

## Sheet 1

This presentation is about a special dog, her name is Mildred. Today we want to tell her story: from mating till we discovered she is a special dog, our journey.

For those who don't know us, let me introduce ourselves. We are Luc Aben and Erna Kuipers and we breed Dalmatians since 1996. The name of our kennel is Namara's Dalmatians in the Netherlands.

## Sheet 2

Just like every dogbreeder our story begins with the search for a fitting male to mate with our bitch. Of course we had some wishes regarding the type of male. The most important thing was ofcourse good health and great character, but we also looked for a partner who could bring us a bit more substance. And that is what we found.

So the next thing to do was having a deeper look into the pedigree's to find out if there where any health- or character-issues in this combination.

We already knew that years ago 1 or 2 dwarfs were born in Norway and we also found out that the father of these dwarfs was present in the pedigree of the chosen male.

## Sheet 3

That did not particular worry us because this dog was not present in the pedigree of our bitch, so as far as we knew, there wasn't any argument to cancel a mating between them. In hindsight we did not know so many things that others had knowledge of. We just knew so little at that moment.

## Sheet 4

On october 9th 2015 our litter of 6 was born. Unfortunatly one stillborn and one was put down due to an open palate. Still there where 4 big and strong pups left, with a birth weight of more than 500 grams each. Three males and one female.

## Sheet 5

The puppies grew prosperously although one particular thing was noticed. In 2 puppies (the black male and the brown bitch) the fur was longer and softer than the other two puppies and all the puppies we used to breed. But their mother has a slightly softer coat too and so did their grandmother, so we didn't see a problem in that.

## **Sheet 6 and 7**

The puppies reached the age of 8 weeks and were ready to go to their new homes. The brown bitch stayed with us and we called her Mildred, Namara's Highway to Hell. The perfect name for the road we had to take with her, but we did not know that at the time.

## **Sheet 8**

Mildred was 3.5 months old when we found out that her feet were not straight. Her feet turned out, as we call it 'in French position'. But this also did not really worry us much, because it is quite common with puppies and, in almost all cases, they will grow out of it.

Three weeks after this observation, we saw her black brother (Gus) for the first time after he moved to his forever home. His feet were also not straight aswell. At that moment, we started to worry and we decided to make an appointment with the vet.

## **Sheet 9**

X-rays were taken from her legs in different positions and were sent to various specialists in 3 different European countries (Netherlands, Germany and Sweden) for review. Because of the fact we also breed Bassets Artesien Normand, we are quite familiar with the phenomenon of French forequarters. So we suspected that Mildred and Gus would suffer from Radius curvus and this suspicion was enclosed together with the x rays sent to the specialists.

## **Sheet 10**

However, the reviews soon came back and all were negative in terms of Radius Curvus. The bones in Mildred's legs were measured and all sizes where within the margins. There was no reason to think about a disorder in her bones. The advice given was: Rest, smooth motion and do not do crazy things. There was nothing wrong with her and everything would be fine in time. Time was all she needed. In short, no Radius Curvus. This result was not satisfying for us but we had no clue where we had to go to find out what was wrong with her and her brother

## **Sheet 11**

After a month of rest and adjusted movement, there was still no improvement in her paw position. After consultation with our vet, we decided to look at it from a different angle. It was clear to us that something was wrong and if it was not a Radius curvus, it had to be something different.

We started with the determination of the common blood image but no deviations were found. Dwarfism also went through our minds, but we could not put our finger on it. So

various tests were conducted on dwarfism. These were DNA-tests for other varieties of dogs who were already tested on dwarfism.

In addition, there were also suspicions that they might have food shortages. We have been feeding our dogs for 15 years in a natural raw way and there are different opinions about BARF. We didn't close our eyes for that and were open for every method to find out what was wrong.

But all these tests came back negative

## **Sheet 12**

Meanwhile, we read everything we could find on this subject on the internet. With only one goal: To find out what the heck was wrong with Mildred and Gus. Our possibilities became pretty exhausted because of the negative results of the tests. In our opinion we had one more option: it had to be Rickets. A severe vitamin deficiency. Again, blood was taken and sent to the laboratory. We were convinced that we had finally discovered what she was suffering from. This was in early April and Mildred had become 6 months old. Unfortunately, the results of the test were also negative.

