

**THIS ARTICLE WAS PUBLISHED IN THE JOURNAL “VETERINARY PRACTICE.”**

## **GOAT HEALTH PLANNING AND PHARMACEUTICAL AVAILABILITY.**

**David Harwood BVetMed, MRCVS, Independent Veterinary Surgeon.  
Honorary Veterinary Surgeon to British Goat Society  
Chairman of the Goat Veterinary Society.**

Although the principal of “health planning” is widely adopted within the farm animal sector and also adopted by farm assurance schemes, it is not so widely used in the UK goat sector. This is in part due to the relatively small number of goats kept in the UK (around 98,000), and the wide variety of reasons that we keep them. At one end of the scale we have commercial dairy herds with the largest herds numbering in excess of 4500, whereas goats also make excellent pets and can be kept in groups of only two or three. In addition some goats are kept on specialised meat rearing units (Boer and Boer cross), others such as Angora and Cashmere goats are kept for fibre production, and many hobby goat keepers rear their pedigree goats for showing.

One of the fundamental principles of health planning has always been the rider that each and every plan must be farm specific, (although employing generic species specific factors), and this is perhaps even more valid with our goats for the reasons outlined above, there is certainly no “one fit quick fix plan!”

For many goat owners, the concept may be one that they have already embraced and this is particularly relevant to the commercial sector providing farm assured milk to supermarkets. To many however particularly within the hobby sector it may be less familiar.

### **THE GOAT HEALTH PLAN**

Such a plan should encompass more than just “health” – but should also give some basic information on management and nutrition both of which underpin the health programme itself. A good starting point is to consider each of the Animal Welfare Act 2006 “welfare needs of kept animals” in turn, and include examples relevant to the goat itself. Subsuming these needs into any goat health plan also ensures that every owner is at least conversant with the legislation to which they should all be signed up to!

#### **Animal welfare act (2006)**

Makes owners and keepers legally responsible for ensuring that the welfare needs of kept animals are met, to the extent required by good practice.

These include the need:

- For a suitable environment.
- For a suitable diet.
- To exhibit normal behaviour patterns.
- To be housed with, or apart from, other animals (if applicable).
- To be protected from pain, injury, suffering and disease.

If we now consider examples for each of these in turn with reference to our health plan:

## **1. For a suitable environment.**

All goats should have access to shelter at all times, they do not like getting wet! Buildings must be

- **Well ventilated (not too cold / draughty).**
- **Plenty of natural light – artificial light to enable goat inspection at all times.**
- **Space to move around (minimum 1.75 sq m floor space / goat).**
- **Good access to food and water.**
- **A dry bed to lie down on.**

Buildings must also be “goat proof” – they are naturally inquisitive and will investigate anything with their mouth – so electricity cables / light switches should be out of reach – remember they can reach up to 2 metres above the floor on their hind legs. They can also learn how to open gate catches!

When outside – ensure the fencing is goat proof, their natural browsing instinct can get them caught up in badly maintained fences or hedges. Ensure they do not have access to poisonous plants or shrubs – rhododendron seems to be particularly attractive, yet is potentially lethal.

Tethering of any type is to be discouraged at all times.

## **2. For a suitable diet.**

Goats are browsing not grazing animals, and every effort should be taken to ensure that any diet fed should fulfil this need. For forage intake, hobby goat keepers will often cut “browsings” consisting of hedgerow, shrub and tree clippings brought into the goats when they are housed. Goats in the commercial sector tend to be fed on a maize and grass silage based total mixed ration (TMR) the constituents of which do allow a degree of browsing as goats feed.

When provided with a supplementary feed, it is important to ensure that all goats can feed together if provided with a course mix, otherwise those feeding first will select the “best bits,” with the more timid and late feeding goats having the “leftovers.” If this is not possible, feeding pellets will over-ride this behaviour, and ensure all goats receive their full requirements.

Dietary intake should be sufficient to provide maintenance for all goats, plus the demands of e.g. lactation or pregnancy. Ensure goats do not get too fat (avoid titbits) or too thin.

