

A good deal all round with Happy Dog's new Breeder Scheme

DOG BREEDERS across the UK will now have the opportunity to benefit from feeding their dogs on one of the world's leading premium dog food ranges.

Happy Dog is Germany's leading and largest dried premium dog food manufacturer and is sold in over 30 countries worldwide. The brand is known for its use of quality ingredients and for being the food of many Champions.

Developed by veterinary surgeons and manufactured by Interquell GmbH, the Happy Dog range of foods takes in to consideration all the nutritional needs of a dog.

Holistically balanced, the foods contain elements that a dog would have eaten in the wild including, selected herbs such as thyme and rosemary, apples for natural fibre and pectin, Green-lipped New Zealand mussels which contain important glucosaminglucanes, Linseed which contains essential Omega 3 and Omega 6 fatty acids, original Kanne fermented cereals with natural lactic acid, Natural Silica a fossilised prehistoric algae and Trace Elements with important metabolic functions. All these elements combine to produce what Happy Dog calls its unique Life Plus Concept. All ingredients in the food are traceable and sourced from local farmers. No chemicals, colourings, flavourings or preservatives or genetically modified crops are used in its production.

Happy Dog has also considered in great depth the activity and energy levels of dogs and within each range there is a large selection of life stages and activity levels to choose from based on how much exercise your pet gets.

A number of benefits will be given to breeders who feed their dogs on the Supreme range of products. Firstly, the range contains all natural ingredients and includes foods which have been specially formulated for dogs with food allergies and digestive problems. Food will be supplied to breeders who feed all their dogs on the food at a heavily discounted rate and there are no delivery charges. We are currently running a new deal offer if you buy three bags you will get one bag free. Happy Dog offers flexible delivery arrangements and food can be supplied in suitable quantities. Puppy food can also be supplied for their first meals at a heavily discounted rate. Our special Puppy Packs which breeders must register the puppies online for will consist of a free 4 kg or 2 kg bag of our Junior Range depending on the size of the dog and a selection of dog accessories. Happy Dog will organise delivery of appropriate food to new dog owners in advance of the puppy's arrival to prevent any digestive upsets from changing the food. Dog owners will be able to contact vet nutritionists free of charge and breeders will be able to benefit from a money back scheme from Happy Dog should the new owners continue to feed Happy Dog range of foods. (Terms and Conditions apply on all our deals.)

Hugo Griffiths who is in charge of the Breeders Scheme at Happy Dog UK says, "We believe that the Happy Dog Breeders Scheme offers unbeatable value to dog breeders and owners. We also offer an Easified order process online. This allows regular delivery of fresh food to be made on the day of the dog owner's choice. Quality products, ease of delivery and money back make Happy Dog's Breeder Schemes one of the best on the market."

To find out more about any of Happy Dog's special schemes, visit our website at www.happydoguk.com. For further information on any of the Happy Dog ranges, email: info@happydoguk.com or visit the website: www.happydoguk.com

Tel: 08444 09 5000, 24 hour service for orders only



Mark Griffiths, Happy Dog, Lexy Besterman, Andy Griffiths and Hugo Griffiths of Happy Dog.

Healthy Breeding & Whelping

Breeding Good Dogs

TO SUMMARISE successful breeding in a few hundred words is as difficult as breeding winning dogs every time but these notes will give you some ideas about how to approach what, on the face of it, is a simple problem: which dog to mate to which bitch.

There are seven important elements that must be appreciated and understood by those who are going to successfully breed show dogs.

Good fortune is the first and possibly the most vital element. In some ways this is out of your hands but by carefully controlling all the other elements you can ensure that the role played by luck in your breeding programme is at least reduced to the minimum.

Factual information is essential. Most of what you need is easily available from books, articles, newsletters, pedigrees, photographs, show catalogues, the stud book, genetic information and other breed records. Hearsay information is also easily available but it is important to realise that most unsupported advice is unreliable. Unfortunately, it is often more the case that hearsay is the most likely source for the basis of breeding than the facts. Part of the reason for this is laziness, for it is easier to listen to advice than to settle down and do all the hard work yourself. Always remember that because ascertaining all the facts is hard work the person giving you advice probably did not do it either and is likely to be guessing! Even where advice is given in good faith - and this is not always the case - degrees of distortion can creep in as a result of personal prejudice, misunderstanding or not taking all the factors into account.

Evaluation is the next requirement. Once all the facts have been assembled you have to decide on their implications, assess their relative importance and make decisions based on the requirements of the breed, personal preferences and direct observations.

'Preference' and 'Observation' are the next requirements. They are very personal judgments and require a high degree of the two final elements, 'Expertise' and 'Experience' if they are to be relied upon. However, you must develop them and rely upon them for being prepared to take responsibility for your decisions sharpens your perceptions and ensures a proper degree of caution.

Expertise and experience only come with time. Too many people believe that two litters and five years of showing is quite long enough an apprenticeship and become upset and bitter when this turns out not to be the case. However, you can be lucky and you can study. Success by accident is a very long shot.

These first paragraphs are an unusual introduction to breeding dogs but they are designed to help you think in terms other than

those normally associated with dog breeding. There is so much more to breeding the best dogs than mating your bitch to the currently most successful dog in the ring. That dog may be the 'best' over a certain number of shows, and the judges (and his breeder) may rave about him but he may just not be right for your bitch. He may be bred too close or be too much of an outcross. He may have all the attributes that you want but if your bitch already has them and he fails in the areas in which she fails you will not make much progress. This advice may sound obvious but remember that each of us is likely to select dogs that we really like and for this reason they will tend to be the ones closest to our own stock. As a result we ignore the areas in which both dog and bitch fail!

On the other hand it is just as mistaken to mate your bitch to a dog which no one has never heard of in an attempt to be different.

The biggest mistake is to balance an exaggeration with its opposite. Breeding a small bitch to a tall dog will, usually, give you a litter some of which will be small and some of which will be tall. Breeding a small bitch to a dog of the correct size will mean that, usually, some of the resulting litter will be small and some the right size. The same logic must be applied to all other characteristics and it is important to keep this in the front of your mind at all times.

You need a clear vision of the standard and must work towards it. It is too easy to fall into the trap of exaggeration simply because that particular 'style' of dog is winning this year. A fashion for extended hindquarters in recent years has affected several breeds. There is no justification in the standards for these alterations to the dogs' conformation but if those dogs are winning it is tempting for novice breeders to think that this might be correct. Only good observation, understanding and research will show that it is not. Breeds will change but that change should be relatively slow - although the breeds most recently introduced change more quickly than those which are well established - and good breeders can afford to be patient.

Our approach has always been to select a relatively large gene pool and work within it unless a problem dictates that we need to move outside. The important thing is that the pool is selected as a result of research and evaluation. We have found that if we mate fairly closely for two generations and then move away - but within the pool - for the next generation we retain soundness and type and enough control to constantly improve on what has gone before. We only mate a bitch occasionally and, over the last thirty years we averaged less than two litters each year. Given that the average litter is four, we do not have much scope for error so we are particularly careful.

'Mating the best to the best' has long been the most commonly quoted maxim for dog breeders. Just because it is often quoted does not make it any less true but like a three card trick its simplicity is deceptive. I hope that these few paragraphs have helped you understand that finding the best bitch and selecting the best dog are dependent on many factors - and you need to understand all of them!

by
**David and
Angela Cavill**

Canine Pregnancy and Whelping

AFTER THE MATING

PREGNANCY IN a normal healthy bitch is something which she will endure without fuss or bother. Usually it is the inexperienced owner who feels that more should be done during this time. Once a bitch has been mated, then there is very little to do for a while.

I like to feed a multi-vitamin supplement from the start of the season if the bitch is being fed a mixed diet. Those bitches fed on a complete food may also need some supplementation depending on the quality of the chosen brand of food. However, even though the quantity of food offered need not be increased for a few weeks, the quality of the food should be the highest. There will soon be great demands upon the bitch so it is vital that she is functioning efficiently.

For the first month it is perhaps best to try to forget about the possibility of pregnancy in your bitch and just go about your usual routine. Exercise should not be decreased for a few weeks as she should be kept fit and well which will aid a natural whelping when the time comes. She should not be allowed to become fat or lazy; this may contribute to problems later. Some large breed bitches may prove difficult to confirm as being in whelp as after mating some just seem to 'think' pregnant. Even if conception has not taken place, some bitches are very maternal and can easily convince themselves and those around them that they are carrying puppies. No two bitches are exactly alike but many will show behavioural signs which you as the owner may interpret as encouraging. Some bitches will start to take great care of themselves and will not be keen to run about as much as is usual. They may also seek more human company, or the opposite, seek seclusion. Many will become more affectionate and demand your attentions.

The first physical signs will be a bloom on the coat; she will look very well indeed. The vulva will not quite return to the normal size, remaining slightly enlarged and fleshy, although there is no sign of discharge. The teats will be rather reddened, those nearer the rear being more obviously flushed than those near the ribcage. The redness is due to the increased blood supply and they will become rather erect and hardened during the first four weeks. Morning sickness may occur about three weeks after mating, when a frothy yellow bile is expelled. This is no cause for worry as the appetite is not usually impaired by this sickness.

During the first week following fertilisation, the ovum is dividing into a mass of cells and begins to make its way toward the uterus. The tiny embryos do not begin to attach themselves to the horns of the uterus until about the twentieth day. Approximately 1 cm in size, they are too small to detect by manipulation. From the third to the fourth week all the organs of the body are forming and the embryo will begin to curl up into the classic recognisable foetus position. By the end of the fourth week the individual foetus will be about two inches long. From about four and a half weeks the sexual characteristics are developing in the individuals.

As the development of the foetuses is rapid any event which causes stress to the bitch's system may have a detrimental effect on the puppies. The effects of infection, live vaccines or injury to the bitch may either prevent the normal development of the whole foetus or cause deformity to limbs. It is thought that defects such as cleft palate or imperforate anus occurs at this time and severely deformed foetuses may be reabsorbed by the bitch's sys-

tem. At five weeks of pregnancy the physical signs may be more apparent. There will be more development of the mammary glands and a slight bulge may be felt just behind the ribcage. The bitch's abdomen may feel hard and firm, although the enlargement of this area is only just starting. The nipples will be more firm and erect but the most promising sign is the turning upwards of the hair of the lower abdomen. This is caused by the change of shape, but is more noticeable than manipulation. A white or pale-coloured discharge from the vagina is often noticed and this is a good indication of pregnancy. The discharge is not profuse, just remaining within the lips of the vulva or clinging to the immediate area. Any foul-smelling discharge or blood-staining should receive veterinary investigation.

The bitch should receive an increased amount of food from this stage, by roughly a quarter of her usual quantity per week. Some bitches will become ravenous, others will accept the increased portions with less enthusiasm. It is very important that the diet is balanced. Increasing the carbohydrate in a mixed diet may satisfy the bitch, but it will do little to aid the development of the litter. The increased quantity of food offered must be a balanced mix. Adding meat only will increase the protein level, but is bound to cause digestive upset. Complete diets can be supplemented to make them more palatable, but care must be taken. Your bitch will probably appreciate her meals divided into two or three smaller helpings at this stage as one single, larger meal per day may make her uncomfortable.

From six weeks of pregnancy onwards, the physical signs should be obvious if a good-sized litter is being carried. If only one or two puppies are present in a large breed bitch then a bitch may keep her owners guessing for a week or two longer. As the foetuses develop and grow there is little room for the uterus to lie normally in the abdomen so it folds back upon itself and moves, usually lower down into the abdomen. This can happen over a very short period of time and the change in shape of your bitch will be dramatic. Some bitches experience some discomfort at this time and may cry out or go off their food for a day or so. As the weight of her now loaded abdomen is pulled down by gravity, her spine and haunch bones may be more noticeable. Viewed from above, she may look rather sunken on either side behind the rib cage although appearing rather bulbous lower down. A waxy secretion will appear around her nipples and this should be carefully cleaned away as it will attract dirt and harden into a crust. Exercise should not be too exhausting and so a few short outings per day is much better than a long marathon once a day.