So now all our options were exhausted. So we decided to do another test to measure the growth hormone and to make a new appointment with the specialist because we just did not know what to do anymore.

Mildred limped with her left frontleg and things did not get any easier.

## **Sheet 13**

On April 20 2016 we had an appointment with the specialist and we finally got a diagnosis: Radius Curvus in both legs with severe damage in both elbows. We asked him how that was possible. The last diagnosis in February said everything was within the standard margins. (when we had our suspicions already). The orthoped could only answer that it had not been seen in the X-ray photos at this very early age.

At this moment, Mildred's elbows were already completely broken by the uneven growth of the radius and ulna so she had to be operated urgently.

## **Sheet 14**

On April 22 she had surgery on both elbows (LPA and LPC) and on her left leg. Both elbows had been cleaned and refreshed with the aim of preventing as much osteoarthritis.

On her left leg an ulnectomy was performed, which meant that her ulna was sawed to create space for the curvature radius growth. Between the space that developed, belly fat was placed to prevent the bones from growing together in an early stage. During the surgery, 1

mm was removed from the bone and the x-ray which was taken after surgery, showed that this space now was widened to 1 cm. The tension on the radius released.

The original plan was to do both legs at the same time, but because of her left elbow gave such a bad image, it was decided during the operation to do only one leg and the other 3 weeks later

## **Sheet 15**

After surgery, rehabilitation began and after 4 days she had the first check. With the exception of some skin irritation, Mildred had no problems and felt excellent. A little bit too excellent so we had to put her into a crate during the day. Rest was a requirement but she also had to use her leg. This would contribute to her recovery. Due to the pressure exerted by walking on her bones, they should be automatically pressed to the desired position.

12 days after surgery, Mildred got the first change of bandage and we could see how she would use her leg without connection between the ulna. This went perfectly from the very beginning!

Mildred was kept apart from our other dogs and she slept with her mother Melon and Erna in the guest room. Three weeks after the first surgery and after the first rehabilitation time, her 2nd leg was operated on.

Gus was also brought in for his first surgery. From the beginning it was very clear Gus had the same problems as Mildred. In consultation with the owners of Gus we decided that Mildred would undergo the main investigations and let Gus benefit from the results. The risks, but also the costs for Gus were thus minimized. We had informed and involved the owners of Gus with all thoughts, suspicions and investigations from the very first beginning. We had, and still have, very close contact.

## **Sheet 16**

On May 27th, Mildred's bandages were removed from her right leg and we could see how she would walk when both legs were operated. She immediately walked away without any limping! The movement could now adjust and she had to use her legs completely again.

Of course, playing, jumping and running at first was not allowed, but could be build up in a slow pace. We still slept together in the guest room.

Because it was clear that they remained behind in growth, our conclusion became clearer. Mildred and Gus could also be dwarfs. We took pictures with her mother so the difference in size was obvious and we started with our search on the internet again, but that did not make us much wiser about the subject.

The orthoped was less worried about Mildred's growth and was expected she would grow in height as she recovered well. After all, dogs grow for a month or nine.

## **Sheet 17**

Halfway June, the last check after surgery took place. Her bones appeared to be in good condition. Mildred moved well and there were no complications. The surgery and rehabilitation had been successful.

The x-rays showed some bone growth between the sawed bone and that was a good thing. Mildred's activity could be extended in longer walks and careful play. Jumping was still not allowed. However, she was as tall as before the first surgery and again we expressed our concern about this. We expressed our suspicions that Mildred might be a dwarf.

At this moment the orthoped shared this suspicion and sent us to see an internist with Mildred where further investigations would take place.

## **Sheet 18**

A week later we had the appointment with the internist.

The findings were:

- Different position of the legs
- Relatively long hair
- Short tail
- She looks like a dwarf but phenotype did not really seem to be a GH deficient.

Mildred had a thyroid test to see if these abnormalities would show up. If the results were negative, we should make a follow-up to the Veterinary University in Utrecht because the possibilities at the specialist clinic were exhausted. The test was negative so in early July, Mildred had an appointment at the University.

