that may have had some influence on their reproductive program. This ranged from location of household, feeding and vaccination patterns, through ages of dam and sire, to use of pre-mate tests and timing of mating, etc. Breeders were able to fill in as much or as little of this supporting evidence as they chose. Most did not have details on lifestyle of the sire. The following is an overview of the data gathered.

The location of the home, either rural or urban, does not appear to present a significant factor in reproductive success. Of the 20 failed matings reported, 9 lived in rural locations, 10 lived in an urban environment. One did not report.

The number of dogs living in the home showed no significant impact on mating success.

The age of the dam in successful matings averaged 3.4 years and does not appear to have made a significant difference. The age of sires of failed matings was 4 years, while the age of sires of successful matings was slightly higher at 4.2 years. Again, this does not seem to have been a significant factor. The oldest successfully mated dam was reported to be 7 years old, while the oldest successful sire was reported to have been 9 years old.

There was no strong pattern of past failed matings indicated in reproductive success.

Vaccinations did not appear to have any influence on success. Failed matings, where previous general vaccination was reported showed an average of 5 months prior to mating, with a range of 1 month to over 1 year. This was not significantly different in successful matings.

Of the 20 failed matings, 14 reported that the bitch had been vaccinated for rabies, 6 reported that she had not been. Of the 20, 16 reported no use of the canine herpes vaccine, 4 used it. It appears that these frequencies do not significantly differ from those found in successful matings.

Antibiotics were used on the bitch in about half of all matings, and seemed to show strong regional preferences. In the case of failed matings, there were 6 that used antibiotics and 9 that did not, which does not appear to represent a significant difference affecting conception rates.

117 of responses included details of the dam’s diet, with 66% of the total reporting that they fed a combination of both commercially produced food and natural foods, with only 8 reporting a completely natural diet. Of the bitches that failed to become pregnant, 15 were fed the combined diet (75%), three a purely commercial diet and 2 were fed a natural diet.

Although the sample was quite small, it would appear that diet made no significant difference to the number of misses.

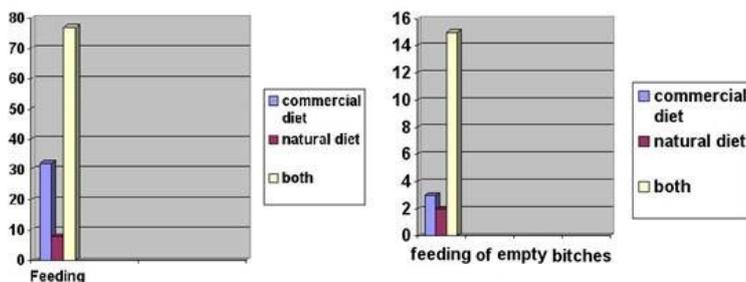


Fig. 1

Fig. 2

Date of previous worming as well as flea and tick treatment did not show any significant difference between failed and successful matings.

The number of months from the last heat cycle reported in misses was an average of 10, while the number of months between heat cycles in successful matings was reported as being 6.19. Among the successful matings, one bitch was reported to have been 18 months between cycles. When this individual is removed from the tally, the average time between heats in successfully mated bitches shows as being exactly 6 months. These findings may indicate that females who fail to conceive tend to have longer spans between heat cycles.

Sperm quality tests seem to have been done rarely, so we have insufficient data upon which to draw any conclusions.

Figure 3 below shows the days in the bitches cycle that matings were done based on the overall forms returned. There was no significant difference between mating days of failed conceptions and those that were successful in achieving pregnancy. The earliest day of mating in the bitch's cycle was reported as day 4, while the latest mating took place on day 25 of the bitch's cycle. (In the case of the mating on day 4, there were apparently no less than 8 pre-mate tests conducted, both cellular examinations as well as progesterone blood tests. She conceived and one puppy was delivered by c-section. Comments submitted with the data stated "female has extremely short cycle; male was older".)