The maternal instincts of a bitch do not always appear at the correct time. Her instinct to prepare for a litter may occur at any time during the pregnancy and it is likely that some digging for a likely nest will occupy her time. If a number of bitches are kept together there is a possibility of some jealousy erupting into fighting for a few days. This may be instigated by the pregnant bitch or others who are upset by her condition and the smell of her discharge. Pregnant bitches, especially those who are almost full term, should not be left alone with others for long periods. Apart from the risks involved in the normal jostling that occurs between dogs, she will appreciate a place of her own where she can seek seclusion. It is a good idea to introduce her to her whelping place now, so that she will regard it as her safe place.

From the seventh week of pregnancy your bitch may be fed as and when she demands (within reason!) Some days she may be more willing to eat than others. This may be due to discomfort caused by her increased bulk,

by
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warm weather conditions or any number of other reasons. BUT veterinary advice should be sought if she refuses to eat for more than 24 hours. Some breeders like to add a calcium supplement to the bitch's food from now and continue this until the puppies are weaned. The calcification of the puppies' skeletons will make a great demand upon the bitch's own reserves and this must be replaced. Some breeders also like to include milk in the diet, and I see no reason why this shouldn't be done as long as it doesn't cause diarrhoea in the bitch. Highly nutritious food should be offered to bitches on a mixed diet and the addition of cooked eggs, cheese and any other easily digested food will be appreciated. Those bitches fed on dry complete foods will have an increased thirst directly related to the high intake, and milk may be offered sometimes instead of water.

The average duration of pregnancy in the bitch is nine weeks but puppies can be born - and survive - from the fifty-seventh day. Owners should not be fooled into thinking that large-breed puppies need to be carried full term - they can and often do appear early, especially when a large litter is restricted by space in the uterus. At about seven-and-a-half to eight weeks of pregnancy owners of coated breeds may prefer to trim the coat around the bitch's vulva and remove some of the coat forming her trousers to make cleaning easier after the birth. Bitches with a very profuse coat would also benefit from the removal of some of the hair around the nipples. Not only will the puppies find suckling easier but less dirt and wet will be brought back in to the puppies after their dam visits the garden. The hair between the pads and toes can also be trimmed to advantage for the same reason. It is possible for



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a full coat to be maintained and some bitches have appear in the show ring, in full coat, very soon after the puppies are weaned. For those who have not reared a litter before you may soon realise that your time will be very limited after the birth of your precious litter and the time spent on washing and drying a coated-breed dam's long tail and leg featherings several times a day would be better spent on other chores. Shorter hair is easier to wash and dry than a long hair and retaining 'show coat' should perhaps take second place to the well being of the litter.

PREGNANCY TESTS

Patience is really the one thing that most owners lack and after the planned mating some people find it almost impossible to contain their excitement for the much-awaited litter. Ultrasound scanning machines to diagnose pregnancy in the bitch are now commonplace and easily accessible in most areas. The experience of the scanner operator is paramount and the 'results' are considered to be well above 90% accurate dependent on how long after mating a bitch is presented for screening.

Blood tests, urine tests and other methods of bitch pregnancy detection/confirmation are also now available.

Although physical signs may already be appearing by the time a pregnancy scan/test is made an anxious owner can be reassured and future plans can be made. If the tests prove negative then those bitches who are engaged in a false pregnancy can be helped to avoid or minimise the production of milk by reducing their food intake whilst increasing their exercise until the false symptoms are past. Veterinary manipulation can detect puppies in some bitches between the twenty-eighth and thirtieth day although in a large breed which often carries puppies high this is not always the case. Many bitches have fooled both their owners and professionals, and the only way to be 100 per cent sure is to wait and see!

WHELPING PREPARATIONS

If you do not have the space or if, for other reasons, it is not practical to site the whelping box in your usual, main living area then a utility room or conservatory is an ideal place for it. If a bitch has lived as part of the family she will be happy in such a place as she will have peace and quiet but is also not excluded completely from what she is familiar with. The whelping area should be well lit and ventilated. It should be warm in cold weather and cool in hot weather and it should also be draught-free. An electric power point to use for a secondary heat source for the puppies is necessary, and so is access to hot and cold water. If a spare room in the house is to be used for the bitch and her litter, then it is advisable to remove or cover carpets and mats as they will become soiled as the bitch travels to and from the garden. Ideally, the owner should sleep close to the puppies for a few days so room for a bed is needed. Some breeders prefer to have a second whelping box in their bedroom so that the bitch and puppies can be near by and cared for during the night with minimum upset to the routine of the family and other dogs. Many will feel that measure is unnecessary, it is purely a matter of choice. Once the puppies have reached a week old then they are usually strong enough to move out of the bitch's way if need be and big enough to be uncomfortable to the bitch if she should inadvertently sit or lie on one; the dam will also be more accustomed to her new duties and so, hopefully (!) more trustworthy with her babies.

The whelping box can be either one of the smart, hygienic, manufactured types now available to buy, a home made, usually wooden type or a disposable type made of cardboard or thin ply. If breeding dogs is an activity you plan to engage in on a regular basis then a good sturdy whelping box which can be effectively sterilised and easily dismantled between litters will be a valuable acquisition. Whichever type you use it must be big enough for your bitch to lie stretched out with ample room for the puppies to move away from the bitch if so desired.

A suggested minimum size for a whelping box is for it to be 40 cm larger than the length and 40 cm larger than width of the outstretched dam. The use of rails will make the lying area smaller and this should be borne in mind by those who engage a carpenter to make one from a plan. Most whelping box designs are for sides which are twelve to fifteen inches high. I believe this kind to be virtually useless as puppies can easily climb up on to the side of a bitch and fall out of the box. Sides which are twenty-four inches high are much better and will more easily contain the puppies with the dam having access from a sliding or hinged panel in the front. A high sided whelping box will also prevent unwanted attentions from other dogs/pets/small children and provide the bitch with a feeling of security. The construction should be of exterior grade ply or marine type ply thick enough to prevent buckling. The front of the box should be a panel which can be removed completely for when the puppies need more space, and an access panel can be incorporated to allow the bitch ease of coming and going. For a bitch who needs to see what is going on around her, a small wire panel can be slid into the access hole enabling her to be secure, yet keeping her in place. The floor of the box needs to be raised off the ground an inch or two, and a removable shelf rail will give more protection to puppies than a pole-type crush rail. The box should be sanded absolutely smooth, and several coats of marine or exterior varnish should be applied so that cleaning is easy.

Polyester 'fur-pile' pads are, I feel, essential for rearing a litter and for the comfort of your bitch. Not only does the "fur" provide an easy medium for the puppies to move about on, but all the wet and moisture from the puppies and the bitch will drain straight through on to a layer of newspapers underneath so keeping everyone dry and comfortable. The prolonged lying of the bitch as she nurses her litter can cause soreness but this is completely avoided if she has this bedding under her. The bedding should fit the box exactly or with a slight excess so that there is no chance of it moving or of a puppy becoming trapped underneath. The better quality polyester fur bedding has a very stiff backing, and this is far safer than the cheaper more flimsy type which will move about and form creases.

A huge stock of newspapers should be collected before the litter is due. Not only is it needed during the whelping, but also after the birth right up until the puppies are ready to go to their new homes. It is surprising how many will be needed and they are easily disposed of. Friends can be encouraged to save them for you and unsold copies can be bought from wholesalers. These are ideal for newborn puppies as they are free from contamination and will present little or no risk to the vulnerable babies. Newspapers which have been stored in an outbuilding may be contaminated by vermin or mould from dampness and are of no use to you. For puppies which are three-weeks-old or more, shredded paper which is now widely available is wonderful for laying over newspapers to keep puppies clean. Although soiled papers should be removed as often as the attendant passes by the shredded paper will be kicked over wet and soiled patches as the puppies move about and will stop them constantly becoming dirty with faeces and urine. Again, this is easily disposed of and can be stored without difficulty.

An extra source of heat may be needed for newborn puppies in very cold weather or if the puppies are small and weak or orphaned. Heated pads which are placed on the floor of the box are less hazardous than overhead sources of heat. The pad should be sited towards one corner of the box so that the bitch can lie away from the heat for her comfort. The puppies will converge on the covered pad quite naturally without any encouragement. Infra red heat lamps are still used by some breeders, but they do tend to have the disadvantage of causing dandruff on the puppies. Heat lamps should be hung over the corner of the box and the height will need to be carefully calculated to avoid overheating or even burning the pups or their dam.

A small cardboard box containing all the things that you may need during



the whelping should be assembled ready for the event. Another small box is useful to put the puppies in as they are born, pending the arrival of the next. A small piece of the polyester fur bedding or an old towel and a hot-water bottle or microwaveable heat pad can be made ready here. In the other box, place the following:

Old towels for drying the puppies. These can be discarded afterwards if necessary.

Ten lengths of thick, strong thread for tying off any bleeding umbilical cords.

A container of surgical antiseptic and a pair of blunt-ended scissors.

A tube of lubricating jelly.

Two rolls of kitchen towelling (paper).

Two plastic waste disposal sacks.

Two lidded buckets. One for placentas which are to be discarded, another for any dead puppies.

A notebook and pen to write down the time of arrival of each puppy and the time between contractions. The vet will need to know this if the bitch experiences delay during the birth process.

A large collection of newspapers to mop up the fluids that are lost during the birth.

A piece of the polyester fur bedding can be used during the whelping, but if this is in short supply, a good thick covering of newspapers on the floor of the box will be adequate.

Finally, the attendant should have something to occupy the time while waiting for the arrivals. The bitch may be unsettled by the constant gaze of a worried owner so if you can occupy yourself while keeping watch then you and your bitch will be less stressed.

IS THE WHELPING IMMINENT?

The one sure sign that the whelping is on the way is the drop in temperature for the twenty-four to thirty-six hours before whelping. The normal temperature of a dog is 101.5 degrees, and this will fall to about 100 degrees for the last week of pregnancy. If the temperature is taken both morning and evening for the last week, the final drop to 99 or 98 degrees is easily noticed and so plans can be made. The first stage of labour may be heralded by long periods of restlessness or by complete calm. Frantic bed-shredding may occur, or this may only happen as the real pains of contraction occur. No two bitches are the same and for every bitch that seeks comfort and reassurance, another will want seclusion.

THE BIRTH

Whether or not the first signs of labour are noticed from the signs mentioned earlier, a sure sign is shivering in the bitch. Most Bernese bitches will spend a great deal of time licking and cleaning any or all parts of their anatomy that they find easy to reach in their enlarged state. If the bitch has been accustomed to her whelping box for some time prior to the expected birth then she may be happy to spend her time there during the first stage. However, she may well choose to find a quiet and out-of-the-way place. The time taken over the first stage of labour is variable and may be directly linked to the bitch's temperament. A rather humanised bitch may become neurotic about the whole procedure and react in a hysterical way for up to forty-eight hours, while a calm and steady bitch may go through this stage with hardly a sign. There may be a mucous-like discharge from the vagina and it may appear as being rather string-like, clinging to the hair around the vulva and featherings. This is the plug which has sealed the cervix and it has dissolved in readiness for the birth.

Between bouts of shivering or bed-making, the bitch may sleep peacefully, only waking to begin the process again. Bed-making, either before the end of the pregnancy or at the start of labour, is thought to be prompted by the discomfort felt by the full uterus. As the first pains of labour occur so the bed-making and bed-shredding intensifies. If the bitch is allowed to shred a good thick layer of newspapers placed ready in the whelping box she may settle more easily having satisfied her craving.

At the first sign of labour all other dogs and animals, as well as interested spectators should be cleared from the area, leaving one or at most two attendants who are well known and trusted by the bitch. An ample supply of clean water should be available to the bitch for drinking and any trips outside to relieve herself should be carefully monitored. In darkness, the dam should be carefully watched and a powerful torch should be used to ensure that she does not leave a puppy outside. Some veterinary surgeons will appreciate a call to advise them that labour has started and many owners get great comfort from knowing that the vet will be prepared if his help is needed. The way in which the bitch is managed through each stage of labour and the birth can affect her future attitude to motherhood. A highly-strung bitch who may panic during the pains of labour may need to be told kindly but very firmly that she must not behave in such a way. Some bitches are perfectly capable of getting on with the task of producing a litter, but others will need to be guided and managed very carefully for the benefit of all concerned.