## **Sheet 19**

Mildred was examined by Dr. Galac and Dr. Kooiman and a whole team of veterinary students. Blood was taken and she received a so-called stimulation test. This is a test that injects a particular substance to stimulate and measure growth hormone in the pituitary. In the event of a shortfall, Mildred would most likely lead to pituitary dwarf growth, which occurs predominantly among German shepherds. When the growth hormone fell within the standards, this diagnosis was also excluded and we were done with research in the Netherlands. There would be no more possibilities.

In October, the test results returned. Mildred had sufficient growth hormone and was excluded from pituitary dwarf growth. The fact that she was a dwarf was now very clear to

everyone but proper diagnosis could and still can not be made. At present, the most likely diagnosis is: Dwarfism of the achondroplastic type.

## Sheet 20

In the meantime, we decided to bring the story about Mildred and Gus into publicity.

For this we had a number of reasons:

- We wanted to give openness
- We wanted to talk and discuss this openly and honestly with other breeders / owners
- We believe that there must always be an open and fair talk about defects within the breed with dog breeders all over the world
- And most importantly, we really wanted the story that goes out (and you'll never stop that), to be our story. The only correct story. We don't like gossip and fictional stories.

It was very nice to experience that there were many people we were able to talk to, discuss the issues but also search together for solutions. This ultimately resulted in contact with the Helsinki University in Finland where Prof. Hannes Lohi is occupied to investigate dwarf growth.

From the Netherlands, more than 20 blood samples from Mildred, Gus, their mother, half-sisters and brothers and other related dogs were sent to Finland for further investigation. Some blood samples have also been sent from Norway and England.

The first research they will undertake is to compare the DNA of our dogs with the DNA of the Norwegian Elkhound and the Karelian Bear Dog because there is a form of dwarf growth as well. A DNA test is already available for these varieties. If there is no confirmaty with these breeds, which is in line of expectation, additional research will be required.

## Sheet 21

This was a short view of our discovery of a Dalmatian dwarf.

But is it all? No definitely not.

Throughout the process in which we were fortunate enough to take confidence in some people and were able to talk with eachother, we discovered that there were many more people in the Dalmatian dog world who could tell more about this defect. So we have been able to make a picture of how many dwarfs there must have been in the last 40 years. And, like many other people, we did not know any better than 1 or 2 existing dwarfs. Nothing is less true, there appear to be 30-35 existences from about 1980. And that's just the dogs / pups we know.

We dare to say that there must have been more dwarfs, perhaps it was not recognized as such or people did not want to talk about it. For example, in the search for more information we encountered several people who claimed that there had been dwarfs in other European countries. Only no one could remember the names of breeders of dogs.

And that's a pity. We could have learned from each other and tried to prevent such things. Once issues occur, it will only be a problem if you don't talk about it. As far as Mildred and Gus are concerned, it would have been nice if more information was available. They would have had no problems with their elbows because we would have realized in an early stage what was wrong with them.

The elbow operations complicated their well-being and nobody can guarantee that they are not affected by osteoarthritis, which will endanger their welfare. In all different countries, other rules apply to breeding dogs.

In the Netherlands the rule is, the breeder is responsible when a dog presents a hereditary problem. That entails high costs. There is not such thing as an insurance for breeders in the Netherlands so you have to pay all costs by yourself.

## Sheet 22

Lets talk about money!

All the cost in a row:

- All costs prior to the surgery of Mildred have been completely free. Dierenkliniek Oostgaarde (Capelle a/d IJssel) did not charge us at any time
- The first operation of Mildred (1 leg and 2 elbows) including CT scan costs € 3500, -
- The second operation (1 paw) has cost € 1500, -
- The consultation with the internist has cost € 200, -
- The consultation at Utrecht University has cost € 300, -
- The stimulation test at the University of Utrecht has cost € 120, -
- Shipping of blood samples to Finland cost € 140, -

A total of € 5760, -

The costs of Gus were a little lower because he did not go through all the investigations. His total was € 5083.41. A quick calculation shows that having 2 dwarfs in a litter is a costly affair. We were fortunate that both dogs had an insurance, an insurance for individual dogs is possible in the Netherlands, so that most of the costs were paid by the insurance company.

