



USEFUL LINKS

- **Strike Tracker Map** – www.farmanimalhealth.co.uk
- **Farm Animal Health** – www.farmanimalhealth.co.uk
- **National Sheep Association** – www.nationalsheep.org.uk
- **Responsible Use of Medicines in Agriculture** – www.ruma.org.uk
- **Sustainable Control Of Parasites in Sheep** – www.scops.org.uk
- **NFU Online** – www.nfuonline.com
- **British Veterinary Association** – www.bva.co.uk
- **Sheep Veterinary Society** – www.sheepvetsoc.org.uk
- **AHDB Beef and Lamb** – www.beefandlamb.ahdb.org.uk

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For further information call Elanco Animal Health on +44 (0) 1256 353131 or write to:

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Lilly House, Priestley Road,
Basingstoke, Hampshire,
RG24 9NL.

ⁱ Richard Wall. (2011). Modelling the impact of climate change on spatial patterns of disease risk: Sheep blowfly strike by *Lucilia sericata* in Great Britain. *International Journal for Parasitology*. 41 (7), 739–746.

ⁱⁱ Met Office. (2014). England Mean Temperature 1910-2014. Available: <http://www.metoffice.gov.uk/pub/data/weather/uk/climate/datasets/Tmean/ranked/England.txt>. Last accessed 19th Apr 2016.

ⁱⁱⁱ Survey of 130 sheep farmers, April 2016.

^{iv} Figures based on 19 ewe strikes with one death and 23 lamb strikes with two deaths over the entire season. Richard Wall and Fiona Lovatt (2015). Blowfly strike: biology, epidemiology and control, *In Practice* 37:181-188 doi:10.1136/inp.h1434.

^v Eblex Sheep BRP Manual 10.

^{vi} GfK November 2015 MAT (ectoparasite control).

^{vii} For the treatment and control of ticks, headflies and biting lice on sheep. For the prevention and treatment of blowfly strike on sheep.

*Spreads to areas covered by fleece, other areas may not be protected, including the feet.

CLiK® Pour On contains 5% (w/v) dicyclanil.

Legal category: [POM-VPS](#) in UK, [LM](#) in IE.

CLiKZiN® Pour On contains 1.25% (w/v) dicyclanil. Legal category: [POM-VPS](#) in UK, [LM](#) in IE.

Crovect® Pour On for sheep contains 1.25% (w/v) cypermethrin (cis:trans/80:20).

Legal category: [POM-VPS](#) in UK.

Information regarding the side effects, precautions, warnings and contra-indications can be found in product packaging and leaflets; further information can also be found in the Summary of Product Characteristics. Advice should be sought from the medicine prescriber.

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Use Medicines Responsibly (www.noah.co.uk/responsible)
UKSHPC00055

STRIKE FIRST

UNDERSTANDING & PREVENTING BLOWFLY STRIKE ON YOUR FARM



David Sellar,
Bowldown Farm, Gloucestershire
Flock: 700 North Country Mules

Expert report

Brought to you by
Elanco Animal Health





“ I wouldn't like to be in a situation where I hadn't prevented early. I need a treatment that binds and moves with the fleece, offering a good long protection period. ”

David Sellar

INTRODUCTION

Today, many farmers still find themselves caught out by blowfly strike unnecessarily. Although blowfly strike is entirely preventable, many still live with the financial, practical and emotional consequences of failing to act early.

Elanco Animal Health has collaborated with several experts in the field of parasitology, flock management, health and climatology, to address some of the barriers to preventing blowfly strike and the potential consequences of not acting.

This report combines the knowledge of an expert panel with the latest information on blowfly strike prevalence in the UK and new research on the experiences of farmers in dealing with this unpleasant, yet familiar, parasite.