THE SECOND STAGE OF WHELPING

This is the actual birth of the puppies and can only commence when the cervix is completely dilated. The bitch will have become more settled except during the contractions when she may be rather agitated. Between contractions the bitch may be settled, even trying to sleep. As the pains intensify she may lie on her chest in a hunched position, she may sit against the corner of the box and brace herself as she strains or she may stand with her back hunched, turning to inspect herself from time to time. The puppies could be born in any of these positions but it may be kinder to the puppies not to let them drop to the ground if the large-breed dam insists on standing.

The function of the owner during the contractions is to ensure that everything which may be needed is at hand and to comfort the bitch and be ready to take charge of the puppy when it arrives. Whelping is a natural process but many bitches do not have the natural instincts to know what to do with a new-born puppy. Ignorance and clumsiness can result in stress to the puppy, so owners may prefer to take charge of the first few puppies born to

a first-time mother. Not only will this avoid any regrettable mishaps to the puppy but the bitch will often relax and settle more quickly, so giving her some time to adjust to this new experience.

Watery fluid may also be lost from a ruptured water bag - the amniotic sac - and this again is quite normal although it does not always occur. Any very dark or foul-smelling discharge or any considerable loss of blood could mean a problem so veterinary advice should be sought quickly.

The sight of the water bag, which looks like a black balloon at the vulva, heralds the birth of the first puppy. The bag may appear and then retract or it may remain unmoved for some minutes depending on the strength of the expelling contractions. It is normal for the bitch to want to investigate this protrusion but she shouldn't be allowed to bite at it. If the bitch seems to have a low pain tolerance, she should be prevented from becoming too upset. Most puppies are expelled very easily, although the first-born may take a bit more time as it is in effect stretching the passages ready for the other puppies to follow. Occasionally a puppy may be partially retained and a few strong contractions and strains may be needed before it is fully released. If a puppy appears to be stuck, and these are sometimes those which are presented hind-legs first, a little help will bring about a happy conclusion.

About half of all puppies are presented hind-legs first but this is not a real breech presentation. A true breech is when the rump is presented first with the hind legs tucked up along the stomach. There is no reason to think that puppies presented hind-legs first are not normal: they are as normal as those which appear head-first. A great deal of pushing on the part of the bitch is needed to expel the head of a puppy, and the rest of the body follows easily on a head-first presentation. Because we do not see exactly how many pushes are needed to expel the head, we tend not to worry so there is no reason to worry when the body comes first and the head seems to be taking a few more pushes. A prolonged retention of the head can bring about some swelling or even brain damage but this is most unlikely during most whelpings. A particularly large puppy can be difficult to expel but it will usually come with a little human intervention. First, make sure you have scrubbed your hands and fingernails. Then apply a small amount of the lubricating jelly just inside the vagina, trying not to get any on the portion of puppy which has emerged. Using a rough piece of towelling, the puppy should be gripped firmly but gently and as the bitch strains, a simultaneous rotation and gentle, downward pull should free the puppy from the obstruction. It is often useless to contact the vet for assistance once part of the puppy has emerged; valuable time is wasted and the vet would be unlikely to attend in time to save the puppy. This is one of those situations which you have to approach in a sensible and calm manner.

Once the puppy is clear of the dam, you must decide on the best course of action. If the dam is calm and showing reasonable interest then she can be allowed to take a more natural involvement with her first offspring than if she is highly stressed. I think it is a good idea to free the puppy from the encompassing membranes as soon as possible and only then allow the bitch access to her new baby. During the birth the sac containing the puppy may already have ruptured and it can be pulled away from the puppy's head and body. If the sac still encloses the puppy then the membranes can be broken between the thumbs and forefingers, freeing the head first. Most often the placenta arrives with the puppy but if it is still within the bitch just wait until she has another contraction to expel it and then help to ease it away from her. The puppy can still be freed from the membranes even if the placenta has not yet arrived. The expulsion of the placenta is regarded as the third stage of labour. A green staining from these membranes is quite normal and nothing to worry about.

The puppy, once free from membranes can now be moved to the bitch's front to allow her to inspect it and hopefully recognise it as her own and so a bond is made. The bitch will lick the puppy in an attempt to stimulate its breathing responses and the puppy may cry out. She may seem to be rather rough but as long as she is not hurting the puppy do not be too concerned. The dam may instinctively eat the placenta, or afterbirth, which is still attached to the puppy by the umbilical cord which she will also chew through with her side teeth. Inexperienced bitches may break the cord rather short and may try to pull the puppy about by the severed end. If you think this about to happen then it is advisable to sever the cord with scissors after it has been tied off with thread. The blood which is visible in the cord should be eased toward the puppy between the thumb and forefinger and the cord should be ligatured about two to three inches from the puppy's abdomen. The placenta can then be offered to the bitch. The placenta would be the only source of nourishment to a bitch in the wild for some days after the birth of a litter. Even though our bitches have long been domesticated there is still great value to the bitch if she is allowed to consume at least some of the placentas. They are blood-filled and consequently highly nutritious to the dam. They also contain hormones which will aid the let-down of milk into the mammary glands and help the uterus to return to normal size after the whelping. The drawback is that the bitch may subsequently experience black, watery diarrhoea if she consumes too many. If the bitch has a large litter then she should only be allowed to eat about half of the placentas. Those discarded can be put into a lidded bucket and disposed of later. Occasionally a finicky bitch will refuse to even look at a placenta and no harm will come to her if she does not eat any of the afterbirths. Bitches who whelp by caesarean section rarely experience difficulties even though denied access to the placentas.

Once your bitch has had the opportunity to lick the puppy then the attendant can rub the puppy vigorously with a piece of rough towelling. This will help the puppy to dry off, and also help stimulate the natural responses. The puppy's mouth should be checked and wiped out with a folded sheet of kitchen paper to remove any debris. As soon as the puppy is dry it will be able to conserve body heat. Puppies usually protest loudly at the attentions of the attendant so if the dam becomes worried she should be kindly but firmly pacified. A puppy which appears lifeless can often be brought around by massage and by helping the excess fluids which may be 'water-logging' its system to escape. Puppies which appear rather blue in colour will almost always respond to stimulation and rarely suffer ill effects. Vigorous massage with towelling, turning the puppy from side to side should be alternated with swinging the puppy to remove the fluid. Swinging a puppy needs to be done with GREAT CARE and should only be attempted if you feel confident that you know what you are doing. Hold the puppy's head securely between the first and second finger, supporting the neck and keeping its body in the palm of the hand. Keeping a firm grip, an exaggerated movement of swinging the puppy from shoulder height right down to hip level will usually expel some of the retained fluids.

Any puppy which seems to be breathing irregularly can be helped by massage and the application of heat. Holding the puppy on a warm heat pad will usually help or as a last resort the puppy's body may be immersed in a bowl of warm water but this does have the drawback that body heat can be lost when it is removed for the massage to begin again. If there is any sign of life, perhaps just an occasional gasp with long periods of lifelessness, then there is good reason to continue stimulation. Puppies have been known to recover and begin to function normally after as long as thirty minutes from birth. If another puppy is about to be born, an assistant may have to take over.

After a prolonged delivery it is possible that one or more puppies may be born dead. These pups usually appear very pale on the pads, inside the mouth and around the tongue. Even so, a little time spent on massage may stimulate life and so it is worth the effort. Anything can be tried, even artificial respiration. There is also products available from the vet which is useful to have in an emergency; a few drops under the tongue will treat asphyxia of newborn animals and is often effective when all else fails. If the puppy appears dead, it is still worth putting the puppy in a warmed box on a heat

Continued on page 16

are you expecting?

mother. & puppies

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Healthy Breeding & Whelping

Continued from page 14

source for an hour or two in; if the puppy is truly dead then it should be wrapped up and removed from sight of the bitch so that it can be disposed of later if veterinary opinion is not sought.

As soon as a puppy is dry and breathing efficiently it can be returned to the bitch and encouraged to suckle. Some puppies will immediately attach themselves to a teat and feed greedily, others may be less interested. A puppy does not need to feed straightaway but suckling will help the let-down of milk and it is also thought to help the birth process for the rest of the litter. The action of one or more puppies suckling will help the bitch to settle and accept her new responsibilities. If your bitch has whelped on polyester fur bedding then the puppy will be able to grip and hold its position better than on newspaper, although a piece of towelling can easily be placed under the puppy to help it balance. Any puppy which seems disinterested or too weak to suckle can be coaxed by wetting the nipple and holding the puppy's nose just underneath, as puppies always nuzzle upwards in their search for a teat.

Whether suckling or not, the first-born can stay with the dam until the next arrival is imminent. Wait until the next puppy has started to appear before removing the first-born or the dam may fret. The first-born should be placed in the prepared cardboard box and this should be kept either in a corner of the whelping box or just outside the box where the bitch can see it. Noisy puppies will settle down to sleep if they are covered lightly with a towel. In a natural situation this would not happen. But in the confusion of the second birth the puppy could be injured as the dam moves around to clean each new arrival, and each puppy would become wet with every new birth.

Only when the puppy is safely arrived and settled with the dam should the owner worry about logging down the time of arrival and any identifying marks. If there is sufficient time between births the puppies can also be weighed but the priority is to ensure that each puppy is well. Between whelping, each puppy can be checked for deformity; cleft palate, a condition causing a split in the roof of the mouth which prevents natural suckling, is common, and other defects occur occasionally. Once the second puppy has arrived safely, then the process is repeated and the first-born can join its new littermate at the teats. When the next arrival is about to make an entrance then the two can be removed to the cardboard box until it is safe for them to join puppy number three, and so the process goes on. When two or three puppies have been delivered the dam may be allowed to take a more active part in cleaning the puppies as she will have had time to accustom herself to her new role. Her initial fears and confusion will have subsided and so there will be less risk of accidents with the puppies and no doubt inexperienced owners will also have had time to impart more calm to the situation.

Between arrivals the soiled newspapers can be removed from the whelping box and replaced with clean, and the dam can be offered a drink of water. The temperature of the room should be constantly monitored. The puppies need to be warm enough but the dam should not be so hot as to be uncomfortable or distressed. The behaviour of dams during whelping can vary greatly. Some will continue to scrape up the bedding in the whelping box with each new set of contractions; others will accept each new birth with scarcely a movement. The length of time between the deliveries can vary: some puppies arrive within a few minutes of the last, others may appear two or three hours later. Any bitch who is experiencing contractions for more than an hour without result may need veterinary intervention. A visit to the garden to urinate may get things moving along but remember to take a torch and watch the dam closely in case a puppy should arrive outside. A bitch may sleep soundly between puppies and this is no cause for concern as long as she is not distressed. There are no set rules. A litter may arrive very quickly or it may take twenty-four hours or more, but most owners will know instinctively if there is a problem and if not then ring the vet for advice or reassurance!

WHELPING PROBLEMS

As each bitch is different, there is no way that anyone can lay down guidelines for dealing with problems. If in doubt, a veterinary surgeon

should be contacted and his advice should be followed. I fail to see why novice owners ask for help and then refuse to take it. Firstly, I would like to reassure worried owners that if a veterinary surgeon requests a bitch to be brought to the surgery he is not being thoughtless and unkind. Often a ride in a car will promote contractions and so bring about progress in delayed whelping. If intervention is needed the vet has all the necessary equipment in the surgery, so time will often be saved. Uterine inertia is a common cause of whelping difficulties in the dam. This can be caused by a number of factors and inertia can occur at any stage during the whelping. Inertia of the uterus, simply explained, means that the muscles are not contracting correctly to bring about a normal birth. There are a number of causes for this: heredity, poor condition of dam or an over-stretched uterus. Primary inertia can occur when an obviously pregnant bitch fails to start the first stages of labour or goes through the bed-making stages and maybe a few minor contractions but is then unable to complete the second stage of labour. A caesarean section may be recommended in these cases.

