

PRACTICAL TIPS FOR DEER VETS

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INTRODUCTION

The following is a collection of practical tips useful to deer practitioners. There are a myriad of helpful hints and useful techniques that are of value to the vet in the field.

It seemed logical to me that it would be an advantage to new graduates and vets new to deer practice, to be exposed to the hands-on experience gained by vets who have been working with deer for some time. This would enable them to avoid the use of time consuming outdated techniques or alternatively those which create unnecessary danger to the vet and handlers concerned.

The following practical tips are a combination of my own, and those I have been able to glean from fellow practitioners throughout New Zealand.

DEER HANDLING

It is well to be aware of the behavioural characteristics peculiar to deer. Signs of aggression include - bristling of the hairs on the rump, grinding of teeth and exposing the tongue out of the side of the mouth, and a frontal stance with direct eye contact. When a deer gets aggressive it can kick out neatly with any of its four feet (watch out for those front feet especially), head-butt or bite you - sometimes faster than the time it takes you to blink.

The techniques of raising a hand high in the air, covering the animals eyes or using the groin pinch, can help to settle nervous or aggressive deer, and use of a hard hat will provide you with protection. A groin pinch is when you have hold of a deer's neck and head with one arm and with your other arm reach over and down to the deer's flank just in front of the hind leg and grab a handful of skin. This sometimes has quite an immobilising effect on the deer.

In the case of Wapiti type animals, although sometimes very reluctant to be approached, once restrained, will often stand quite well. Remember though, the greater the force used to restrain - the greater the reaction from the deer.

Equipment

There are a number of simple devices one can construct which aid in the handling of deer.

One of these is a paddle - a four or five foot length of alkathene with a side of a drench container screwed on to it. Raising this above the animals can act as quite a deterrent and is useful for drafting deer.

Another is the plywood shield - this can be used to push animals to the end of a pen or simply to protect you from advancing animals

The use of a sock or hat with the end cut out and placed over a deer's head and eyes, can be very effective - sometimes it is almost a case of what they can't see, can't hurt them.

When sedating deer there are a number of pieces of useful equipment.

Pole syringes - easily constructed with a length of fibreglass pole and a syringe. It is possible to obtain nylon syringes that fit perfectly over the end of the pole or you can cut a cross in the top of the pole, insert a sawn off syringe plunger into it then slip the barrel over the top. Luer lock syringes are good as they are stronger and less likely to snap, or alternatively you can place some plastic tubing over a syringe top and pour resin glue around the base of the nozzle. When set, this acts to strengthen the nozzle. It is advisable to use a wide bore (16 or 18 gauge) 1" needle in order to inject the drug as quickly as possible. I have found injecting in front of the shoulder or the back of the neck preferable to the rump - as frequently deer kick out with rump injections and can bend or dislodge the needle and the full dose of sedative is not administered. Also the drug takes longer to be absorbed when injected into the rump due to the larger fat depot. It is helpful to inject at right angles to the site to minimize risk of leakage if the animal moves.

Westerguns - springloaded guns have the advantage of being very quick injecting. However some would say have the disadvantage of being cumbersome and noisy

The use of hand syringes for quieter deer is another option. One can either hold the syringe with the index finger stretched out along the length of the syringe and the ball of the hand ready to press the plunger, or alternatively, with the thumb over the plunger and the fingers grasped around the syringe, both allowing a single action rapid needle insertion and injection

### Facilities

It is important to be aware of what constitutes a good or a bad set of yards. It is not uncommon for farmers to seek advice on yard design from their vet. This can give you an ideal opportunity to ensure your client builds well designed

workable yards that maximise efficiency and keep stress on deer to a minimum, with the obvious advantage of making your job easier. Some pointers on yards include the following.

Avoid pens with blind corners, i.e pens with just one door. It is important to be able to approach a deer from more than one direction. Also it gives them the option of retreat rather than feeling boxed in and pressured to attack.

Doors that have slides in them need to have them positioned at the right height. Too low and you are liable to get kicked and too high and you are at risk reaching down to operate. When you put your hands through those slides you want to be able to pull them back fast if need be.

The same applies to half-doors where you can swing the top half back and perhaps T.B test over the top. If the bottom door is too low you will have the animal jumping over to greet you.

Avoid pens that are too large. You don't gain anything from having deer charge around only to gain enough speed to jump over the side of the pen. No larger than 2.4 x 1.8m for 5 - 6 mixed age hybrids.

