

## **A Brief Guide to Tick Suppression and Louping Ill Eradication in the Forest of Bowland**



# **FOREST OF BOWLAND**

Area of Outstanding Natural Beauty

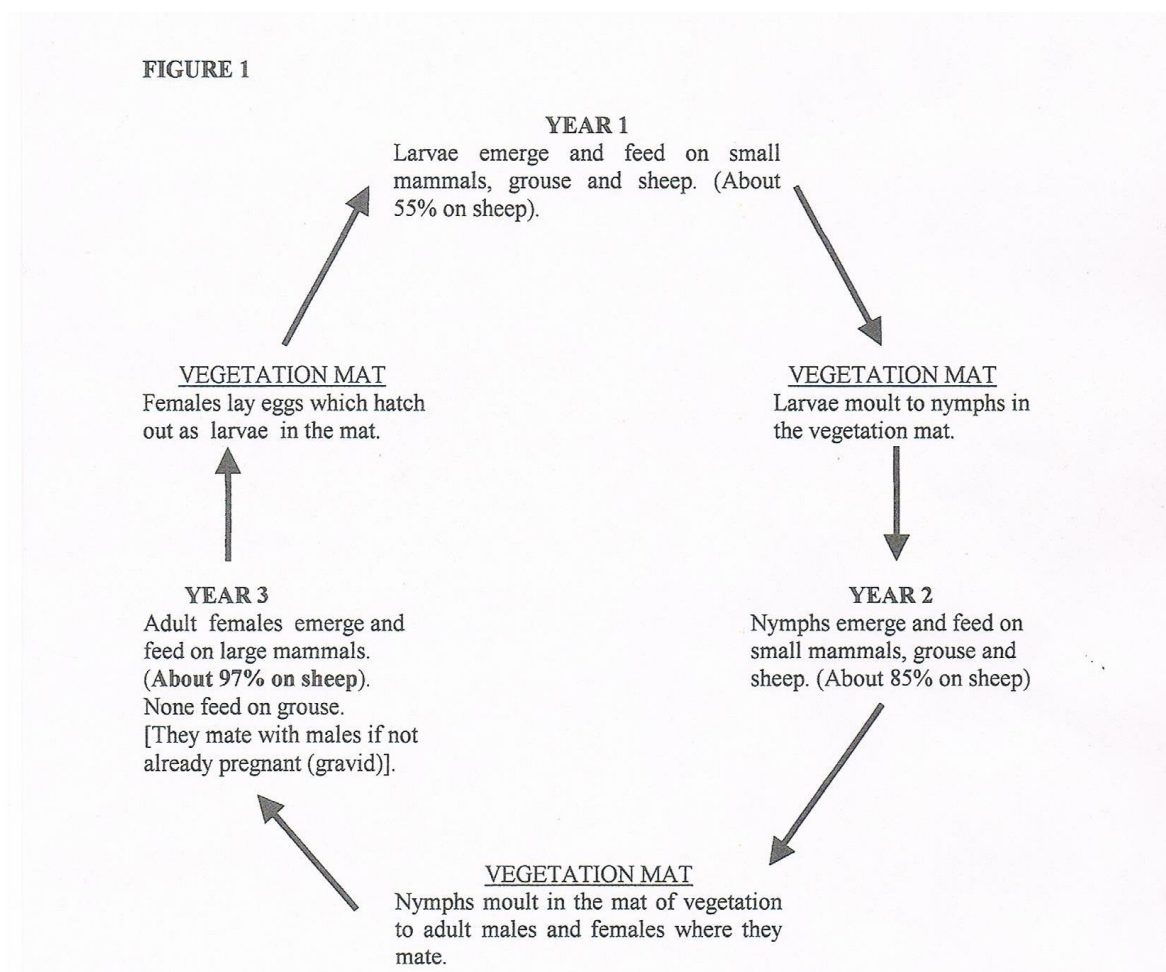
## Introduction

The following report has been provided as an update to the original report produced by Mr G K Mathewson in June 2000 and updated in November 2007. Following the development of the Bowland Land Managers Forum during 2012, a request was made to review the existing guidance. This review has been undertaken in 2013 by John Wellbank of Rural Futures (North West) Ltd with additional technical advice provided by Rob Foster of Grosvenor Estates, Abbeystead and Jim McKinstry of Farmgate Vets, Lancaster.