Secondary inertia occurs when one or more puppies have been born but the natural process of expulsion of the puppies slows down to a stop. This is often caused by exhaustion of the dam or fatigue of the muscles of the uterus. If the cervix is dilated, then injections of oxytocin may be administered. This is a hormone produced by the pituitary glands and will often induce a puppy to be born within about ten minutes. One injection may be all that is needed to get the remaining puppies delivered, but an injection may be needed to expel each remaining puppy. Injections of calcium may also be given to increase depleted blood calcium levels.

Over-sized puppies or puppies presented in a breech position occur only occasionally, and often there is little time to go for professional help if the puppy is to be saved. Most over-sized puppies will eventually make their exit if they are rotated to allow an easy delivery and this can be done by lubricating the internal passage of the bitch as far as the fingers will reach, after suitable scrubbing of course. Standing a bitch on her hind legs with her front legs held by an assistant will sometimes help with the force of gravity working for you both. Breech presentations, where the rump is presented and the hind limbs are tucked under the stomach, need to have the hind limbs brought forward before delivery can occur. Again, a well-lubricated passage is needed before the attendant can hook a finger around the puppy's stifles to bring about expulsion. If veterinary help is at hand, this may be done manually or if the puppy is higher inside the bitch, then forceps may be brought into use.

The appearance of a dark, foul-smelling discharge is an indication that something has gone wrong, and time should not be wasted in seeking advice and possible treatment. A thick, green discharge is sometimes in evidence when the placentas have begun to separate and disintegrate, and this should be a sign for immediate attention if the unborn puppies are to be saved. This discharge is not at all similar to the watery green stain which appears quite naturally at delivery. Apart from a few traces of blood which may erupt from the umbilicus of the newly born puppies, the dam should not lose any blood herself during the whelping. If blood is seen in any amount, this could be caused by the rupturing of minor blood vessels, or by the tearing of the vaginal tract. If bleeding should persist for more than a minute or two, then again help should be summoned. But remember, a small amount of blood will spread into a large area, especially on bedding that is already wet from the whelping, so be sure to gauge how much blood you see.

A caesarean section is a common veterinary procedure. Modern anaesthetic advances make the risk minimal to both dam and unborn puppies and most bitches undergoing such surgery show no problems afterwards. If a caesarean is advised before any puppies are delivered naturally, then the veterinary surgeon will usually provide a box and heated pad to receive the puppies as they arrive. If one or more puppies have been born at home, these should be left in a warm box, preferably covered to conserve heat and they will be quite all right while the bitch is taken to the surgery for delivery of the remaining puppies. Paper towelling will be available at the surgery, but towels can be taken to speed up the drying process.

Watching a caesarean operation is a fascinating experience, and not at all the bloody or horrific sight which many owners fear. Some vets will allow owners to remain while they operate but care must be taken to be unobtru-

sive. An extra pair of hands to receive the puppies as they are removed from the uterus will enable those slower to respond to be given more stimulation. Puppies born this way do not experience the contracting movements of the dam's muscles and so they will possibly need more manual stimulation to breathe normally. After surgery the dam will usually recover from the anaesthetic very quickly and it is not uncommon for bitches to walk out of the operating theatre. Once home the dam can be settled down with her litter and will probably go into a deep sleep. The incision, which may have been made mid-line between her teats or on her flank, rarely causes difficulties and will heal surprisingly quickly. There may be a slower response from the dam to accept her puppies but this is rare and time and effort on the part of the owner usually result in bonding of the family.

AFTER THE WHELPING

Once the final puppy has made its appearance, then both owner and dam can feel justifiably proud and a wave of relief will sweep over both. At least a few of hours should elapse after the final puppy is born before you should assume that the dam is really empty. The dam's abdomen will of course be greatly decreased in size and she can be made to stand while a gentle examination is made by feeling along her belly with both hands. This will enable an owner to be confident that all the puppies have been delivered. If the number of placentas delivered relate exactly to the number of puppies born, then all well and good - although a retained afterbirth can be passed up to twenty-four hours after the whelping.

All the puppies can be placed in the cardboard box while the bitch is taken outside to relieve herself and the whelping box is cleaned and re-made ready to receive the mother and family. It is not uncommon for the dam to be reluctant to leave her family to attend to her toilet needs but she should be compelled to go with you, on a lead if necessary. Again, your management of her at this stage will be decisive in how easy or difficult it is for you to cope with her during the next few weeks. While the dam is away the box should have all traces of the whelping removed and clean, fresh newspapers should be placed on the floor under the clean piece of polyester fur bedding.

If blood or fluid has stained the box, this should be washed off with a mild disinfectant. Beware of strong smelling cleaning fluids as these may irritate the delicate sensory membranes of the newborn puppies. Discarded placentas which were placed in the lidded bucket can be disposed of and any still-born puppies can be removed for burial or if to be examined by a vet they should be wrapped up in newspaper, placed in a plastic bag and if possible refrigerated. The temperature of the room must be constant, and a decision as to whether extra heat is needed for the puppies must be made. The heat pad or overhead heat lamp can be sited so that everything is prepared for the dam's return.

While the dam is safely occupied elsewhere the puppies can be fully examined again to be sure that none are deformed in any way. They can be weighed and distinguishing marks can be logged if this hasn't been done already. Many owners are upset to find that puppies sometimes appear to have rather twisted hind feet, or feet which seem to resemble a clenched fist. This is not unusual, nor necessarily a problem. The condition can be caused by a number of factors but in many cases the feet begin to function in the normal position once the puppies begin to crawl around and stand, if not sooner. The presence of one or two extra toes on the hind feet can give the appearance of deformity, especially when novice breeders have only seen adults with four hind toes. The vet will remove these in a day or two without any problem. A variation in weight between puppies can occur but this is not necessarily an indication of final size. Lack of space within the uterus may have been a factor and if the dam was mated on more than one occasion the puppies may not all have been conceived at the same time.

Long or trailing umbilical cords can be shortened without fear of bleeding now and some may have already started to shrivel. Each puppy should be carefully examined to check that all is well and that each is breathing and moving about in a normal fashion. The faeces passed by newborn puppies is a rust brown to orange colour and appears rather waxy. It may also appear to be rather more black in colour but it should not be watery or passed as a foul-smelling puddle. The heads of newborn puppies sometimes appear a little misshapen and/or wrinkled; this will usually change within a few days to a more recognisable shape. Once fully dry, the puppies will have a shiny coat and if not fat already will usually fill out within thirty-six hours if they are feeding normally.

The muzzle, lips and pads on many puppies will often be pink, or even red with or without black pigmented points; this will develop later to the full black pigment which is desired in some breeds.

The question of culling is emotive, but it is a subject that must be considered. Occasionally a puppy will be born with some defect which will prevent it living a normal life. In these cases, the puppy should be kindly euthanised by a veterinary surgeon to save future suffering, and most people would have no qualms about making the correct and sensible decision.

THE DAM

While the whelping box and the puppies are being organised, the dam should have been taken outside to relieve herself and walk about to get the circulation in her limbs functioning after her time in the whelping box. She should have had access to water but food need not be offered until she returns to her litter when she is more likely to concentrate on whatever she is offered.

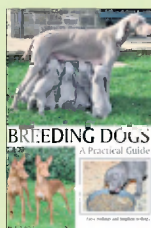
The dam should be thoroughly washed down along her abdomen and down her rear with warm water and a sponge. A mild soap or shampoo can be used, but avoid strong disinfectants which may upset the new-born puppies. Some products will leave a strong smell on the bitch which may distract the puppies from suckling and it could be ingested by the bitch as she licks herself and puppies; unless the brand you have has been made specifically for the purpose of washing down dams after whelping, then it is best just to rinse the dam once she is clean, with plenty of clear, warm water. The bitch should be thoroughly dried before returning her to her litter. Before the dam is brought back in to be reunited with her litter she should be put on a lead and collar so that she is prevented from misbehaving. She should be led into the whelping box and settled while under full control. This again will help set the pattern for her behaviour with her puppies, as she must learn to act carefully and steadily when near them.

Place the cardboard box containing the puppies to one side of the whelping box and leave them in it until the dam has been settled down in the box. Only when she is lying down and comfortable should the puppies be placed near to her abdomen so that they can all be helped on to a teat to feed. If the litter is large the dam must learn to lie completely flat to allow easy access to the lower row of teats. If the puppies need help to attach themselves it is easier for the attendant to ensure that one puppy at a time is placed on a lower teat before the next row is filled. Puppies will hold on strongly if they have their front legs set high each side of a teat and those on the top row will keep a firmer grip without wobbling if they are propped up between those suckling from the lower row. Smaller puppies may have difficulty in taking a large teat into their mouths so this must be borne in mind even though the teats nearer the rear of the dam are often the most productive.

The puppies will make a paddling movement while sucking and after a while the milk will flow; puppies then do not have to work so hard, they just have to suck steadily and swallow. Many a novice breeder will marvel at the way the puppies' tails become erect and at the noisy gulping sounds that accompany the flow. One by one the puppies will go to sleep, some still attached to a teat for comfort. It is essential that all the puppies have an equal opportunity to suckle during the first two days of life, as the milk contains

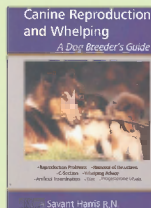


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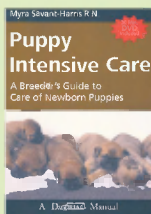
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the valuable colostrum which contains antibodies to the diseases that the dam has encountered throughout her life, as well as a defence against those diseases for which she has been vaccinated. Therefore I would recommend that for the first few days the puppies should be placed near to the teats and encouraged to suckle every two hours. Smaller puppies may be pushed away from teats by larger siblings and so may be denied this benefit without owner vigilance.

Once the puppies have fed the dam will want to lick and clean them. She will pay attention to their faces and stomach area, and will stimulate the puppies to urinate and pass faeces by licking. She will consume all the waste from the puppies for some weeks and this is quite normal. Some bitches do become rather obsessive about cleaning puppies and those rearing a small number of puppies may have to be firmly discouraged from constantly soaking them. Although they are undoubtedly her puppies, a healthy respect for your wishes will not come amiss for the puppies and her own comfort.

Any puppy which fails to respond to the idea of suckling is not necessarily disabled. Some puppies do have slower responses for feeding. They should be kept warm and placed near to the teats and often the stimulation of the more lively members of the litter crawling about will create more interest. If a puppy seems particularly poor in getting the idea of holding on to a teat it can often be induced to suckle if it is scratched quite firmly along the length of the spine in the opposite direction to the lie of the hair. I have found puppies will become quite agitated and cross and if the teat is moistened they will usually take a grip on it for comfort if nothing else. The old idea of smearing the teats with honey does no more than present a possibil-

ity of the puppy getting a tummy upset through the sugar ingestion. Those puppies who are keen to feed but seemingly unable to find a teat need no more encouragement than a few drops of milk manually expressed and smeared around the nipple.

When the family is fed and cleaned the dam may be offered a small light meal although some bitches will refuse solid food for a day or more. White meat and boiled rice, cooked eggs or some similar, highly nutritious but easily digested food may be offered every four hours or so, followed by a drink if required. If the dam has been accustomed to drinking milk regularly she may be keener to drink this than water but if she is unused to milk it may cause diarrhoea. Great care must be taken not to upset the dam's appetite by constantly pushing food at her. She must be encouraged to eat well as she will need a lot of sustenance to rear her litter. There is nothing wrong with tempting a finicky feeder with a few choice morsels, but the dam must be encouraged to eat sensibly if she and her litter are to remain fit. The addition of vitamin or mineral supplements may initially cause meals to be rejected, so consider the possible reasons if food is refused.

The dam will probably settle down to a good deep sleep, but there is no way that the attendant can do the same. While the puppies are so small and vulnerable they could easily be killed by the simple action of the dam turning around or rolling over. It is essential that there is someone in attendance, certainly within earshot, until the puppies are big enough to crawl away from under the dam if she should accidentally lie across them. If the dam is settled and lies contentedly, she should be turned over every two hours for her comfort. She should also be taken outside to relieve herself regularly,

even if she doesn't appear to want to go and of course any discharge clinging to her hair and body should be washed away before she returns to her litter. The bitch will lose a discharge from her vulva for some weeks after whelping, first seen as a dark greenish-brown colour for about a day after the birth, then changing from a dark brownish-red colour to a paler red as it diminishes. The amount of discharge lost will vary according to the size of the litter as it is the residue from the attachment sites of the placentas on the wall of the uterus. If the discharge should appear black and foul-smelling it should be investigated by a vet without delay.