Races can be very useful for carrying out T.B. testing and drenching of the larger Wapiti type animals that are not safe to deal with in a pen.

Once again get the measurements right - too wide a race and the deer will be turning around on you, 650mm is about optimum width. For Red deer a height of 1.0m for the near side and 2.4m for the wall enables the operator to carry out clipping, injection of deer etc. For the larger deer if the height of the near side is up to their chins and a bench is installed along the outside of the race, this system will enable the operator to carry out the procedure while the person stands on the bench. This gives you a system whereby the operator is not leaning down over the side wall and at the same time the walls are high enough not to be easily scaled by the deer.

When handling mobs of different sized animals it is helpful to make the top two boards of the near side of the race removable to provide versatility. A curtain hanging from above and covering the free side of the race makes it easier to run deer in. This can then be pulled across when you are ready to handle the deer.

Boardwalks above pens can be very handy when manoeuvring the larger more aggressive animals.

It is important though to avoid gaps between the pen wall and the walk. Animals can jump up, get their legs caught and broken. The same applies to any gaps - those between gateways

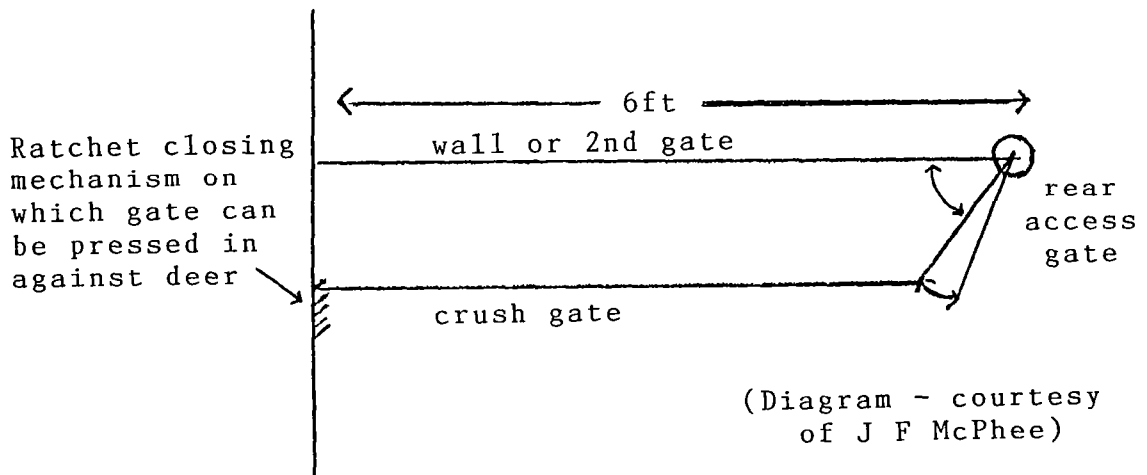
and walls need to be boarded up and large gaps under doors should be avoided - these can also be a trap.

If walls are slatted from chest height up deer can see you coming, know what is in the next pen and are less likely to get stirred up and make a mad rush for the other side of the pen when you enter. Make sure the slats aren't big enough to wedge a deer's foot in though.

Octagonal pens work well. Deer can be manoeuvred around and there is the option of putting them into a number of pens from the one central pen.

Circular crushes (i.e. a revolving door in the centre of a pen) are useful for squeezing animals up and give versatility as to the pen size depending on where you latch the door. If the pen is circular there needs to be a door within the revolving door.

One of my colleagues, with the aid of an engineer, has designed and built a gate which aims to be a simple cheap device that the smaller deer farmer can justify to enable him to handle the odd stropky stag or pet hind that simply can't be held adequately for T.D. testing etc. It is basically a gate with a kink in it as per diagram



It is a modification of the Invermay wapiti crush with advantages of holding the animal more firmly and is side loading so easier to load. There is no any likelihood of being kicked. The key to it's value is the ratchet device for closing it. Deer are squashed up tight for pregnancy testing or the gate is simply used as a barrier over which the odd difficult animal can be drenched.

### Crushes

There are many different crushes available. However no matter how good they are, they are useless unless deer will run into them quietly and easily. If the crush is approached from around a corner this is achieved in most cases. A forcing gate or a 6ft 18 stone All Black can also be an advantage.

Basically there are.

- the drop floor crushes, either mechanical or air compressed
- pipe crushes
- hydraulic crushes with moving sides

### VELVETING

When velveting a large number of stags I find it useful to administer local anaesthetic with a vaxigun connected to a 100ml bottle of local hanging around my neck. Or alternatively using a lipiodol gun. One can use a ring block, regional block or a combination of both to desensitise the antler.