## **3. To exhibit normal behaviour patterns.**

Goats are gregarious friendly animals, and thrive in any environment in which they can express their normal behaviour including climbing, hiding (and escaping!!). A simple straw bale, an old picnic table or chair placed in a field can provide hours of fun! Plastic barrels are increasingly being seen on commercial units on which goats can lie in or on, and roll around.

#### **4. To be housed with, or apart from, other animals (if applicable).**

As companion animals goats can live well into old age – and geriatric goats can present a particular problem, care should be taken to house them away from younger more boisterous goats. Heavily pregnant females, lame goats or goats with large pendulous udders should be treated similarly – but always house with companions never alone.

#### **5. To be protected from pain, injury, suffering and disease.**

Although last on our list, it is under this heading that most of our health plan input would be placed.

### **BIOSECURITY**

Every plan should include information describing the principles of biosecurity, and some examples of how these could apply to the unit itself.

- Added animals – where possible these should be sourced from units of a known health status, and ideally kept in “quarantine” facilities for a minimum of two weeks. They should be examined regularly for any visible evidence of infectious disease (e.g. sarcoptic and chorioptic mange, footrot, CLA) that could spread to other goats, examination by a veterinary surgeon at some stage during quarantine should be encouraged.

A simple blood test for CAE is advisable during quarantine. If in a known TB area or purchasing goats from such an area, then consideration should be given to both pre and post movement testing using the comparative skin test. A leaflet on TB in goats is available for download on the Goat Veterinary Society website.

A combination quarantine wormer dose is advisable, bearing in mind that no wormer has a marketing authorisation for use in goats, and that dose rates of any products used (under cascade) should be increased accordingly. This will reduce the likelihood of “buying in” resistant nematodes.

If the clostridial vaccination status is not known, then a primary dose of a 4 in 1 vaccine (Lambivac) should be given, followed by a second dose 4 – 6 weeks later and then eventual inclusion in the herd vaccination programme.

- In smaller herds (particularly pedigree herds) there is the added problem of goats visiting often a series of shows during the show season. Those shows covered by the British Goat Society (BGS) insist that goats are tested regularly for CAE, so this is of minor concern. Given the insidious nature of this disease however, owners should be cautious of attending shows where testing is not a pre-requisite.

It is generally not necessary to lay down strict rules regarding show animals, but a reminder of the potential risks should be entered into the plan.

- Many smaller herds that do not have the full farm equipment at their disposal, will borrow items from each other, these may include weigh / handling crates, hurdles,

trailers and even drenching guns. The potential risks from such items should be emphasised.

## **ROUTINE HEALTH CONTROL MEASURES**

### **Neonatal kid care:**

The secret of successful neonatal kid care is “attention to detail.”

- Kids should be born into a clean and dry environment, the navel should be dipped / sprayed with a suitable astringent.
- Colostrum (preferably from the kids own dam) should be consumed within the first 6 hours (50 – 75 ml / Kg), with at least two more feeds in the first 24 hours. It is important to know the CAE and Johne’s disease status as both can be passed to the kid via contaminated (particularly pooled) colostrum, and other specific measures should be put in place.
- Disbudding if deemed necessary must be undertaken by a veterinary surgeon, and usually within the first 7 days.
- Successful and ongoing kid rearing is dependent on a consistent feeding regime, with strict attention to hygiene.

### **Vaccination protocols**

- All goats should receive Clostridial vaccination, and have a clear protocol in place. The vaccine of choice is Lambivac (MSD Animal Health) although it does not have a marketing authorisation for use in goats. The primary course is as indicated in the data sheet, but boosters should be given at least every 6 months. In pregnant does a booster dose should be given 4 weeks prior to kidding to boost colostral immunity.
- Johne’s disease vaccination has an important part to play in units attempting to control the problem, the Gudair vaccine (Virbac) has a product licence for use in goats.
- Pasteurella vaccines may be used strategically on goat units with a known problem (usually in kid rearing phase), and any available pasteurella vaccine available for sheep in the UK can be used following manufacturers recommendations (although again with no product license for goats in the UK). Avoid using combined clostridial and pasteurella vaccines, use them as separate vaccines at separate times.

Other vaccines should only be used if there is a known problem such as e.g. Orf or Q Fever.

Suitable advice should be included to ensure vaccines are stored and used correctly.