With only a small number of puppies in a litter, a bitch can suffer from mastitis and those bitches which have been particularly well fed are the most prone to the problem. The signs are one or more of the mammary glands appearing very reddened and very hot to the touch. The bitch may also show symptoms of fever and great discomfort but this is not always experienced. First aid from the owner can give some relief before veterinary attention is available. A towel soaked in warm water and then wrung out should be applied to the affected teat and surrounding area and the milk should be expressed manually and discarded. Puppies should not be encouraged to suckle from this teat straightaway as the milk will be affected. Manual expression can be attempted every hour or so and after about four treatments the strongest puppy in the litter should be encouraged to draw from the teat. With veterinary treatment most bitches return to normal very quickly although a close watch should be kept on the mammary glands throughout the weeks that she is feeding her puppies in case of recurrence.

Artificial Insemination

When semen is introduced into a bitch's reproductive tract other than directly by the dog at mating, with the intention of the bitch becoming pregnant, this is artificial insemination (AI). The semen used can be:

Fresh (i.e. just collected from the dog) - usually referred to as 'side-by-side' AI. Both the dog and the bitch are in the same place and the same time.

Chilled – semen is collected, has a 'chilling extender' added which extends the life of the sperm and is then cooled and stored at fridge temperature (3-4 °C) for up to 10 days before being used.

Frozen – semen is collected, has a 'freezing extender' added and is then frozen in a very precise manner down to -196 °C over liquid nitrogen, and then stored indefinitely in liquid nitrogen at this temperature.

Using chilled or frozen semen allows bitches have pups sired by dogs separated by distance (chilled or frozen) and time (frozen).

Collecting semen from a dog

This is possible in most dogs. It is usually easier when a bitch in season is present. In a dog unfamiliar with this procedure the dog should be allowed to mount the bitch. If you are right handed kneel on the left side of the dog and use your right hand to hold the dog's penis (the opposite way round if you are left handed). The dog's penis is held gently and the prepuce pushed backwards along the penis to behind the bulb of the penis (the part that becomes hugely swollen during an erection). A full erection with the penis still inside the prepuce can be very painful for some dogs.

The penis should be circled with your thumb and finger of your right hand just behind the bulb of the penis and gentle pressure applied. This encourages the development of an erection by restricting the blood flow back out of the penis so that the penis will become engorged. Mild pressure over the remainder of the penis using the rest of the same hand mimicking the feel of the penis inside the bitch's vagina will stimulate the penis to become erect.

The dog should be thrusting at this point trying to enter the bitch.

Initially there will be a flow of a small quantity of clear fluid from the penis. This may be slightly urine tinged particularly if the dog has urinated recently. This first clear fluid is the first fraction of the ejaculate and is prostatic fluid. This does not need to be collected.

Once a full erection has developed the dog may attempt to pass one back leg over the collectors arm like he does when 'tied' to a bitch. Around this time the second fraction of the ejaculate, the sperm-rich fraction, or semen is passed from the penis. This fraction should be white or creamy coloured. This is the important part of the ejaculate to collect and can be collected by passing a clean, clear plastic bag or a disposable artificial vagina over the penis. Alternatively, a clean plastic funnel placed in the neck of a plastic test tube can be used. All the sperm rich fraction of the ejaculate should be collected.

Following the sperm rich second fraction a third fraction of spurts of prostatic fluid (clear) will be ejaculated. This does not need to be collected unless it is required for analysis, for example in a dog with prostatitis. If required it should be collected into a different bag or tube from the sperm-rich fraction.

In dogs with disease of the reproductive tract the first and third fractions may be creamy coloured or bloody if there is disease of the prostate. In infertile dogs not producing any sperm the second fraction of ejaculate may be clear. Sometimes the semen may be blood tinged. This may be because of disease of the reproductive tract or it may be due to a little blood vessel in the penis becoming damaged during the erection. This is not usually a major problem but if it contaminates the semen rich second fraction it may adversely affect how well the sperm survive chilling or freezing.

Most dogs can be trained to accept being collected from. Many experienced stud dogs become so used to the procedure that they no longer require a bitch in season to be present.

Semen Analysis

Ideally the semen should be analysed as soon as it is collected. Analysis involves:

- Counting the total number of sperm in the ejaculate. This is achieved by counting the number in a very small volume either manually (using a haemocytometer – which is a special microscope slide used usually for counting blood cells) or automatically using a sperm counter. The number in the small volume is then multiplied by the total volume collected to give the Total Number of Sperm in the ejaculate.
- Counting the proportion of active sperm in the ejaculate. Only sperm

that are swimming vigorously will stand any chance getting to fertilise an egg. The proportion actively swimming is estimated by examining the semen on a warm microscope slide though a microscope. There are some computerised systems available that can do this automatically.

- Counting the proportion of normal sperm in the ejaculate. Abnormal sperm (ones with bent tails, abnormal heads or immature ones) will also not be capable of fertilising an egg, even though they may be swimming vigorously. The proportion of normal sperm is again estimated by examining the semen on a warmed microscope slide thought a microscope.

It is estimated that on hundred million (100 x 106) active normal sperm are required to give a good chance of a bitch becoming pregnant. This is often described as a bitch dose. Small breeds may only require 50 million active normal sperm as a bitch dose. Young fit dogs of medium to large breeds may produce several bitch doses at each ejaculation. Toy breeds may only produce one.

If the semen is to be preserved by chilling or freezing it should be processed as soon as possible after collection. Without an appropriate extender being added the semen quality will deteriorate as the sperm use all their stored energy up and begin to die.

Semen Chilling

The sperm-rich fraction of the semen is mixed with an extender and then cooled. Extenders can preserve the semen for up to between 2 and 10 days depending on the type of extender. Most will guarantee to preserve at least 70% of the original motility for this time. Cooling and storing the semen at fridge temperature (3-4 °C) slows down the metabolism of the sperm so their energy reserves last longer. The extenders usually contain an energy source for the sperm and a formulated to maintain the health of their cell membranes. Antibiotics are also included. Many chill extenders contain egg yolk. Semen will deteriorate in quality with time and if not stored correctly.

Chilled semen can be shipped in Chill boxes which keep semen at the correct temperature for up to 48 hours – these are basically polystyrene boxes (well insulated) containing one or two 'freezer blocks' to maintain chill temperature. It is possible to ship semen to and from as far away as the United States and Eastern Europe depending on flights and courier service.

Cost of a Chill box with extender is £60-80. Cost of shipping depends on route and destination but usually £50-100 for Europe. To import semen to the UK the stud dog must qualify under the Pets Passport scheme and you will need an import license for which you should apply to DEFRA well in advance.

Chilled sperm will only live a day or so once introduced in to the bitch so correct timing is critical. The bitch should be progesterone tested every couple of days from day 5-7 of her season and once she is close to ovulating or is ovulating, the semen can be collected, chilled and shipped by courier in a Chill box by guaranteed next day delivery. This is so the semen arrives in good condition and can be inseminated during the 2-3 days when the eggs are capable of being fertilised.

With collections from medium or large breeds of dog where there are multiple bitch doses per collection or from smaller breeds where multiple collections have been taken the chilled semen can be split and the bitch inseminated on two consecutive days. This may increase success or produce larger litters as not all the eggs are ready to be fertilised at exactly the same time. However expert opinion is divided on this with some experts advising that the chilled semen should be introduced in to the bitch as soon as it is available as the sperm will survive better inside the bitch than in the extender.

Semen Freezing

Semen freezing is a fairly specialist process. The equipment required involves not an inconsiderable investment and the method of freezing is and exact procedure and failure to follow protocol precisely may lead to all the sperm failing to survive the freezing process. Methods of freezing vary with institution and some commercial methods are closely guarded franchises. Even so the semen of some dogs survives freezing less well than others, and some individuals have semen that fails to survive freezing whatever method is used. Semen quality is always better in young adult dogs and will begin to deteriorate as they get older. Better quality semen freezes better too. If you have a stud dog that you may want to have semen frozen of it is always better to do this while he is young, even before he has fully proved himself in the ring or at trials. By the time he is 7 or 8 years old his semen quality may have deteriorated and may not survive freezing at all.

After analysis the fresh semen is mixed with a freezing extender which protects the sperm cell structures during freezing. The semen may be frozen in straws or as pellets in vials. The semen is frozen gradually to -196°C Sperm can be stored indefinitely this way but specialist facilities are required for freezing and storage. The quality of the semen is always reduced by freezing. There is no deterioration in the quality during storage – the semen will be as good (or as bad) after 100 years of storage in liquid nitrogen as it was at day 1. But if the temperature is allowed to rise (for example if the liquid nitrogen runs out), all the sperm will die.

Frozen semen can be shipped in 'dry shippers' which are containers with

by
Louise McLean MRCVS

a special lining that absorbs large quantity of liquid nitrogen and keeps the frozen semen at the correct temperature for up to 10 days. This allows shipping to anywhere in the world, but must be shipped to a centre with liquid nitrogen storage facilities to allow continued storage.

Cost of freezing semen is £250-500 per collection. The number of straws or pellets produced depends on the concentration, quality and amount of semen produced. This in turn depends on the size and breed of dog and the ease of semen collection. The number of straws or pellets required to inseminate one bitch depend on the quality of the semen and how well it survives the freezing process. Small dogs may only produce one bitch dose per collection; giant breeds may produce 6 bitch doses per collection.

To import frozen semen to the UK the dog again must qualify under the Pets Passport scheme or the semen must already have been stored for 6 months and the dog certified as still fit and well. The costs of shipping frozen semen are higher than chilled semen – the 'dry shippers' are bulky containers and have to be returned to the centre that owns them after shipping of the frozen semen. Cost of shipping may be several hundred pounds unless the shipper can be shared with semen from other importers. Cheaper disposable dry shippers are available but these will only keep the semen frozen for 2 days so are risky for long distance shipping.

There is also usually an annual storage fee for frozen semen this is usually around £50-70 for up to 25 straws or 10 vials of pellets.

Sperm that have been frozen will only survive for approximately an hour once inseminated into a bitch so accurate timing of insemination is critical.

A small quantity of the semen (1 pellet or 1 straw) should be thawed after freezing and evaluated. This is important as the number of straws or pellets required to produce a bitch dose will vary not just with the concentration and quality of the sperm before freezing but also on how well the semen survives the freezing process.

For example, if a dog produces 5ml of semen with 100 million sperm per ml and 80% of them are normal and swimming vigorously then this equals:

5ml x 100 million sperm x 80% swimming = 400 million vigorous sperm = 4 bitch doses.

But if only 20% of the sperm are still alive and swimming after the freezing process then this equals:

5ml x 100 million sperm x 20% swimming = 100 million vigorous sperm = 1 bitch dose

So it doesn't matter if these sperm are divided by 2 straws or 10 straws the full amount is still only one bitch dose. So all of it (whether that be 2 straws or 10 straws) will need to be used in one bitch at one time in order. This illustrates why post freezing semen analysis is so important. If you are considering buying some frozen semen make sure it has been properly evaluated post freezing as you need to make sure that you are buying not just a set number of straws or vials of pellets but actually the correct number of bitch doses that you require.

Timing of the bitch

The time during the bitch's heat at which ovulation (the eggs leaving the ovaries) occurs varies with the individual concerned. Ovulation can happen as early as day 3 or as late as day 28 of a heat. Mating at a set day (eg day 12) of a heat is not recommended. This is often successful because fresh semen can survive up to 10 days inside a bitch. Even at ovulation the eggs are not capable of being fertilised and require 2 days to mature further so they are capable of being fertilised. They will survive for another 2 days until they disintegrate if they have not been fertilised.