THE 'STRIKE FIRST' PANEL



Dr Fiona Lovatt
Independent Sheep Veterinary
Consultant, Flock Health Ltd



Dr Stephen Dorling
Agro-climatologist,
WeatherQuest Ltd



Matt Colston
Technical Consultant,
Elanco Animal Health
BVM&S, CertSHP, MRCVS



Fiona Anderson
Technical Consultant Manager,
Elanco Animal Health
BVM&S MRCVS



David Sellar
Sheep Farmer, Bowldown Farm,
Gloucestershire

THE RISING STRIKE CHALLENGE

ENVIRONMENT

The timing and severity of blowfly strike is a direct consequence of local weather patterns. In Great Britain, a strong relationship between the incidence of total blowfly strike and mean weekly temperature has been demonstrated.ⁱ

Studies of recent climate data have highlighted a huge variation in temperature, humidity and rainfall year-to-year, but they also suggest the strike season is starting earlier and finishing later.ⁱ



“ In 2015 sheep farmers enjoyed a late blowfly season as temperatures remained cold well into spring. However, many were caught out with blowfly strike later in the summer. In 2014, I came across a number of farmers struggling with blowfly strike cases. In a year with a warm spring I have heard of a case reported as early as late March. ” - **Dr Fiona Lovatt**

ENVIRONMENTAL INFLUENCES

Besides the predisposing conditions of the sheep, weather plays an active role in the onset and development of strike. A variety of contributing factors will facilitate the development of body strike.

- **Temperatures of 9°C or higher** will determine when overwintering larvae hatch. High temperature and humidity will create a microclimate in the fleece, which attracts adult flies to lay eggs
- **Sufficient rainfall** to maintain fleece moisture long enough to cause fleece rot
- **Low wind speeds** around susceptible sheep allow greater fly mobility



“ It takes a sharp frost for blowflies to disappear and we’ve had reports of strike as late as November. This is usually in lambs that are close to finishing and have had a serious amount of investment which is at risk. Many can be caught out by working off the anticipated season with no thought about how the climate changes from week to week. ” - **Matt Colston**



“ Over the last ten years, the UK has seen 17% fewer air frosts than the average for the period 1961-1990. Relying on long-term averages is dangerous in a changing climate. ” - **Dr Stephen Dorling**

RESISTANCE

The fact that blowfly have affected sheep for centuries is an indication that, despite the availability of effective treatments, it is unlikely that this pest will ever be truly ‘wiped out’. However, selecting **narrow spectrum products** when available will allow flock managers to keep controlling them for years to come.

“Although there haven’t been any reported cases of SP resistance in the UK, there has been anecdotal evidence to suggest it could become an issue. If we carry on as we are then insecticide resistance is inevitable.” - **Fiona Anderson**



STRIKE FIRST TIP: right product, right time

Break the cycle of repeated product use with a targeted narrow spectrum treatment which acts on specific parasites at a particular time of year. It is also worth noting the active ingredient in the products you use. Even if you change brands it might not mean the active ingredient is changing.



“ Habit and convenience is driving resistance. It can be tempting to use products which treat a broad-range of parasites. With SP treatments the same active ingredient is treating different parasites, so multiple application happens through the season. ” - **Matt Colston**

SEVERITY

A single case of blowfly strike can quickly affect a large proportion of the flock and the severity of strike will depend on how quickly it is spotted.

Each sheep infected increases the number of flies in the environment to potentially affect other sheep. **In a matter of days, strike can spread to the whole flock.**



“ There is a very good reason sheep need to be checked every day. An apparently clean sheep can be **infested and severely damaged** by the next day. Strike can get out of control very quickly - in peak times blowfly eggs can hatch within **12 hours** and larvae can develop into full-grown maggots within a matter of days. ” - **Dr Fiona Lovatt**

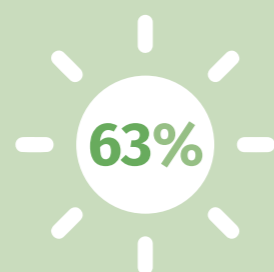


“ I’ve been to a case when the sheep was so severely struck it went into shock. Strike usually occurs at a flock level so it is very unlikely for just one sheep to be infected. If flies are around they will potentially target every case of foot rot or dirty breach in the area to feast on. ” - **Matt Colston**

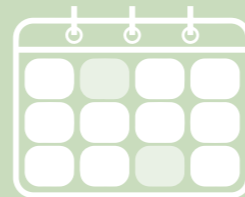
DID YOU KNOW?