## TICK SUPPRESSION

Knowledge of the basic features of the three-year tick life cycle as it occurs in the Bowland Forest is essential if ticks are to be effectively suppressed. This is shown in simplified form in figure 1.

Figure 1



The most important fact about the life cycle, in terms of tick suppression, is that **approximately 97% of female ticks feed on sheep**. Therefore if dips or pourons are applied to the sheep throughout the seasons, it should be possible to kill a high proportion of the tick population and break through the life cycle. However this must be done when the ticks are searching for a blood meal, which mainly happens during two distinct periods known as the tick rises. Depending on the year the main tick rise period are in April and early September.

## In Spring

### Pourons:

**Hoggs** must be treated before being turned to the fell. If necessary an injection against scab should also be given, when the hoggs return from away wintering.

**Ewes and lambs:** On farms where there is little in-bye land or where the in-bye is heavily infested with ticks treatment should be applied to the ewes and lambs shortly after lambing, but not before the lambs are at least one week old. Do not treat very young lambs if the weather is unseasonably hot.

If the in-bye is virtually free of ticks and the ewes and lambs are not turned to the fell till the start of May, treatment should be delayed till then. This will give a longer period of cover, as the effectiveness of the pouron tends to decline after 6 to 8 weeks.

### Dips:

These are likely to be effective for longer periods than pourons, but tend to cause more stress, use more labour and to result in mothering up problems. An alternative is to dip the ewes shortly before lambing and a pouron should then be used for the lambs, just before they are turned to the fell.

**Hoggs** must be treated before being turned to the fell.

Lower tick numbers will reduce lamb losses, and also grouse losses, particularly of chicks if louping ill is present on the moor.



## At Clipping Time in Late June or Early July

Although the larger ticks, adults and nymphs, have declined from their peak by this time and thereby may give the impression that the spring tick rise is coming to an end, nonetheless this is the time when the main larval peak is likely to commence. As the larvae are so small they may not be as readily noticed, but pouron application is now, again vital. **The reason for the importance of this application is that it is at this**



**point in time that the “virus cycle” commences.** The virus is not passed from the female to her eggs and so the larvae when they first emerge from the vegetation mat will be virus free. By killing as many as possible at the stage it will prevent them from picking up the virus from the sheep and so passing it on as nymphs in the following year. Moreover as only nymphs infect grouse, this means that the amount of infection reaching the grouse will be severely reduced.

## At Weaning in Late August

This treatment is not applied on some farms in order to reduce costs and because by this time the lambs are stronger and are likely to have acquired some natural resistance to ticks and the diseases that they carry. It is however a most important application in the long term for three reasons:

1. Without it the autumn tick population can build up and then a part of it transfers into the spring
2. It is vital on farms that have louping ill problems as by mid August the colostral louping ill antibodies of the lambs will have nearly disappeared and thus they will be susceptible
3. The louping ill virus can still kill mature grouse.

Dips are less likely to be effective than pourons after clipping because of the short length of the fleece and because sheep are often not immersed for the full recommended period. Pourons spread in the oily surface layer of the skin (sebum) and are not therefore dependent on fleece length. They are thus the preferred option at this season.

## Winter

In mild winters it is now common practice among some estates to undertake an additional dip treatment at scanning time to ensure sufficient chemical build up in the fleece.

## Cattle

On farms with heavy infestations of ticks on the in-bye, products such as Coopers Spot-On should be applied to all cattle before the spring and autumn tick rises in order to reduce overall tick numbers.

**Always follow the manufacturers’ instructions carefully when using dips or pourons.**

**When using dips all the statutory regulations should be strictly adhered to.**

## LOUPING ILL ERADICATION

Again a basic knowledge of the disease is vital if eradication procedures are to be 100% effective. Louping ill, which can cause losses among sheep and grouse, can also kill cattle that have no natural immunity and have not been vaccinated. It is caused by a virus that is carried by the ticks. Fortunately it is not a highly contagious disease like foot and mouth, which is spread directly from animal to animal; indeed it is a relatively “inefficient” one in terms of its spread. Only about one in every thousand ticks carry the virus and, at least on the Bowland Fells only sheep and grouse are definitely known to be able to transmit the virus from one tick to another. Thus a calf could die of louping ill but still not pass the disease on to uninfected ticks during its illness.



Results from over 4,000 blood tests of sheep in the Forest of Bowland confirm the fact that it is difficult for the virus to move from one farm to another. Thus neighbouring farms can have very high and low levels of infection. However movement can occasionally happen. On common land there is of course no barrier to the spread of infection, but even here there are sometimes marked differences between hefts.