The most accurate method of timing a bitch is to use serum progesterone concentration. In the early part of the heat period the progesterone concentration is low. It first starts to rise at the time there is a peak in luteinising hormone (LH), 2 days after this, ovulation occurs, and 2 days after this the eggs are capable of being fertilised. The eggs are usually capable of being fertilised for the next 2-3 days (the fertilisable period)

Identifying the first rise in progesterone (the time of the LH surge) gives you up to 5 days' notice of when the eggs are capable of being fertilised. This will give you time to arrange travel plans or get chilled semen shipped in from abroad.

Progesterone testing is vital if chilled or frozen semen is to be used as the bitch has to be inseminated when the eggs are capable of being fertilised as the sperm will not survive long inside the bitch.

At Croft Reproduction we measure progesterone in nmol/l. In the USA ng/ml are the units used. A rough conversion rate is 1 ng/ml = 3 nmol/l, but

Continued on page 24

Healthy Breeding & Whelping

Advanced breeding techniques with Croft Reproduction

Semen freezing and storage

Dog semen, once frozen, survives indefinitely. The quality doesn't deteriorate with time and it will be as good quality 100 years after freezing as it was the day it was frozen. This means that you can capture and preserve the qualities of your stud dog and have them available to you and your breed for very many years.

Semen freezing is a specialist process and methods vary. At Croft we pride ourselves on producing the best quality frozen semen we can to maximise results. We have both the Camelot Farms and LSU methods of freezing available.

Progesterone testing

At Croft we have the ability to measure bitch serum progesterone concentration using a Siemens Immulyte analyser. This produces a validated, quantitative result which is the best way of timing mating to maximise litter size and is vital if artificial insemination (AI) is being used.

Endoscopic Trans-Cervical Insemination

When using frozen or poor quality chilled semen to inseminate a bitch it is vital that the semen is placed inside the bitch's womb rather than just in her vagina. Endoscopic-guided Trans-Cervical Insemination the method used at Croft for this as no surgery or anaesthetic is used. Most bitches tolerate this procedure very well and we are happy for owners to be present.

The bitch remains awake and standing as an endoscope is introduced into her vagina so that her cervix can be seen. The semen is placed in her womb via a catheter passed up through her cervix via the endoscope.

The Kennel Club will readily accept litters conceived by Trans-cervical Insemination.

If you would like to discuss semen freezing, artificial insemination or any aspect of reproduction please contact Croft Vets on 0191 2503800 or visit www.croft-reproduction.co.uk



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Snowsilk Comfort for your animals - easy for you

Snowsilk Whelping Boxes was Established in 1984, and is used by Top Breeders all over the world. We are the UK's Premier Supplier of quality uPVC Whelping / Kitting Boxes, Puppy Pens, Cat Penthouses and Dog Housing Units. All our units are Hygienic, durable, insulated and safe for your animals.

Snowsilk is a unique range of Whelping / Kitting boxes and housing units made from uPVC, developed for those who are serious about their dog and cats comfort, security and welfare.

Snowsilk have combined the advantages of convenience for you, along with comfort and security for your pet, by producing a range of products which are durable, low maintenance and high quality.

Our whelping boxes have many thousands of satisfied customers. It is extremely versatile and has a contemporary feel. It will fit in with any decor and is unobtrusive in the home.

All units pack flat in minutes, so when not in use they can be easily stored away.

From the animals point of view Snowsilk whelping boxes offers comfort, warmth and is draught free. The units are multi-functional and offer the ultimate in flexibility. The housing system quickly becomes your animals own portable space, unlike other wire housing that can only ever be a cage.

Call us on our new Freephone number 0800 6440344 for a brochure and price list - OR see our website www.snowsilk.co.uk

LIQUIVITE - Weaning Food for Puppies

LIQUIVITE is a liquid canned meat-based food with the consistency of a creamy chicken soup. Breeders have found that Liquivite is an ideal weaning food for puppies, introducing meat into their diet, but in a familiar liquid form. A sample 395g can of Liquivite is included in the "Our Dogs" Goody Bags, distributed at most leading Dog Shows.

As well as for puppies, Liquivite can tempt dogs with reduced appetite, particularly older dogs, being easier to consume. It offers them a variety of taste and texture. Where a dog may not drink enough Liquivite also helps maintain liquid intake.

Liquivite was originally developed for veterinary use, to feed the sick, convalescent and post-operative dog and cat, unable or unwilling to eat. Its smooth texture makes it ideal for syringe-feeding following illness, injury or surgery, when appetite is absent, while its high palatability encourages voluntary feeding as appetite returns. Being liquid, Liquivite both feeds and rehydrates, equally important requirements for recovery.

Liquivite can be bought online from our website - www.liquivite.co.uk in 1, 2 and 4 can trial amounts, or in cases of 12 cans. The website gives full details on Liquivite's ingredients, supplementation and analysis.

Liquivite Vetfoods, 3 Bromwich Avenue, Highgate, London N6 6QH
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Web: www.liquivite.co.uk

Be amazed with Natural Instinct's weaning food

WINNERS OF Pet Specialist Service 2011 at the recent Pet Industry Awards, Natural Instinct produces what many top breeders regard as the best possible foods for any new litter of puppies. Their Weaning food consists of finely ground chicken and bone, and is an ideal introduction to solid food from around 3-4 weeks of age, and their complete Puppy food contains 85% chicken and bone and 15% fresh fruit and vegetables, together with additional nutrients to ensure optimum health. Breeders have consistently been amazed at the difference these foods can make to not only the condition of their litters but also to the recover of the bitch after giving birth.

To see a video of 3 week old Rhodesian Ridgeback puppies being fed raw meat and bone, click on: <http://www.naturalinstinct.com/products/Weaning-food.html> and "Product Videos".

All Natural Instinct foods contain high quality, human grade meat and vegetables, with no cereals, grains or fillers. This means that not only will your puppies develop in to strong healthy dogs, but house-training is also made much easier, as a raw fed dog produces significantly less waste than one fed on dried food, and needs to go to the toilet much less often. This is quite a bonus when you have a large litter or large dogs!

In addition the company also sell a variety of bones, which can be introduced to puppies from an early age with supervision, as not only do dogs need to learn how to eat a bone, but their bodies also need to learn how to digest it. Starting at an early age is therefore ideal. It is quite something to watch a proud mum drop a bone in with her litter, and see them gumming it with relish!

All puppies require training (some more than others!), so a range of training treats are also available. All Natural Instinct products can be purchased online at www.naturalinstinct.com, and a next day delivery service is available Tuesday to Friday.



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Natural Instinct

Dog & cat food as nature intended

"I can't praise Natural Instinct Weaning paste enough. After having to hand rear ten puppies from three days old and losing two of them I was so fearful for the rest. I struggled for the next week and a half until I contacted Natural Instinct and was told about their Weaning paste. I started weaning my remaining puppies at 15 days old and I was amazed at how quickly they improved and became stronger by the day. They have grown into normal happy healthy puppies and I'm positive this food saved their lives. Thank you all at Natural Instinct."

Sue Campbell (Nyassa Rhodesian Ridgebacks)
Int.Ch Show Judge & Crufts 2012 Judge

Weaning Paste

100% fresh British
chicken with bone
450 gram tub

Trusted by top breeders

"We have been using your working mix for our Tibetan Mum from the day we knew we would mate her. She has produced the best ever litter for us, of super glossy puppies... and her condition has improved 100%. Thank you for making this breeding breakthrough."

Tiamastae Tibetan Terriers www.champdogs.co.uk

"Even I was impressed by the standard of production and delivery, and above all, the food. It is obvious that the standards you set yourself for the freshness of the meat you source is very high. May you go from strength to strength."

Abbeymill French Bulldogs www.champdogs.co.uk

"We have used Natural Instinct Weaning food since they first started it, and it is by far the best weaning food on the market. We at Snugglepug would not use anything else for our pug puppies."

Snugglepug Pugs www.snugglepug.co.uk

"Our puppies, although born 5 days early, are looking great, with superb bone on both of them. They love their weaning paste. We are absolutely thrilled with them - thank you so much. I am positive it is down to your food that mum and babies are doing so well."

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THE BEST-SELLING Wren kennel heaters provide safe "deep heat" for rearing and nurturing litters of puppies, as well as its most popular use as a heater for kennels. The choice of unit size and wide range of element ratings allow selection of the correct size unit and element for whelping bitches and their puppies, providing safe warmth for them all.

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The Wren Standard Size unit

Maximum power 250W. Will cover any animal and its young up to the size of a Cocker Spaniel dog. 29cm diameter polished aluminium reflector. Supplied complete with a virtually unbreakable heat and weather-resistant plastic element holder, safety wire guard, 2 metres heat and weather-resistant p.v.c. cable, plug and screw-in porcelain element available in 250, 200, 150, 100 or 80 Watts.



The Wren Major Size unit

Maximum power 400W. Will provide an area of warmth for larger breeds of dog with their young. Lower wattage elements may also be used in the heater to provide a wider spread of less intense heat.

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Visit our website at www.diamondedge.co.uk for full details and prices.



PREGNANCY AND WHELPING THE NATURAL WAY

by Mary Boughton of Dorwest Herbs

Chairman of the National Office of Animal Health's Companion Animal Sub-group



EVERYONE WANTS to do the right thing when thinking of breeding with their bitch for the first time and it is only natural for the owner to be concerned that they are doing all they can to ensure the health of the mother and pups. It certainly is very useful and reassuring to read up on what to expect, but really it is simple common sense that is the most important thing to bear in mind when taking care of the in-whelp bitch.

Try to plan ahead, even before the mating, by ensuring that the bitch is in the best possible health before she is mated, as good general health will affect the overall fitness and robustness of the mother and her pups later on. A high quality all-round herbal supplement is very helpful and Keeper's Mix is ideal as it provides a wide range of minerals and vitamins, all of which occur naturally in the eight herbs that make up this herbal supplement. One of the most important elements in the diet of the bitch before mating is Vitamin E, often referred to as the fertility vitamin. One of the best ways to give this is by adding a daily dose of Wheatgerm Oil, either capsules or liquid, to the feed. This has a high level of Vitamin E in a natural form which is easily taken into the system. Start giving Wheatgerm Oil from the first sign of the bitch coming into season, but on the day before mating and the actual day of mating, double the amount to give an extra boost in the system and so increase the chances of a successful mating. This supplement should ideally be given to both dog and bitch.

Initially the pregnant bitch does not require too much special care, but continue to give the daily maintenance amount of Wheatgerm Oil as this is considered to help prevent abortion or absorption during the first three weeks of gestation. Keeper's Mix will continue to provide a good range of other necessary minerals and vitamins throughout the pregnancy. From the third week of gestation Raspberry Leaf Tablets should be given daily as they are an excellent tonic for the reproductive system and will help to ensure a quick and easy birth when the time comes. The amount of food given to the bitch doesn't need to be increased until around the sixth week of pregnancy. This is when the pups really start to grow and the bitch will therefore also begin to gain weight. Exercise is important to keep the mum-to-be fit and healthy, but this shouldn't be overdone. It will soon be apparent when she is feeling the burden of the growing pups and she will moderate her exercise herself. The kidneys are the body's eliminators of waste and to keep them functioning well always make sure that a good supply of fresh clean water is available for the dog to help herself.

The gestation period for a dog is 63 days but healthy pups can be delivered any time from 58 to 68 days. A few days before the birth the bitch may appear to be unsettled, sometimes shredding up her bedding and trying to make a nest. This is quite common and no cause for concern - a little reassurance is all that is required of you. It is very common for her to refuse food from 24 hours before the birth and she should not be forced to eat, just give water with a little honey added for energy. It's a good idea to stay near her around this time so you can keep an eye on matters.

When contractions start it can be a worrying time for the owner who's overseeing their first whelping, and the most important thing is to be calm and to try not to fuss unduly. This is the time to start giving the homeopathic remedy Caulophyllum 30C as this helps contractions and aids the actual delivery. Keep a close eye on a bitch while she is whelping, especially if it is her first litter, but don't interfere too much unless she appears to be in difficulties. If there is any sign of a problem ring the vet for advice, but remember that most bitches self whelp successfully and all they require from you at this time is moral support and a confident and reassuring manner.