### **Worming protocols.**

Goats appear unable to mount the age dependent resistance to nematode parasites that we recognise in sheep and cattle. This means that in any control programme, adult goats of all ages that may have been exposed to contaminated pasture must be included. As a result, it also follows that pasture (and this is often limited in area for hobby keepers) can quickly become heavily contaminated with nematode eggs – and effectively “worm sick.” Within the commercial sector – this susceptibility to nematodes at all ages, is almost the sole reason why the majority of herds are housed throughout their lives - milk production on contaminated pasture being unsustainable.

It is important to ensure that goats are only wormed when it is necessary, and regular faecal egg count monitoring is to be encouraged. Bear in mind also that there are a number of shared nematode parasites with sheep and cattle, so any health plan must take shared grazing patterns into consideration.

Goats are considered as a minor species – and as such, there are no anthelmintics with a marketing authorisation for use in goats. Any treatment or control protocol must use existing products under “cascade” principles with designated milk and meat withhold times of 7 days minimum and 28 days minimum respectively.

We have undoubtedly been underdosing goats with anthelmintics, and this, coupled with the need to worm more regularly has undoubtedly had an influence on anthelmintic resistance patterns within the goat sector. Table 1 below gives the current recommended anthelmintic dose rates compared alongside those for sheep.

**Table 1**

	<b>CURRENT SHEEP DOSE RATES</b>	<b>RECOMMENDED GOAT DOSE RATES</b>
<b>BENZIMIDAZOLE</b>	<b>5 mg/Kg</b>	<b>10 mg/Kg</b>
<b>LEVAMISOLE</b>	<b>7.5 mg/Kg</b>	<b>12 mg/Kg</b>
<b>IVERMECTIN</b>	<b>0.2 mg/Kg</b>	<b>0.3 – 0.4 mg/Kg</b>
<b>DORAMECTIN</b>	<b>0.2 mg/Kg</b>	<b>0.2 – 0.4 mg/Kg</b>
<b>MOXIDECTIN</b>	<b>0.2 mg/Kg</b>	<b>0.2 – 0.4 mg/Kg</b>

(Adapted from Bartley 2009).

### **Foot care**

As with sheep, regular footcare is necessary in goats, to ensure that claw overgrowth does not occur. The frequency of examination will be dependent on the environment in which they are kept. Foot lameness should be dealt with promptly, lesions seen predominantly mirroring those seen in sheep.

### **Goat abortion**

As with sheep, many of the causes of abortion in goats are infectious including Enzootic abortion, Campylobacter and Q Fever. Any goat that aborts should be isolated, and the products of abortion removed together with any contaminated bedding. Consideration

should be given to submitting material for laboratory examination, ensuring where possible that placenta is included.

### **Geriatric goats**

In the pet and hobby sector, it is not unusual for goats to be kept well into their teens, and it is inadvisable to allow females over 10 years of age to breed. Care should also be taken to ensure that dental abnormalities do not occur as a result of molar tooth loss and compensatory overgrowth. They also become increasingly susceptible to chronic aseptic laminitis when the foot becomes hard and “box shaped,” and also to age related osteoarthritis – both of which can be controlled initially by the suitable use of NSAIDs and analgesics (under cascade).

### **Legislation**

Despite the many reasons we keep goats in the UK, they are all classified as farm animals, and as such should:

- Be kept on a registered holding, with a valid holding number.
- Carry suitable and visible ear tag identification.
- Have all movements off and onto the unit entered into a suitable movement book.
- Have all pharmaceutical products administered recorded in a suitable medicines book

### **GOAT MEDICINE AVAILABILITY**

As already stated throughout this article there are few products with a marketing authorisation for use in goats in the UK, and on many occasions, products will be used under cascade prescribing principles (VMD 2013).

### **REFERENCES:**

*Anthelmintic resistance in sheep and goats*, D J Bartley, (2009), Goat Veterinary Society Journal, Vol 25, p 71.

Veterinary Medicines Guidance Note Number 13 (July 2013), “*Guidance on the use of Cascade.*”

**DAVID HARWOOD:**

**GVS CHAIRMAN AND HONORARY VET TO BRITISH GOAT SOCIETY.**