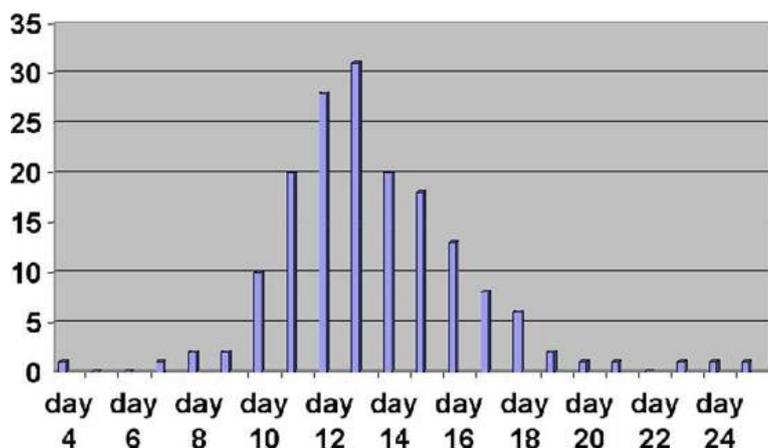


Fig 3

Another observation that one might draw from these statistics is that, on average, the majority of Leonberger bitches ovulate after the 11th day of their cycle, and that therefore, the old "rule of thumb" to mate on days 10 and 12 may well be wrong for our breed. 12 and 14 would appear to be better guesses for optimum mating days in the majority of cases, but of course the data shows that some bitches will be quite wide of the norm.

Of the 20 misses reported, 11 were the result of a natural mating, 6 followed artificial insemination using fresh semen, and 3 resulted from the use of frozen semen. When we look at the success vs. failure rate of using artificial insemination in isolation, we see that 12 breeders reported successful pregnancies based on using fresh semen, and a single success based on the use of frozen semen. There did not appear to be any who reported using only chilled semen. I believe that the results gathered on the use of AI are insufficient to draw any real conclusions from as they are likely to be too small a sample. We know of ample anecdotal evidence of successful use of both chilled and frozen semen, but there is nevertheless little doubt that these methods are not as likely to succeed as is a natural mating.

As far as the births themselves, the survey indicates that the average litter size is 8.1 pups. One interesting note is that one case of conjoined (Siamese) twins was also reported. The comments submitted by breeders, when taken as a whole, contained nothing particularly remarkable and indicated no patterns of interest that would account for failures to conceive.

Conclusions

As stated in the introduction, I believe that the most important result to emerge from this survey is the high number of surgically assisted births, 27% of delivery involved caesarean procedures. I strongly suspect that the overall rate of failed matings is greatly under-reported here.

Although I am fully aware that voluntary surveys of this sort produce infamously poor returns, overall I am unsatisfied with the survey as a whole. On reflection, were I to start again today, I would do it quite differently and I think there are some lessons to be learned in terms of how the ILU might carry out future surveys. When the decision was taken to do this survey, instructions were given to contact via email all the delegates from the national clubs to invite ideas and input for the formulation of the survey questions. This resulted in two things; firstly a delay in putting it together and secondly a long form containing no less than 48 questions. In hindsight, I would recommend the following approach: Firstly, appoint a team of no more than 3 to both compose and compile the results; secondly, ask that team to identify the key one or two areas of information they seek to learn more about, and then instruct them to create a questionnaire with no more than 10 questions on it. Any more and it presents too daunting a prospect for the average owner / breeder, especially when faced with the prospect of filling in multiple forms, as was the case with this survey. I believe that this will result in a much higher return rate and will ultimately prove to be a more successful effort.

Finally, I'd like to add my heartfelt thanks to Hein Sibrijns for his invaluable help in preparing the web-based format of the survey as well as for organising all the translation efforts. This survey would not have been possible without his great efforts.

Sharon Springel
 Chair health subcommittee
 Leonberger Club of Great Britain.

September 2011