DNA Testing

FOR A number of years breeders have benefited from using health schemes, e.g. BVA/KC hip dysplasia and elbow dysplasia schemes and BVA/KC/ISDS eye schemes to assist in controlling certain conditions in their stock. More recently with the advances in DNA technology DNA tests have been developed to identify the genetic mutations responsible for certain conditions.

Once the test has been developed clear, carrier and affected dogs, with respect to that mutation, can be identified. The Kennel Club, in conjunction with the breed clubs concerned runs DNA schemes for many breeds and publishes or has available on their web site details of clear, carrier and affected dogs. This allows breeders to eliminate deleterious genes from their stock/breed.

Another significant advance in dog breeding is the use of quantified progesterone assays to determine the optimal time of mating. Although obviously not the only reason for failure to conceive, it is the commonest cause. In many cases physical signs and behaviour are helpful, but they can be misleading in selecting the best time to mate. With the greater distances traveled to stud dogs throughout Europe, and the increased use of AI this test is particularly useful.

Larry Roberts - IDEXX Laboratories
Tel: 0800 587 0602 e-mail: labhelp@idexx.com

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3 NATURAL STEPS FOR EASY WHELPING

1

WHEATGERM OIL contains a natural source of Vitamin E, the 'Fertility Vitamin'. Give to both males and females for one week before mating, doubling the amount on the day before and the actual day of mating to maintain good fertility. Continue to add to the bitches diet for three weeks after mating to protect against the possibility of abortion and absorption.



2

RASPBERRY LEAF TABLETS act as a uterine tonic and have been used for hundreds of years to help ensure an easy and straight forward delivery. Many bitches who have previously experienced problems have subsequently had normal easy births with the aid of this tablet. Give from the third week after mating until one week after delivery to help ensure complete afterbirth expulsion.



3

CAULOPHYLLUM 30C is a homeopathic remedy that is derived from Blue Cohosh and helps maintain contractions and so aids delivery. It should be given every hour as soon as contractions begin until delivery is complete. This product has become an essential item in many breeder's medicine cupboard.



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IDEXX Laboratories is the largest UK veterinary pathology laboratory with over 20 years of valued experience and is dedicated to offering a complete diagnostic service to the veterinary profession. We are able to offer a Service dedicated to the genetic screening of breeding animals, and to help optimise the timing of mating (quantified progesterone testing).



DNA SCREENING FOR BREED SPECIFIC PROBLEMS

Testing is carried out in laboratories throughout the world, and the results are acceptable to The Kennel Club for inclusion in their DNA screening databases.



DISEASE	BREEDS COVERED
CLAD (Canine leucocyte adhesion deficiency)	Irish Setter
Collie Eye Anomaly (CEA)	Border Collie, Rough Collie and Smooth Collie, Longhaired Whippet, Lancashire Heeler, Shetland Sheepdog, Australian Shepherd
Copper storage disease	Bedlington Terrier
Cystinuria (genetic predisposition)	Newfoundland, Landseer
Fucosidosis	English Springer Spaniel
Night blindness (CSNB)	Briard dog
Exercise Induced Collapse (EIC)	Labrador Retriever, Chesapeake Bay Retriever, Curly-coated Retriever
L-2-HGA (L-2-hydroxyglutaric aciduria)	Staffordshire Bull Terrier
Mucopolysaccharidosis VII	German Shepherd
Myopathy (CNM, HMLR, LRM)	Labrador Retriever
Phosphofructokinase deficiency	English Springer Spaniel, American Cocker Spaniel and their cross breeds
prcd-PRA (atrophy of the retina)	Australian Cattle Dog, American Cocker Spaniel, American Eskimo, Chesapeake Bay Retriever, Chinese Crested, English Cocker Spaniel, Entlebucher Mountain dog, Kuvasz, Laponian Herder, Labrador Retriever, Miniature Poodle, Nova Scotia Duck Tolling Retriever, Portuguese Water dog, Swedish and Finnish Lapp dog, Silky Terrier, Australian Stumpy Tail Cattle Dog, Toy Poodle, Golden Retriever, Pumi
cord1-PRA	Miniature long haired and smooth haired Dachshund, English Springer Spaniel
rcd1-PRA	Irish Setter and Cardigan Welsh Corgi
rcd2-PRA	Collie
Von Willebrand- disease	Type 1: Dobermann, Poodle, Manchester Terrier, Bernese Mountain dog, German Pointer, Welsh Corgi; Type 2: German Wirehaired; Type 3: Scotch Terrier, Sheltie

The tests shown above are a sample of the range available.
We are continually validating tests and further screens will be added when available

DNA Screening is available through your veterinary surgeon

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Healthy Breeding & Whelping

Supplement praised for restoring coat of breeding bitch

One of the UK's top boxer breeders has praised the nutritional supplement Yumega Dog for restoring the coat of one of her bitches following a litter of puppies.

Lynn Mair from Glenauld Boxers in Scotland, which has twice been the top UK Kennel in recent years, put Ch Diamond Lottery at Glenauld JW on the coat and skin natural health product from Lintbells and saw a remarkable difference in just a month.

Yumega Dog is a unique blend of one of the richest sources of essential Omega 3 and 6 seed oils from natural coldpressed golden flax and starflower. It also contains the antioxidant Vitamin E from natural plant sources which supports the skin's defences.

Lynn said: "We've had our show boxers on Yumega Dog because they do so well on it and it really brings out the richness of their coats. But when this one lost so much hair after having puppies we tried it to see if it would help. The 'before' and 'after' pictures were taken a month apart and the improvement was amazing."

Co-founder and Commercial Director of Lintbells John Davies said: "Of course it is perfectly natural for a bitch to lose her coat in the weeks after whelping but if she is put on Yumega Dog it can start to make a difference from as little as three weeks.

"We have great customer feedback from people in the showing world who use Yumega Dog to keep the coats in top condition but we'd also recommend it to breeders who want to keep their bitches in the best condition too. The product contains completely natural ingredients so it is fine to feed to a bitch during pregnancy and whelping."

For more information about Yumega Dog please contact Lintbells on 01462 790886 or visit www.lintbells.com.



Ch Diamond Lottery at Glenauld JW before taking Yumega Dog and again one month later.



Lintbells customers give puppy supplement top marks

Breeders have given Lintbells' YUM Puppy health supplement top marks in customer satisfaction ratings of the product, just six months after its launch.

YUM Puppy has been designed to help the litter from within the womb. By feeding it to a bitch before mating and during pregnancy and whelping, when her nutritional requirements increase significantly, it will ensure her omega 3 DHA levels are not critically depleted. It will also help her to get the most out of her diet to ensure puppy growth and development.

Deborah Weightman who breeds Bearded Collies in Northallerton, North Yorkshire, noticed a big difference after feeding the supplement to her bitch in whelp. All eight puppies were healthy and developed well. Deborah said: "I started feeding Yum Puppy to this bitch soon after mating her and despite the fact that she is usually a fussy eater she remained in very good condition throughout the pregnancy. I gave it to the puppies until they went to their new homes and it kept their digestive systems very healthy."

"I was able to start showing the bitch again within a couple of months because her condition and coat remained so good. I would thoroughly recommend YUM Puppy."

YUM Puppy acts in three main areas to support a puppy's growth and development through the first year of its life. It focuses on promoting healthy digestion and growth, supports the immune system and aids brain and eye development. The supplement contains proven levels of three key ingredients for puppy health. Omega 3 DHA is essential for healthy brain and vision development and can help improve a puppy's training and development. Beta glucans helps to support the natural development of a healthy immune system and oligosaccharides provide a feed source for good bacteria in the digestive system to help support healthy growth and development.

Dr John Howie, nutritionist and co-founder of Lintbells, said: "We are encouraging responsible breeders to join our breeder scheme and sell their puppies with a YUM Puppy pack, which not only adds value for the new owner but will mean the puppy itself will find that transition period much easier as it enjoys the unique



nutritional benefits of this supplement.

"In addition the pack will give the new owner a wealth of information including an early stage health booklet and a veterinary record sheet to note the puppy's vaccinations, worming and flea treatments."

Rhodesian Ridgeback breeder Jackie McCarthy-Booth from Leyland, Lancashire, thoroughly recommends the product to her puppies' new owners. She said: "With my recent litter the puppies had a healthy digestion, were full of life and grew beautifully. I rate YUM Puppy as excellent and would highly recommend other breeders to use it."

For more information about YUM Puppy and the breeder scheme please contact Lintbells on 01462 790886 or visit www.lintbells.com.



Improve your bitch's coat



TALRAZ HONEY TRAP JW

Wearing a brand new coat after her litter, Honey returned to the ring, and took bitch CC at Belfast and Res CC at Driffield. We think she looks good!!
Liz Jay



KERRIMERE COVER GIRL TO CANTERIS

My bitch had one RCC on her second trip back in the ring from having a litter. I contribute that fact she was showable coat-wise to the decision to start her back on Yumega the minute she weaned the pups. Her coat came back quickly in beautiful condition. Chris Jennings



SH.CH CASTLEROCK MAGIC MOMENT JW

Magic threw her coat completely last year when she had her pups. I'm proud to say she is now a Champion, having won her 2nd CC at WELKS and her 3rd CC at SKC in August. Dorothy Brooks.

Proven to encourage rapid coat growth and recovery

The unique formula in our market leading coat supplement, Yumega Dog, has helped thousands of breeders and exhibitors to improve bitch coat recovery and condition after puppies.

- ✓ Promote rapid and full coat growth
- ✓ Develop perfect natural coat condition and texture
- ✓ Encourage puppy coat development

Now available in new 500ml bottles, so now you can improve her coat for even less!



For more information on how you can improve your bitch's skin & coat, call 01462 790886, visit www.lintbells.com or visit the Lintbells stand at the shows.

GIVE YOUR PUPPIES THE BEST START IN LIFE!



YUM Puppy is uniquely developed to give your puppies a healthy start.



BRAIN & EYE DEVELOPMENT

Omega 3 DHA is essential for healthy brain and vision development and can help improve your puppy's training and development.



HEALTHY IMMUNE SYSTEM

Beta glucans helps to support the natural development of a healthy immune system.



HEALTHY DIGESTION & GROWTH

Oligosaccharides feed the good bacteria in your puppy's digestive system to help support healthy growth and development.

Feeding YUM Puppy for optimum results

YUM Puppy supports your puppy's health right up to 12 months of age, but you can start with your bitch for optimum results.

Start feeding to bitch prior to mating

To ensure elevated levels of Omega 3 DHA in your bitch prior to pregnancy and support her digestive health.

Feed to bitch throughout pregnancy and whelping

Your bitch will pass on DHA to her puppies to ensure optimum brain & eye development, whilst beta glucans & oligosaccharides will help her digestion.

Feed to puppies once they start solids for at least the first 6 months

DHA will continue to support brain & eye development. Beta glucans has been shown to support natural immunity & oligosaccharides will help their digestive system and support growth.

YUM PUPPY
BREEDER SUPPORT SCHEME

"Puppies have healthy digestion and are growing beautifully. Would highly recommend other breeders to use this product."
J. McCarthy- Booth

"I was extremely impressed with the results. The puppies all developed well, they were more alert and their digestive health and growth was better than I would have normally expected."
Marcel Huls



For more information on YUM Puppy and our breeder scheme, please send us your name and address or call us on 01462 790886.

Name _____

Address _____

Please send me: ☐ YUM Puppy info
☐ Breeder Support Scheme info

Send to: FREEPOST RRLX-XBKE-BCSK, Lintbells Ltd,
Unit 16 Weston Barns, Hitchin Road, Weston, HITCHIN, SG4 7AX.

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Lintbells

www.lintbells.com

Healthy Breeding & Whelping

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interpreting progesterone results that you know what units they are being reported in.

