

16 Weeks
Blowfly
Cover for
Sheep

CLiKTM

POUR-ON

The once a season blowfly pour-on

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Introducing CLiK™. Once a season, full body blowfly protection for sheep - and total peace of mind for sheep farmers

CLiK is an easy to apply pour-on that provides extended full body protection against blowfly strike for 16 weeks. The active ingredient of CLiK is dicyclanil, a potent insect growth regulator, discovered and developed by Novartis Animal Health. CLiK represents a major step forward in the prevention of blowfly strike on sheep.

The Benefits of CLiK™

16 weeks blowfly cover

- CLiK provides extended full body protection against blowfly strike for 16 weeks.
- This means only one blowfly treatment per season on most farms.

Peace of mind

- Once treated, sheep can be turned out with no need to worry about fly strike for 16 weeks, however severe the season or wherever the sheep may be grazing.

Convenient and easy to use

- No Certificate of Competence is required to purchase CLiK.
- CLiK is supplied ready to use so there is no complicated dilution or mixing.
- You can take CLiK to the sheep, and use it wherever the sheep may be, which is much less stressful for sheep and shepherd.
- CLiK is quick and easy to apply single handedly.
- CLiK contains a scourable short-lived red dye to identify treated sheep.
- With CLiK there is no wastage or disposal worries.

Cost effective

- Compared to other products, CLiK is very cost effective on a 'pence per animal per week of protection' basis.
- The once a season treatment with CLiK saves time and labour costs.
- With CLiK there are no hidden costs such as Certificate of Competence, contractor fees or disposal charges.
- CLiK is time saving, labour saving and cost saving.



What is CLiK™?

Formulation

CLiK is a water-based, ready-to-use, pour-on formulation. CLiK contains 5% dicyclanil, an active ingredient which belongs to a chemical group called the pyrimidinamines. This group has never before been used for the control of blowfly strike in the UK.

CLiK was developed using new 'suspo-emulsion' technology and is formulated so that it is ready to use (Figure 1). The suspending liquid is largely water and this contributes greatly to its safety for farmers, the sheep and the environment. CLiK contains a scourable, short-lived red dye, which helps identify treated sheep. The formulation is non-corrosive and non-flammable.



Figure 1: Suspo-emulsion technology

Safety profile

The safety of CLiK to mammals has been thoroughly investigated. CLiK is rated as a product of low acute toxicity and is unlikely to present an acute hazard to those exposed to it during normal use e.g. farmers and shearers. It can be slightly irritant to the skin and eyes.

Sheep treated at up to 10 times the recommended dose, 3 times, at weekly intervals, did not show any adverse reactions. Therefore, CLiK is considered to be well tolerated by sheep and offers a safety margin of at least 10 times the recommended dose.

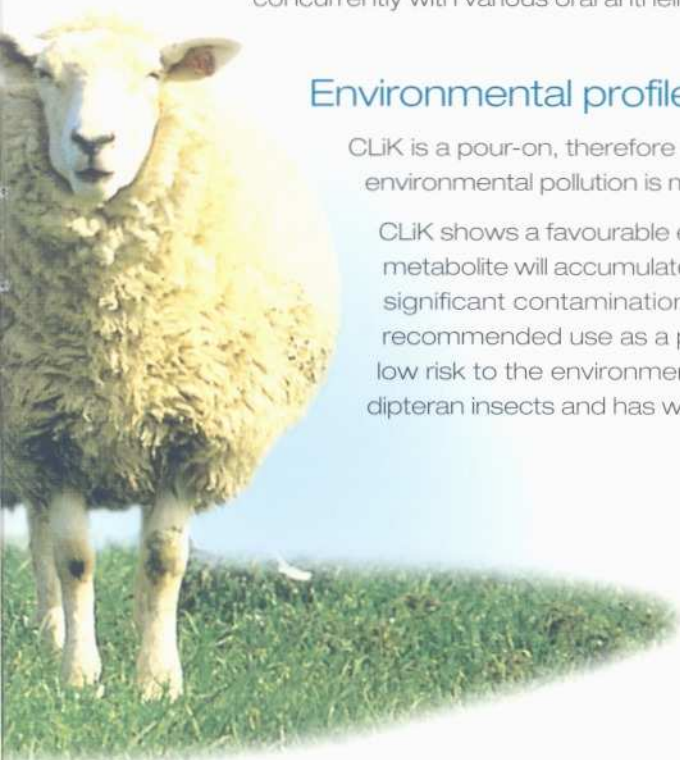
CLiK, when applied at the recommended dose, had no adverse effects on leather quality or the physical properties of leather made from the skins. Wool quality is also not affected by CLiK.