2007, 2011 and 2014 saw the three mildest English springs in a record extending back to 1910ⁱⁱ



63% of sheep farmers agree that the blowfly season is **lasting longer**ⁱⁱⁱ



Cases of blowfly strike have been reported as early as **February** and as late as **November**ⁱⁱⁱ

DID YOU KNOW?



Significant damage from blowfly strike can occur in as little as **24-36 hours** after egg laying



ATTITUDE

Many farmers will gamble with blowfly treatment times, risking the emotional and financial implications if sheep become infested.

Our research found that the majority of sheep farmers consider signs of blowfly strike on the flock as the primary indicator of risk. But by this stage it can often be too late and the resulting production losses will have already been incurred.

Although attitudes towards preventative treatment are improving, it can often take a severe case of strike to prompt farmers to prevent earlier in the season.



“ One of the worst mistakes a sheep farmer can make is to underestimate the huge cost of loss of production due to disease in comparison to the smaller cost of preventing it in the first place. Saving a few pounds off the cost of preventative measures will inevitably cost more in the long run. ”

- **Dr Fiona Lovatt**



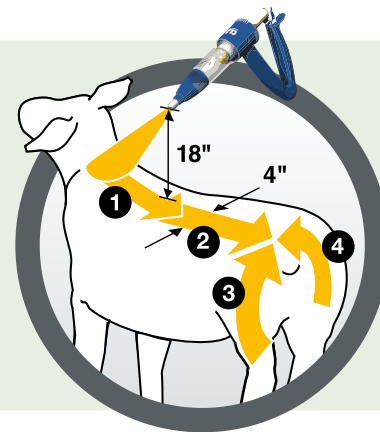
“ Many farmers think strike is something they can manage because they've always done so. In some years it works well, but in most years they get caught out at the beginning and end of the season or when there is a sudden challenge. Rather than having one or two animals struck, they can find a large proportion of the flock struck at the same time. ” - **Matt Colston**

Many cases of strike could have been avoided by simply applying the treatment product correctly. It is important to always use the correct application method and tools for the parasite you are looking to control.

STRIKE FIRST TIP: the 4-stroke method

Make the most of your medicines and your money – always use the correct applicator and follow application instructions

When applying **CLiK®** and **CLiKZiN®** use the **4-stroke method** (pictured) to ensure an accurate spread. Apply the total required dose one quarter at a time. Best results will be achieved by holding the gun approximately **45cm** from the sheep during application. **Always** calibrate your applicator gun and dose to the heaviest in the group.



STRIKE ON YOUR FARM

REGIONAL VARIATION

Wide regional variation in climate, weather and topography mean that the timing and prevalence of blowfly strike will be different across the UK and Ireland.

Farmers will know their own farm, and are best placed to determine the earliest period of risk in their area.