For Gus' surgery we eventually had to pay € 1650, - and for Mildred about the same amount. Since Mildred was insured up to € 5000, we paid everything over € 5000, - and the insurance pays only till 85% of the bill. That is about € 2500, -.

Moreover, we want to make it clear that we are in no way seeking financial compensation of ANY kind. We paid these costs and will not accept compensation in any way.

## Sheet 23

We very well realize that a breeder has a responsibility. What we want to show in showing these costs is that the financial impact of having a few dwarfs in a nest is enormous. After all, you don't recognize this defect when they are a very young puppy. The problems arise approximately between the age of 3 to 4 months. The puppies are already with their new owners and they love their dog, just like us. We also went through the process with the firm believe that the problem could be solved. Only at the end of the journey we were able to say Gus and Mildred are dwarfs and in this stage they were 9 months old.

At no time before this, did we receive any information that would make us realize that they would be dwarfs. The problem of dwarf growth, for most of us, may not be very large, 30 to 35 traced dwarfs in a little 40 years, but the impact is incredibly high. If you can detect such a problem when the puppies are still very young then as a breeder you can take your responsibility and euthanize the puppies. Unfortunately, you can not see this at an early age.

In the search for more information, we also encountered a similar problem with the Alaskan Malamute. There they are a little further in this research and discovered that puppies of who they suspect that they are dwarfs can be determined by x-ray at a young age. But then you need to know in advance that you are at a certain risk. We did not know that.

We only knew about 1 to 2 dwarfs and those ancestors did not appear in our bitch's pedigree. Over the years, there have been many more risky combinations that have not caused any problems. After studying known carriers of dwarfism, the dogs that produced dwarfs, we can at least reach one conclusion.

Just about every breeder in Europe is at risk. There are few dogs that have no proven carrier in the pedigree.

## Sheet 24

How to go on?

We don't have the answers.

The bloodsamples are in Finland, research is ongoing, but we also do not know how long it will take and which route will take place. The contacts are not centralized and there is no coordination on the research. What we know is that additional research, which will certainly be necessary, will cost money. The Alaskan Malamute research has cost € 12,500, - and there is no DNA test yet. These are amounts we can not, or do not want to pay privately. There is no doubt about that.

What we would like to ask is if Wafdal would like to take the coordination of this project ,as it did at ARDS. (For comparison: ARDS had fallen 18 in 10 years and was smaller in size than dwarf growth).



In fact, Wafdal is one of the first organizations we have informed about our dwarfs. It took no more than 2.5 months before a message returned that the mail was read. When I finally got an answer and sent back a reply, it remained silent until now. However, we would like to thank Wafdal for the invitation to give this presentation. It gives us the opportunity to tell our story and we hope that it can be a motivation for other breeders to discuss issues within our breed. Problems are not bad, not talking about it is.

## Sheet 25

So I want to close with a quote worth remembering from the late, Dr Malcolm Willis:

**"Finally, all breeders will produce defects if they breed long enough. Those who tell you that they do not produce defects have either stopped breeding, breed hardly at all or are being economical with the truth. There is no crime in producing a defect. The crime, if any, lies in what you do about a defect. If you bury yours quickly and keep quiet about it, and I do the same with mine, then sooner or later we may use each other's dogs and pay the penalty for not having been honest with one another and with the breed we probably profess to love.**

## Sheet 26

At last we would like to thank some people who did a great job to us:

- At first, Peter en Irene den Hartog, the owners of Gus. Thank you for your trust in us en most important, your trust in Gus. Thanks for the unconditional love for Gus. He is worth it and we love you for that. Over the years we already had a good contact but we are happy it was you who had to travel with us.
- Dierenkliniek Oostgaarde, Capelle a/d IJssel, for all the examinations free from costs.
- Sandra Hertog & Martijn Buijtenhek, thanks for your neverending support, innumerable discussions, joint searches en your support when we didn't see a solution.
- Asa Boholm, thanks for answering all my questions, even if we asked them 10 times. You were patient and happy to join our search. We are so gratefull to you.
- Rhys and Annemiek Morgans, you put us on the right track. It helped us so much.
- Liliane de Ridder, thanks for you listening ear and the nice chardonnay when we talked about Mildred.

And the most important ones...Our beloved Mildred (and Gus)...you've taught us so much.