In field trials, no adverse reactions have been reported when CLiK has been applied concurrently with various oral anthelmintic formulations.

Environmental profile

CLiK is a pour-on, therefore there is no surplus dipwash to dispose of. The risk of environmental pollution is minimised.

CLiK shows a favourable environmental profile and neither CLiK nor its principal metabolite will accumulate in the environment. The available data suggests that significant contamination of the environment by dicyclanil is unlikely after its recommended use as a pour-on. Consequently, CLiK is considered to pose a low risk to the environment if used as recommended. CLiK is effective against dipteran insects and has weak activity against other insects.



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How does CLiK™ work?

CLiK provides extended protection against blowfly strike for 16 weeks

The blowfly life cycle

Only a few species of fly actually cause primary strike on sheep. In the UK, the greenbottle *Lucilia sericata* is most commonly isolated. Many other species may lay their eggs on established strike giving rise to secondary strikes. Unlike lice or the scab mite, blowflies can live and reproduce away from the sheep.

Total development from egg to stage 3 larvae can take as little as 3 days on a sheep's back, or even less in a wound.

After hatching the larvae pass through three moults.

Eggs (laid in wool)

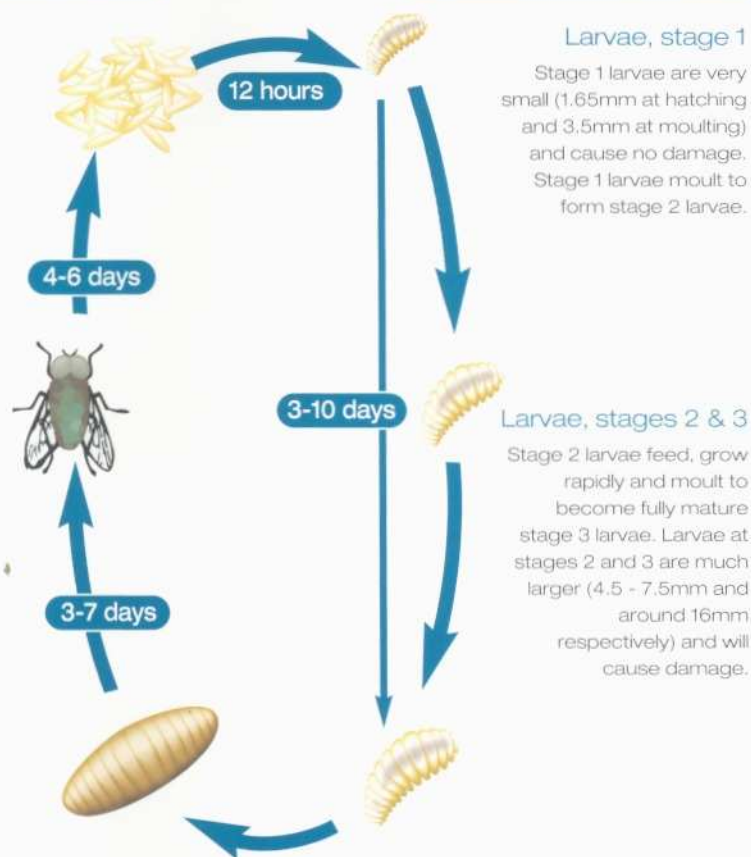
Under ideal conditions of temperature and humidity eggs hatch into stage 1 larvae in about 12 hours.