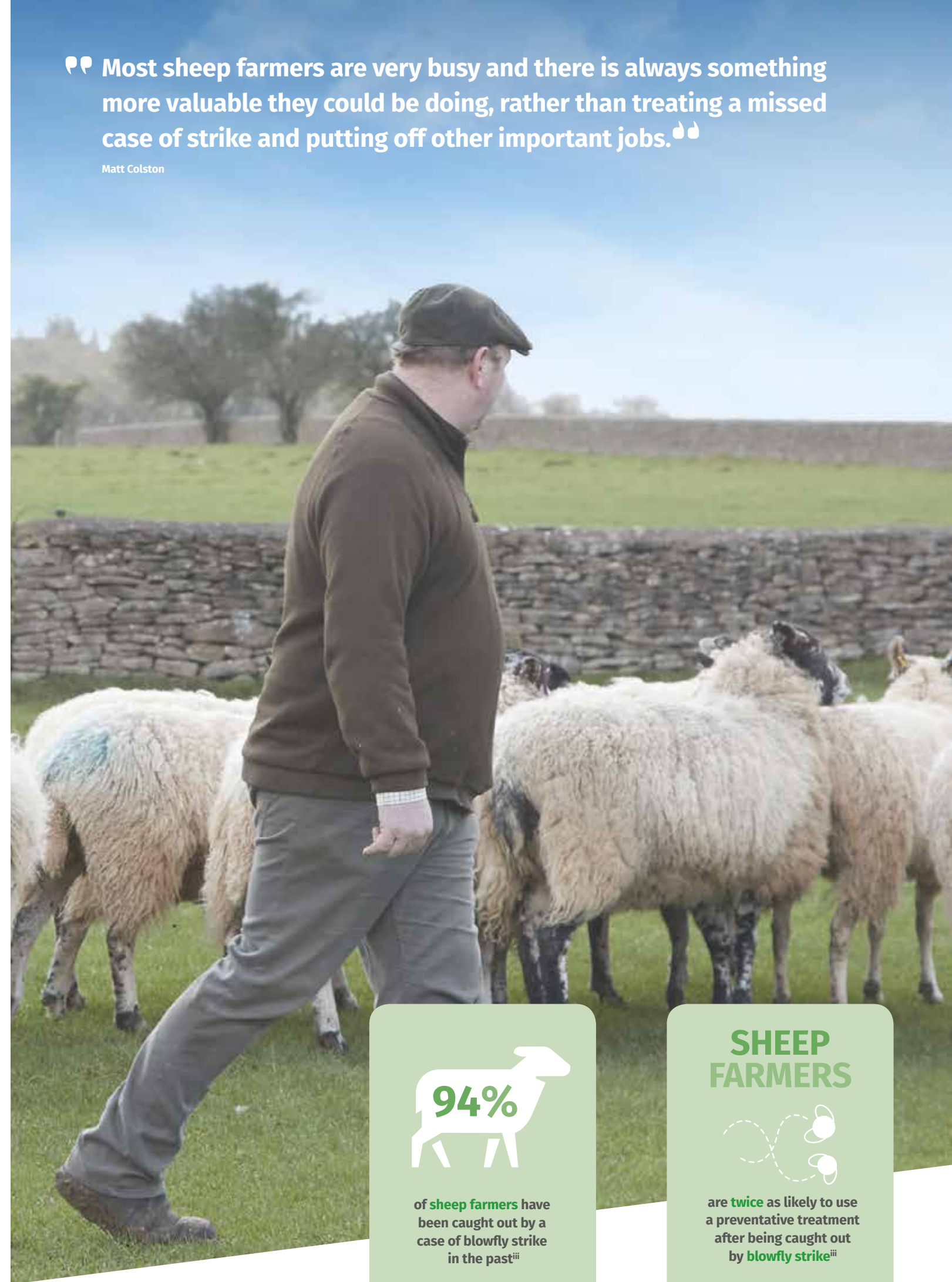
“ Your location in the UK will mean the difference between getting strike in early April or late May. What we're looking for is the soil temperature rising above 9°C, which is a good indicator of blowfly strike risk. On a south-facing slope the soil temperature can warm up to this more quickly than in other areas. ” - **Matt Colston**



9°C

“ Most sheep farmers are very busy and there is always something more valuable they could be doing, rather than treating a missed case of strike and putting off other important jobs. ”

Matt Colston



of **sheep farmers** have been caught out by a case of blowfly strike in the pastⁱⁱⁱ

SHEEP FARMERS



are **twice** as likely to use a preventative treatment after being caught out by **blowfly strike**ⁱⁱⁱ

ON FARM VARIATION

On the same farm, the risk of blowfly strike can vary wildly across different areas.

Farmers should treat each field as its own microclimate. Even in neighbouring fields, the lay of the land and the environment of each field will mean a different risk.



“ Variable pasture growth highlights very clearly just how much the microclimate can differ across an individual farm. Upper parts of sunny slopes can be so different to a shady and damp frost hollow, both during the day and at night. Be aware that daily mean temperature could easily vary by 5°C on a single farm according to the field of interest. Don't assume that measurements you might make in the farmyard will necessarily represent a worst case. ” - **Dr Stephen Dorling**

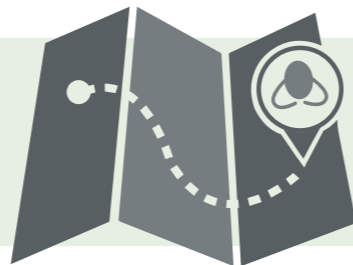
Our panel advises paying particular attention to areas of the farm which are more prone to strike, including:

- Areas with a moist climate or damp ground
- Wooded areas with a low wind factor
- South-facing slopes
- Dead-pits or undisposed carcasses
- Areas with sheltered valleys



STRIKE FIRST TIP: Strike Tracker Map

Sheep farmers nationwide can check the current risk of blowfly strike in their region and report their first incidences of blowfly strike by using the Elanco 'Strike Tracker' tool available online at www.farmanimalhealth.co.uk



OTHER RISK FACTORS

The incidence of blowfly strike is determined by two factors: the number of susceptible sheep and the number of flies in the environment. To control fly strike, two strategies can be considered: reducing sheep susceptibility and reducing fly abundance.

SCOPS best practice advice to help minimise sheep susceptibility to strike:

- Dag to reduce soiling and/or remove dirty wool around the breech
- Reduce the incidence of soiling by avoiding nutritional upsets causing scouring
- Having a sound worm control strategy in place
- Avoid breeding from sheep that are habitually struck and/or tend to soil themselves
- Dispose of carcasses quickly
- Reduce the incidences of foot rot

SCOPS recommend the use of narrow-spectrum products, such as Insect Growth Regulators (IGRs), to minimise the risk of lice, tick or scab mite resistance developing.



STRIKE FIRST TIP: predicting the earliest period of risk on your farm

Predicting the start of the blowfly season is a relatively straightforward procedure using a max-min thermometer.

Place the thermometer outside, away from the shelter of buildings. From each day starting in January, add together the daily maximum and minimum temperature, divide by two and subtract nine. Add together all the positive daily totals. The date on which they reach 150 should give a sufficiently accurate prediction of the start of the blowfly season and indicate the need to consider taking preventive measures.^{iv}



70%
of sheep farmers report that blowfly strike is responsible for a significant loss of their timeⁱⁱⁱ

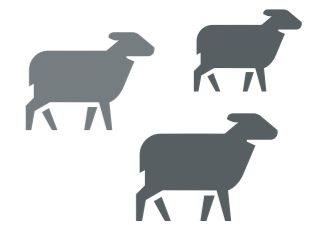
THE IMPACT OF STRIKE

MANAGEMENT CONSEQUENCES

Many farmers may not put a price on their time, but a poorly managed incident of blowfly strike can be costly and could end up taking much more time than it would to have prevented early.

The labour involved in treating a case of blowfly strike may include:

- Catching the sheep
- Checking the sheep for further strike
- Clipping the wool surrounding lesions
- Applying a treatment
- Housing the sheep under supportive measures
- Application of antibiotics and other medicines
- Checking the remainder of the flock and repeating if needed



“ It takes a lot longer to treat a case than to apply a preventative treatment. Being prepared and preventing early is a planned event where sufficient manpower and resources are available. This is much easier to manage than an emergency treatment and will usually take less time. ” - **Matt Colston**

FINANCIAL CONSEQUENCES

There are 3 main financial implications that can follow a case of blowfly strike:

- 1 A struck lamb is unlikely to make a significant profit
- 2 Complete losses due to lamb and ewe death
- 3 Long-term impacts on ewes mean premature culling

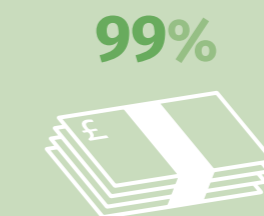
Although there is a lack of published data on actual losses as a result of blowfly strike, a recent publication^{iv} estimated that:

- the cost of breeding a replacement ewe is approximately £200
- the average loss per lamb that dies from strike is £80
- struck lambs will suffer a £10 production loss
- the labour cost to handle each struck animal is £10
- the cost of treatment is 50p per animal

In a moderate risk area, the annual cost of not treating blowfly strike has been estimated as follows:



“Many farmers will wait and treat later due to perceived savings in treatment cost, but this is a false economy as the duration of efficacy for some products is so long anyway. Treating earlier in the year means a smaller lamb and a potentially smaller dose, which is a genuine saving. ” - **Dr Fiona Lovatt**



99%
of farmers have suffered financial losses as a result of blowfly strike, and more than one in five has suffered losses greater than £500ⁱⁱⁱ

DID YOU KNOW?