Our guide for interpreting progesterone concentrations is as follows:

Progesterone concentration	Interpretation and advice
<3 nmol/l	Basal level - retest in 2-3 days
3-6 nmol/l	Possible time of LH surge, retest in 2-3 days to confirm ovulation
6-15 nmol/l	Between LH surge and ovulation. Retest in 2 days to confirm ovulation
15-20 nmol/l	Ovulation occurring, fertilisable period starts 2 days' time
20-60 nmol/l	Ovulation has occurred
40 nmol/l	This is around the ideal progesterone concentration for AI
>60 nmol/l	May have missed fertilisable period

Methods of insemination

Intra-vaginal insemination

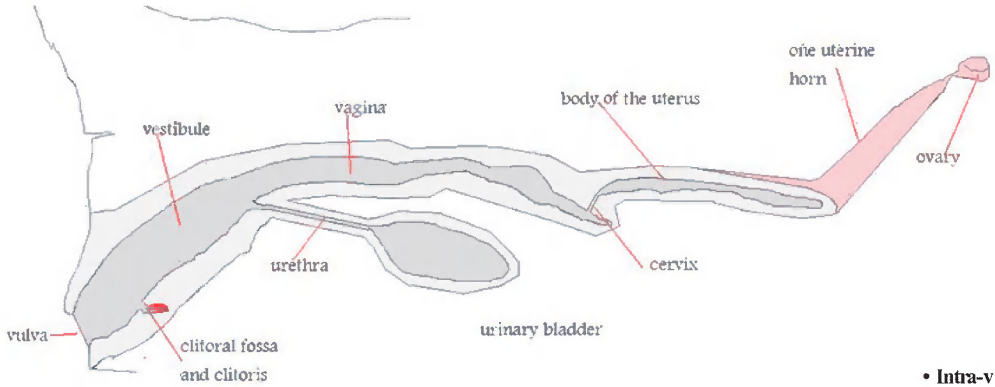
Semen is placed into the vagina (the same place as the dog would have left it in a natural mating). This is adequate for good quality chilled semen as the sperm will be capable of swimming up through the bitch's cervix, up through the uterus (womb) and along the Fallopian tubes where they will find the eggs.

Intra-vaginal inseminations can be done by breeders themselves with minimal training and a suitable catheter. Intravaginal insemination does not require any sedation or anaesthetic.

The semen is drawn up into a sperm safe syringe (these are syringes without rubber on the plunger which can be toxic to sperm). An insemination catheter is introduced into the bitch's vagina. The vagina will travel upwards initially over the pubic bone and then down towards the cervix. There is a small blind ending clitoral fossa just inside the lower end of the vulva lips if you enter this with a catheter it is quit painful for the bitch. The urethra which goes to the bladder also enters the floor of the vagina 1-3 inches inside the vulva - it is not that difficult to enter the urethra with a narrow catheter. To avoid both of these structures the catheter should be introduced into the vagina close to the top of the vulva and directed upwards initially then arching as it passes over the pubic bone. The catheter should be introduced as far as possible. Lubricating the catheter with a sperm friendly lubricant will help this process.

The semen is injected slowly through the catheter. Preventing the bitch from sitting or squatting will help prevent the semen from running back out of the vagina. Some breeders recommend lifting the bitch's back end off the floor to help this.

MAVIC (Minitube of America Vaginal Insemination Catheter) catheters are soft but thick which makes it impossible to enter the urethra by accident. They also have an inflatable bulb near their end which is inflated inside the bitch. This anchors the catheter in place but also 'seals' the vagina around the catheter to prevent the semen flowing back out and stimulates the vaginal contractions (like the bulbus penis dose in the dog's penis) which help the semen swim up through the cervix. MAVIC catheters should be left in



• Intra-vaginal insemination

the bitch's vagina for 10 minutes or so, mimicking the 'tie' and reducing the loss of semen from the vagina before it has had time to swim up through the cervix.

Trans-cervical insemination (TCI)

During trans-cervical insemination the semen is placed in the uterus so the sperm don't have to swim up through the cervix. Used for frozen semen and for chilled semen usually if the quality isn't. There are two methods of trans-cervical insemination both of which require considerable skill and specialist equipment:

Endoscopic TCI - the cervix is visualised using a rigid endoscope, then catheterised and the semen introduced through the catheter into the uterus. Scandinavian (blind) TCI - a rigid catheter is introduced up through the vagina and cervix blindly by feel. This method was developed for use in foxes bred for fur and may be difficult in large or heavy bitches.

Endoscopic TCI allows for certainty that the semen is placed in the uterus. Blind TCI has been associated with vaginal perforation in some bitches. Neither usually requires sedation or anaesthesia. Most bitches during the fertilisable period will tolerate either procedure very well. TCI may be repeated on consecutive days during the fertile period which will increase success rates and litter sizes.

It may be very difficult to inseminate toy breeds using these methods because of the limited size. Trans-cervical insemination is considered to be a veterinary procedure and can only be carried out legally by a registered veterinary surgeon in the UK.

Cost of TCI is around £250-400

Surgical insemination

Surgical insemination involves a general anaesthetic, cutting open the bitch's abdomen and injecting the semen into the uterus directly. This is widely carried out in the United States but raises ethical issues and the Kennel Club will only register litters conceived this way in under exceptional circumstances. Veterinary surgeons carrying out such procedures without justification are liable to face disciplinary action by the Royal College of Veterinary Surgeons. The semen is placed in the uterus as in TCI

so surgical insemination offers no advantage over TCI but has many disadvantages to the bitch and also cannot be repeated to improve success rates and litter sizes.

Benefits of artificial insemination

Artificial insemination allows the use of stud dogs currently abroad (chilled and frozen semen) or that are no longer alive or fertile to continue to be used. Shipping chilled semen particularly is more economic than shipping dogs, and also means that eg the show schedule isn't interrupted.

Artificial insemination allows introduction of new genetic material into lines and can help keep genetic material in lines and breeds that would otherwise be lost. For example, if there is not currently a genetic test for a particular condition in a breed. Affected or potentially carrier dogs may have to be excluded from the breeding pool. If semen is collected and frozen from these dogs and a genetic test becomes available in the future there is potential to test and use the semen from these dogs again.

Storing frozen semen should be considered where:

- The breed in the UK is in decline.
- Old lines are in danger of dying out and need to be preserved
- New genes are required to be introduced into lines
- No genetic test available for an hereditary disease but may be developed in future which may allow carrier or affected dogs to remain in gene pool
- The gene pool in the UK is small
- A very good stud dog is available but there are limited bitches available that he can be used on or you are considering introducing new lines but you want to save the qualities you have now in case you want to go back to them in the future.
- There is likely to be a demand for his semen either in the UK or abroad in the future.

Remember: If you are considering saving frozen semen from your dog - do it while he is young.

Homoeopathic Remedies during a Bitch's Pregnancy and at Whelping

The following advice is taken from three books, HG Wolff's "HOMEOPATHIC MEDICINE FOR DOGS", George MacLeod's "THE HOMOEPATHIC TREATMENT OF DOGS" and Christopher Day's "THE HOMEOPATHIC TREATMENT OF SMALL ANIMALS." (References will be given)

During the last few weeks of pregnancy

1. From the 6th week onwards give PULSATILLA 6x once a day (this will prevent the possibility of abnormal presentation and of uterine inertia, ensuring a normal birth process. Complications or the need to perform a caesarian section are practically unknown with this treatment (WOLFF)
2. About three times weekly for the last two week, give CAULOPHYLLUM to ease the impending birth process. (DAY)
3. Two doses of ARNICA 30c should be given during the final week - will facilitate normal delivery. It should also be used after whelping to restore tone to the birth canal and help relieve any bruising. (MACLEOD)
4. To prevent eclampsia, give one dose of CALC PHOS 30c per week for the last 4 weeks of pregnancy. (MACLEOD)
5. If whelping has been difficult on previous occasions, give a dose of CAULOPHYLLUM 30 the day before the expected date of whelping is due to start. (WOLFF)

During whelping

1. If there is difficulty with a cervix which fails to dilate properly, a dose of CAULOPHYLLUM (one dose every 2- 30 minutes for 4 doses) will help matters move along. (MACLEOD)
 2. A single dose of SEPIA 30c after whelping is a good idea to help the uterus to return to normal and will help prevent straining and the tendency to prolapse. (MACLEOD)
 3. If a caesarian section has to be performed, do not forget to give ARNICA before and after surgery. (Also possibly SECALE) to aid recovery.
 4. Should the bitch show a bright red blood loss some weeks after whelping, consider SABINA
 5. For expelling a retained placenta, think of CAULOPHYLLUM and SABINA or PULSATILLA. (DAY)
 6. Where a newborn puppy is cold and collapsed looking, try CARBO VEG or the BACH FLOWER RESCUE REMEDY - note this is excellent for reviving puppies at birth.
- Originally collated by Marie Steele (Caprima Bernese)

Compiled by Marie Steele



THE KENNEL CLUB

PET INSURANCE

4 WEEKS FREE PROTECTION FOR YOUR PUPPIES...

As a responsible breeder, you strive to breed healthy, well-adjusted puppies. But those first few weeks away from you can be stressful for puppy and owner alike, especially if problems occur. Recognising this; the Kennel Club provides 4 weeks FREE insurance cover for your puppies to help give them the best start in life and complete peace-of-mind for you when they leave.

ACTIVATED BY YOU!

YOU set up cover for the puppies you sell, using the easy-to-use cover note book contained within the Litter Registration pack - you'll be safe in the knowledge that it's been done properly. Cover can be activated from 7 days in advance of the puppy being collected, however we understand that this is not always possible which is why you can now activate cover up to 3 days after collection too.

QUICK, EASY & EFFECTIVE...

- Activated by YOU - so you know puppies are protected when they are collected
- Cover from the time of sale for vet's fees and death, for injury and illness
- Quick and easy to set up online or by freephone



... LIFETIME PROTECTION FOR YOUR BREEDING STOCK

Kennel Club Pet Insurance provides affordable lifetime cover as standard, and because we recognise that breeders generally have more than one dog in the household - there's a special discounts when you insure more than one. But unlike other policies there's optional breeding risk cover too, providing a broad range of specialist cover which includes:

- Fertility treatment
- Gestation & whelping
- Treatment for fading puppies
- Vet's fees for puppies pre-sale

To find out more call our UK based Customer Service team today on 0800 369 90 95 or visit www.kcinsurance.co.uk/breeder



THE KENNEL CLUB

ASSURED BREEDER SCHEME

BREEDERS HAVE a vital role to play in ensuring the future health and welfare of pedigree dogs. The Kennel Club is working with other organisations, such as the Animal Health Trust, to provide breeders with the services and tools that they need to make complex decisions in the best possible way.

Mate Select

On such service is Mate Select. This was developed to compliment the traditional art of the dog breeder, giving them confidence that the selections that they make will be for the long term benefit of the breed as a whole.

The service enables breeders to:

Assess the impact that a proposed mating between Kennel Club registered dogs will have on the genetic diversity of their breed, based on the tool's calculation of inbreeding coefficients.

Look at the health test results of all Kennel Club registered dogs, via the Health Test Results Finder to ensure, as far as possible, the best health of the pups they produce.

It is being continually developed and will soon contain optimum contribution ratings, which will help breeders to calculate the impact of using particular dogs on future breeding, taking into account the number of puppies already produced and therefore suggesting the wisdom of using the dog to produce further litters. Visit www.kcmateselect.org.uk

Assured Breeder Scheme

The Kennel Club developed the Assured Breeder Scheme to celebrate and protect responsible breeders. All breeders on this scheme follow agreed standards for breeding their dogs, including using the relevant health tests and DNA tests are continually being developed by the Kennel Club and the Animal Health Trust, relevant to their breed.

We urge responsible breeders to stand together, as a recognisable group to which puppy buyers can turn, with the confidence that they have pledged to do the right things. In so doing, we help puppy buyers to more easily identify and avoid those breeders who are committing themselves to lower standards.

Breeders should remember that the Kennel Club will not register litters if:

- a) The bitch has already whelped six litters (will reduce to four in 2012)
- b) The bitch was under a year old at the date of mating
- c) The bitch has already reached the age of eight years at the date of whelping.
- d) The offspring are the result of any mating between father and daughter, mother and son or brother and sister, save in exceptional circumstances or for scientifically proven welfare reasons.

LKA / CHRISTMAS GIFT FEATURE
3rd Dec Issue - Call Anne or John now
on 0844 504 9006 for more information!