Adult fly

Adult flies measure up to 1cm in length and have a metallic green sheen on the body. Female flies need a protein meal before they reach sexual maturity. Fertile females can lay up to 3,000 eggs in batches of 100-200 over a 3-week period.

Pupae

Stage 3 larvae drop off the sheep to pupate in the soil. They remain as pupae for between 3 and 7 days under summer conditions. During winter, the pupae remain inactive until the soil temperature rises above 9°C. Egg laying begins 5-9 days after emerging from pupae.



Larvae, stage 1

Stage 1 larvae are very small (1.65mm at hatching and 3.5mm at moulting) and cause no damage. Stage 1 larvae moult to form stage 2 larvae.

Larvae, stages 2 & 3

Stage 2 larvae feed, grow rapidly and moult to become fully mature stage 3 larvae. Larvae at stages 2 and 3 are much larger (4.5 - 7.5mm and around 16mm respectively) and will cause damage.

Effect of blowfly strike

CLiK acts specifically on fly larvae, and its 'growth regulating' mechanism results in the interference of moulting and pupation thereby stopping larval development.

Because CLiK works as an 'insect growth regulator' it is recommended that it only be used for the prevention of flystrike. This means that the flock should be treated with CLiK prior to an anticipated fly challenge. CLiK is not designed to cure existing strikes.

CLiK has been developed to be as rainfast as possible. Damp sheep or light rain after treatment will enhance the spread and penetration of dicyclanil into the wool. High rainfall after treatment may shorten the protection period. Therefore, dry or damp sheep can be treated, but do not treat very wet animals.

What does CLiK™ do?

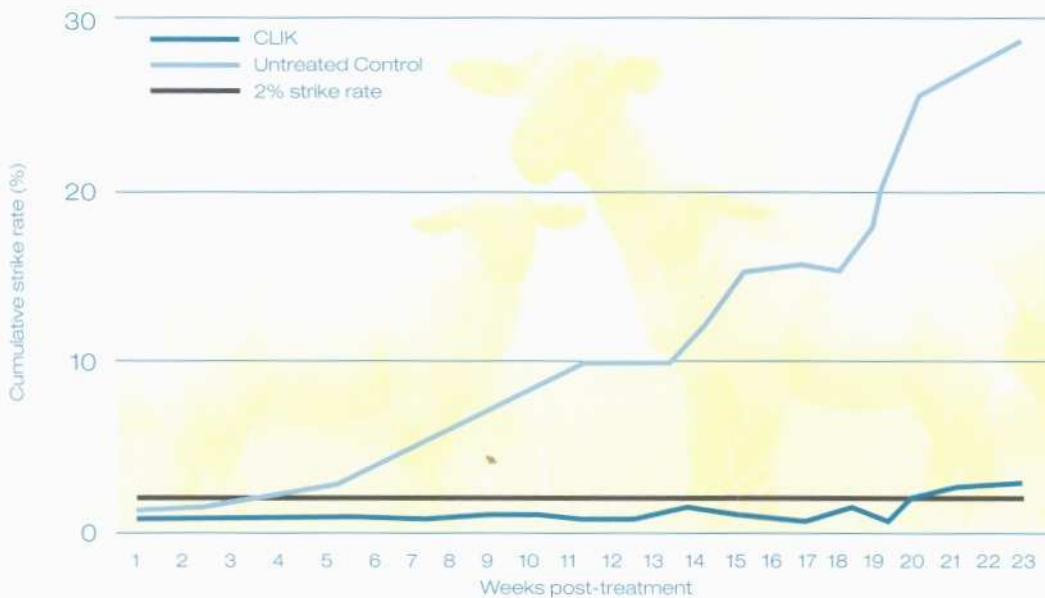
Efficacy

CLiK provides 16 weeks blowfly cover no matter how severe the season.