Figures from 2015 show blowfly strike costs the sheep industry some £2.2m per year. In addition to animal deaths, there are losses from damaged wool and fleeces, plus the cost of treatment and strike control^{iv}



“Ewes are expected to have 4-5 productive seasons, but a case of strike can cut that short and reduce the value of that animal. Struck lambs will often miss out on their prime period for growth and may have to remain on the farm for longer at increasing expense.” - **Matt Colston**



STRIKE FIRST TIP: peace of mind

Preventing early with a long-lasting product that has a high resistance to washout can offer the peace of mind of knowing the flock is covered during key periods. It can also help free up time for other important tasks on the farm.

EMOTIONAL CONSEQUENCES

Blowfly strike can be extremely unpleasant to deal with. It can often create feelings of **frustration** that the case has been missed and **anxiety** that other animals in the flock are affected. A suffering animal can also prompt feelings of inadequacy and guilt on the part of the flock manager.

Our survey found that **job satisfaction** was the most severely impacted by a case of blowfly strike and a significant cause of **stress and anxiety** for 74% of sheep farmers.ⁱⁱⁱ



“It’s frustrating to find a sheep in this condition because, of course, when you’ve spotted a case of strike, it’s too late and has to be treated as a disease, resulting in blanket cover for the whole flock if you haven’t done it already.” - **David Sellar**

A FOCUS ON PREVENTION

Our experts recommend prevention as the key to good seasonal blowfly management.

A range of treatment options exist to help manage strike problems, however a limited number offer the benefits of a long protection period and durable cover throughout the fleece.

“Preventing the first generation of flies reproducing will have a big impact on the number of flies in the environment throughout the season.” - **Matt Colston**



“You can keep checking for strike, but ultimately you’ll find a case and you’ll need to spend the money on treatment anyway. So why not cover the flock early?” - **David Sellar**



STRIKE FIRST TIP: two key actions when it comes to preventing blowfly strike

- 1 Reducing number of susceptible sheep
- 2 Reducing the number of flies in the environment

Use an IGR with FleeceBind™ technology

Preventing with an Insect Growth Regulator (or IGR), such as CLiK® or CLiKZiN®, will stop larvae from developing into the harmful second and third stage maggots responsible for flystrike.

The benefits of FleeceBind™ technology

- CLiK® and CLiKZiN® are the only IGRs with FleeceBind technology, providing full fleece protection*
- Spreads from tip to base of fleece, around the animal and onto new wool growth
- Binds the formulation strongly in place and sticks to the wool even if applied to damp fleece
- Provides consistent protection, practical cover and resistance to washout



CLiK®

- Long-lasting, 16-week cover minimises labour
- Suitable for ewes and lambs with any fleece length
- Use directly off shears to save time by avoiding the need to re-gather sheep
- Reduces risk of flystrike in sheep and associated productivity losses



CLiKZiN®

- 8 weeks of protection against blowfly
- Only a 7-day meat withhold
- Suited for use on all ages, including lambs for market
- Gives farmers flexibility when marketing lambs



Crovect®

- Treat and control ectoparasites with the number one synthetic pyrethroid^{vi}
- Treats and prevents blowfly strike, treats ticks and biting lice on sheep, and treats and controls headflies^{vii}
- Prevents blowfly strike for between 6 and 8 weeks and kills maggots
- Treatment of tick infestation with a persistent efficacy of 10 weeks
- Kills biting lice
- 8-day meat withhold

80%



of sheep farmers consider **full fleece protection** as very or extremely important when considering a product for blowfly preventionⁱⁱⁱ

HOW TO STRIKE FIRST AGAINST BLOWFLIES:

Our panel recommends a 5-step approach to STRIKING FIRST against blowflies:

F

Find

find a product that offers reliable full fleece cover*

I

Integrate

integrate your parasite prevention plan with your production schedule

R

Risk

find the earliest period of risk for your farm

S

Strike first

strike first and use a preventative product early

T

Treat correctly

make sure you apply using the 4-stroke method

THE MAJORITY



of sheep farmers select their preventative treatment product based on **length of cover** and **ease of use**ⁱⁱⁱ