In N.Z. tourniquets most frequently used are rubber innertube and rubber bands.

To facilitate the removal of tourniquets the farmer can tie a length of twine to the tourniquet and when pulled vigorously will either break it or pull it off. Alternatively a long pole with a hook on the end can be used to flick the tourniquet off.

When reversing Xylazine with Yohimbine it is important to be aware that accidental intracarotid injection when intending to strike the jugular vein can cause a rather violent adverse reaction in the form of a fit of five to ten minutes duration. If you want to avoid this possibility you can use the cephalic vein or an ear vein in a recumbant stag quite readily.

The manner in which the velvet is cut can affect the quality of the velvet. To obtain maximum blood retention the antler to be cut can be positioned downward and very heavy sedation should be avoided.

To ensure adequate analgesia of an antler it is advisable to cut from the lateral aspect towards the medial aspect as the richest supply of nerves are on the lateral side. If they have not been fully desensitised and the velvet is cut from the medial to lateral direction often when the lateral portion is reached the stag will jerk its head away in pain. Apart from the pain inflicted upon the stag the velvet can often be torn and damaged if this occurs.

In the event of a stag fracturing a pedicle there is a simple means of splinting these which has a good repair rate. It is by means of two sticks, one positioned in front of the pedicles and the other behind. These are secured in place with a bandage or tape tied in a figure of eight. Alternatively the pedicle can be nailed back into position using steinmen pins. (However don't nail into brain!)

#### T. B. TESTING

There are numerous clippers available for T.B. testing. It is important to use a set that ensures a uniform close cut in order to enable accurate reading of the T.B. test.

It is possible to arrange the clippers so they are on a pulley system and can be swung up out of the way while refilling the pen. Don't try and have too many deer in a pen at once. You will just end up with them climbing all over you and each other. Four to six is about optimum. Give the other deer just enough room to get out of your way.

A carpenter's pouch is handy to put tuberculin gun, new blades, oil etc in when you are not using them. As mentioned earlier, a race system can be very useful for T.B. testing thus avoiding the need to be amongst the more fractious deer and the risk of injury.

#### DRUG REGIMES

When it comes to sedating deer, particularly aggressive stags, the smaller the volume of drug you need to administer the better. This allows for faster injection and less likelihood of the animal moving and leakage occurring.

There are a number of drugs and drug combinations used to sedate deer. However the drugs most commonly used are Xylazine or a mixture of Xylazine and Fentaz (Fentanyl citrate/azoperone) (see table 1). The latter gives a more consistent result with animals less likely to suddenly jump to their feet just when you think they are adequately sedated. The use of Xylazine alone can sometimes give a variable response between individual deer. Whatever drug you use you must allow for differences in bodyweight remembering that stags can lose up to 25% of their bodyweight during the rut, and temperament also influenced by the rut.

The same number of mg of Xylazine in a more concentrated solution appears to elicit a more rapid and stronger response, and this must be borne in mind.

Always approach sedated deer smoothly and quietly. Sudden movements and loud noises or even just talking can sometimes arouse them from their sedation. This is particularly the case

with deer sedated with Xylazine alone. Remember it is important to always carry a first aid kit in case of accidental injection of sedative drugs into humans. Make sure clients know where it is and how to use it

Table 1: DRUG DOSE RECOMMENDATIONS

DRUG	Red Deer		Wapiti		Elk
	Hind	90-110kg Stag 180-220kg	Hind	140-180kg Stag 270-350kg	Hind 170-230kg Stag 350-460kg
Xylazine 10%	1.0 - 1.8ml		2.0 - 2.5ml		2.5 - 3.0ml
2mls Fentaz in 50ml 5% Xylazine	1.5 - 2.0ml		2.0 - 3.0ml		3.0 - 3.5ml

N.B. These dose rates are general recommendations only, do not apply in all cases and should be used with caution. It is difficult to arrive at an absolute recommendation because effective dose rates can vary depending on the individual temperament of the deer, the time of year, (stags approaching the roar require up to 50% higher doses than rutting and post rut stags), and also the stress level of a deer at any particular time.

It can sometimes be difficult to estimate the bodyweight of Elk, the tendency can be to overestimate, running the risk of overdosing. Also note their tolerance of Fentaz is slightly less than that of other breeds.

Fallow deer have a particularly high tolerance to Xylazine compared to other breeds. A combination of Xylazine and Ketamine (5mg/kg Ketamine and 2.5mg/kg Xylazine) given I/V gives very good sedation and relaxation.