CLiK has been trialed extensively on farms throughout the United Kingdom and has proven to be highly effective in preventing blowfly strikes on sheep.

- 18 on-farm trials conducted over a 3-year period in the UK (1995-1997).
- 6,914 lambs treated with CLiK, compared to 2,832 lambs left as untreated controls.
- Treated lambs were compared with untreated lambs for periods of up to 22 weeks.
- Efficacy was assessed by calculating the cumulative strike rate for treated and untreated animals and the percentage reduction of flystrike achieved for the treated animals.

Figure 2: The efficacy of CLiK



At 22 weeks post treatment the three year cumulative strike rate for CLiK treated lambs reached only 2.8%, compared to 29.2% for the untreated controls.

10 times more blowfly strikes occurred in untreated animals compared to CLiK treated animals.

The 2% cumulative strike rate benchmark was reached between 19 and 20 weeks post treatment with CLiK.

The percentage reduction of flystrike in CLiK treated lambs consolidated for all 3 years remained above 89% during the 22 week trial period.

Conclusion

Trials conducted in the United Kingdom have demonstrated that when used according to label instructions, CLiK provides excellent protection from flystrike for 16 weeks.

What do farmers think of CLiK™

'Welfare of the animals is what's most important and CLiK's 16 weeks blowfly control worked well. I thought CLiK might be expensive, but not when you balance out the number of doses you get and of course, you only use it once.'
G White, Devon

'I'm on hill ground and the health of my sheep, out of sight, is always in the back of my mind, even more now the blowfly season seems to be getting longer. CLiK's 16 weeks blowfly protection is a real bonus. It was very efficient and, as a pour-on, I particularly liked the way it was so quick and easy to apply. It saved me a lot of work as you only use it once.'

John Yeo, Cornwall

'Peace of mind is what's really important to me in blowfly control. With CLiK it's good to know that everything is covered efficiently that it's all been done properly. I was particularly pleased with the length of time that it covered. It meant I could carry on harvesting, which helped a lot, and the lambs were then not troubled by blowfly.'

CLiK was easy to use and especially handy on off lambs away from the holding. I could do my large flock in just one evening. CLiK is a new generation pour-on with better blowfly control than present and lasts almost twice as long. I wouldn't hesitate to recommend CLiK to other farmers ...'

Jim Stevens, Devon



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Why you should use CLiK™

Advantages of CLiK over OP dips for blowfly

CLiK™	OP DIPS
✓ Non OP formulation.	✗ OP formulation.
✓ No Certificate of Competence required for purchase.	✗ Certificate of Competence required for purchase.
✓ No preparation. CLiK is supplied ready to use.	✗ Supplied as concentrates: dips have to be made up and replenished during use.
✓ No fixed equipment for application. CLiK is applied with a backpack and pour-on gun and can be used wherever the sheep are.	✗ Central handling facilities and a dip bath are needed and sheep may have to be moved quite long distances to these facilities.
✓ No time constraints or labour concerns. CLiK can be applied in seconds, single-handedly.	✗ Dipping is at least 3-4 times slower than applying a pour-on and can be very labour intensive.
✓ CLiK can be applied whenever convenient, at the same time as drenching or vaccination.	✗ Once the dip bath is made up the job has to be completed. Sheep should not be dipped if heated, tired or thirsty and need at least 3 weeks' fleece growth before dipping.
✓ Shorter withdrawal period. CLiK only has a 20 day meat withdrawal period.	✗ OP dips have a 35 day meat withdrawal period.
✓ No waste, disposal worries or costs. CLiK is supplied ready to use and applied in a measured dose.	✗ Spent dips, even after neutralising, need to be disposed of in accordance with the Groundwater Regulations.