Tests have also shown that where an efficient tick suppression programme has been carried out over a long number of years, the disease is generally at a low level and may have been eradicated. In order to achieve total eradication one of two regimes is recommended depending on the current level of the disease on any given farm. These two are:

### Regime 1. Flocks with 3% to 9% antibodies to LI. – Treatment of sheep.

The implementation of a full tick suppression programme as describe above, plus a single vaccination of all sheep in the first year. Lambs should not be vaccinated till clipping time at the earliest.

### Regime 2. Flocks with 10% or more antibodies to LI. – Treatment of sheep

Previous recommendations advised a double dose of vaccination of all sheep in the first year, with a minimum of one month between injections. As antibody samples are generally decreasing it is suggested that this double dose is no longer necessary. Providing hogs are vaccinated before they go away for wintering followed by a second dose before they lamb this should be sufficient as the vaccine lasts for up to 18 months.

## Vaccination of replacements

On farms where the incidence of infection is less than 10% replacement lambs should be vaccinated either in August or September at least two weeks after weaning. Or where lambs will not be exposed to ticks after weaning, vaccination may be given in the winter/spring prior to return to the fell.

The vaccination procedures for the followers should continue on a permanent basis until such time as the disease is totally eradicated.

**Tups:** All tups that are going onto the fell must be vaccinated at least 3 weeks prior to exposure to ticks. Tups that have never been exposed to ticks will be infertile for at least 6 weeks after their first exposure.

There should be a retest of shearlings every three years in order to assess progress. The impact on the grouse population is unlikely to be noticeable for two to three years.

**Louping ill vaccine should only be obtained through the farmers' own veterinary surgeon and any instructions about its use, with particular reference to the concurrent use of other products must be strictly implemented. It is recommended that Louping Ill vaccine is only used in**

**isolation and that no other vaccines should be administered at the same time as this would create too much stress on the animal.**

Where a new operator takes over a farm and introduces a new flock special care needs to be taken as there will be little if any natural immunity. Specialist veterinary advice should be sought. Without this there is a very real danger of crippling losses.

Ideally arrangements should be put in place to count tick numbers throughout the season on an annual basis.

If the above programme is conscientiously adhered to for all the sheep then louping with all its losses to lambs, hogs and grouse could be eradicated. Thereafter no further vaccinations should be necessary, but the tick suppression programme would have to be vigorously maintained. This would minimise any chances of LI being reintroduced and protect the lambs from other tick borne diseases, which always remain as a potential source of loss.

## **Purchasing of Pourons, Dips and Vaccine**

The treatment of ticks is a costly and time consuming process. However, there will be significant long term returns if lamb and grouse mortality can be reduced. As with most livestock treatments, economies of scale can be gained through bulk purchasing of materials.

A number of the Bowland estates have organised the bulk purchase of treatments on behalf of farms in the area for a number of years. This has significantly reduced costs. As tick eradication is a long term objective of most of the shooting estates they have indicated that they would welcome other farms into their bulk buying agreements. Red Rose Farmers have also suggested that they could also provide a bulk purchasing focus for farms within the AONB.

For further information on possible bulk buying agreements, farmers and land managers should initially contact Elliott Lorimer at the Forest of Bowland AONB office on 01200 448000 or [elliott.lorimer@lancashire.gov.uk](mailto:elliott.lorimer@lancashire.gov.uk).

## ***Summary of Annual Procedures***

### **TICK SUPPRESSION**

#### **In Spring**

Apply pourons to all sheep as soon as the ticks start to rise if there is a significant tick problem on the in-bye land. If necessary an injection against scab should be given when the hoggs return from away wintering.

If the tick problem is confined to the open fell then apply the pourons shortly before turning the hoggs, ewes and lambs to the fell.

Alternatively dip the hoggs on returning from wintering and dip the ewes shortly before lambing and apply the pourons to lambs preferably a few days before turning to the fell.

#### **At Clipping**

Apply pourons to all sheep.

#### **In Late August – At Weaning**

Apply pourons to all shearlings, ewes and lambs that will be running on tick infested land.

#### **In October**

Dip all sheep in a dip that is approved against tick and scab or apply pouron and give an injection against scab

### **LOUPING ILL ERADICATION**

**Depending on the level of infection on a particular farm,** follow the two recommended vaccination regimes.