The Pere David breed has a lower tolerance for Xylazine than other breeds

It is worth noting that the ease of handling of a particular deer herd can often reflect the temperament and handling skills of the farmer who manages them. This often accounts for between farm differences in deer temperament and hence drug dose susceptibility.

#### REPRODUCTION

Dystocias - when to advise the farmer to call you in. Hinds can take anywhere between 20 minutes and 3-4 hours from the appearance of the amniotic sac to give birth. It is preferable to avoid unnecessary yarding in order not to upset

the birthing process or jeopardise the mothering on of the fawn

If a hind has one leg or just a head of a fawn protruding and is not making progress then obviously something is wrong. Conversely if two legs are showing and it is possible to see they are hindlegs then the hind could be left for 2-3 hours and be observed on the hour for progress.

If the hind has required assistance to calve she can be left in the pen with the fawn to settle down. There is always a risk of her attacking the fawn, and one needs to be aware of this. This outcome can be minimised by offering the hind the afterbirth and if sedative was used giving her the antidote intramuscularly rather than intravenously to slow her recovery and give the fawn time to gain strength and possibly suckle. Generally a fawn that has been accepted by a hind will be quiet and content and not be crying out.

For hinds that refuse to accept their fawn it is important to have a supply of colostrum on hand. This can be milked out of a hind while she is sedated. Cut the end off a 50ml syringe (ie the needle holder and last 2 ml of syringe), insert the plunger into the syringe barrel through the cut end, and then placing the flat smooth end of the syringe over the teat, suck out the colostrum after I.V. or I.M. injection of 10I.U. oxytocin.

When performing embryotomies on fawns in small hinds in which a standard embryotome is too large it is possible to improvise using alkathene pipe. Run the wire through a piece of the pipe instead of through an embryotome. The wire will cut the end of the alkathene slightly but the pipe will still protect the hind and will enable removal of the offending appendage.

It is worth noting that in N.Z. a large percentage of dystocias in deer occur in overfat unfit hinds. This is a major management problem as calving occurs after the spring flush pasture. To minimise the possibility of dystocias of this form, hinds need to be grazed at a level that avoids overfatness and either put on hill blocks or even chased around daily while on the flat in order to maximise fitness.

Just a mention here of the low mount characteristic of a stag's premating behaviour. It is not uncommon for farmers to ring a vet informing him his stag is not doing the job! This is because the farmer has observed a stag exhibiting low mounts during which intromission does not occur.

During a low mount the stag's back is arched in a slumped appearance with the neck extended forward. This is distinct from a high mount or almost vertical thrust at ejaculation during which the stag's nose is pointed skyward. Low mounts are considered to be normal precopulatory behaviour and may continue for two hours or more before the stag elicits an intromitting high mount.



### CIDR Applicators

These can be constructed simply and cheaply using plastic tubing. A 300mm length of 20mm diameter tubing with an inner pusher made out of a 500mm length of smaller diameter tubing can be used to insert CIDRS quite effectively. It is a good idea to round the edges off on the inserting end of the outer tubing.

Alternatively it is possible to modify a bovine CIDR applicator by bevelling the end to 45degrees and shortening the length. These will hold two goat CIDRS side by side for the larger Wapiti type hinds.

### A I Cradles

Numerous types of these have been designed. The key factors to a successful model would be low loading, large wheel size for ease of moving, and attachments that enable quick tie down and release of deer.

The use of an electric elevator greatly reduces the labour and physical effort required. By using three cradles a fast and efficient system can be put in place, with one deer being loaded, one deer being inseminated and a third deer being off loaded.

For operators doing a smaller number of deer at a time a hook on a wall and manpower is an alternative means of lifting the cradles.

### FALLOW DEER

Fallow deer are a breed unto their own when it comes to handling. Bad handling techniques and poor facilities can add up to deer with broken limbs and backs. Not to mention rather shaken vets.

It is essential that fallow yards have a bail or crush suitable for restraining fallow deer. A simply constructed rectangular steel box with a split opening gate in which there is a hole large enough for a fallow deer's head to pass through is adequate. The holding pen and race need to be dark for ease of manoeuvring of deer into the bail which is open to the light.

It is possible to install a sheet of fibrelite insert hinged at the bottom on one side of the bail, which can be used to exert lateral pressure once a deer is restrained.

This prevents the animal from squatting down and is a useful modification helpful when pregnancy testing.