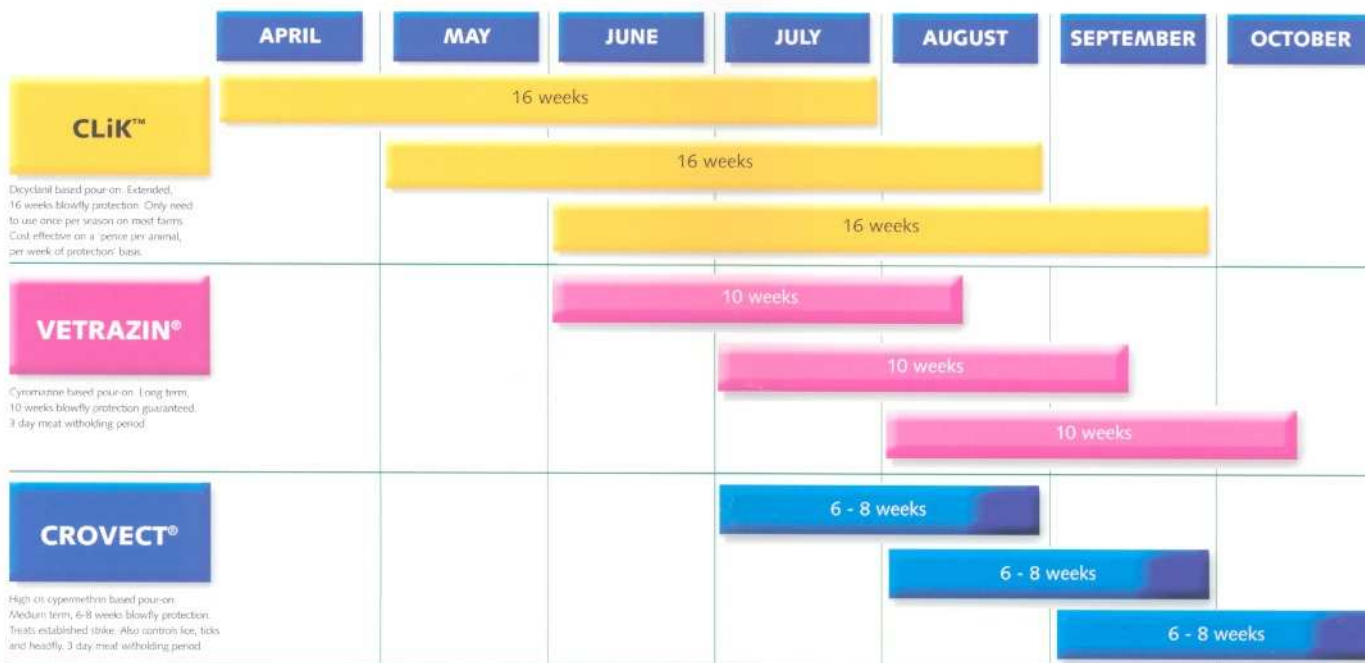
How does CLiK compare with other Pour-on's?

	CLiK™	VETRAZIN®	CROVECT®
Length of protection	Extended protection 16 weeks	Long term protection 10 weeks guaranteed	Medium term protection 6-8 weeks
Number of treatments per 16 week season	One	Two	Two/Three
Number of 30kg lamb treatments per 5.0L pack	200	166	166
Number of 50kg ewe treatments per 5.0L pack	166	100	125
Effect against established strike	No CLiK is an Insect Growth Regulator. It has no effect on established maggots	No Vetrazin is an Insect Growth Regulator. It has no effect on established maggots	Yes When applied at the rate of 2.5ml per 100-150cm ² using the T bar nozzle.
Effect against other parasites	No CLiK acts specifically to prevent blowfly strike	No Vetrazin acts specifically to prevent blowfly strike	Yes Crovect is also effective against headfly, lice and ticks but for each of these parasites the product must be used in a different way using the appropriate nozzle and dose rate.

When should I use CLiK™?

CLiK is specifically a blowfly preventative and should be administered once, before or at the beginning of fly activity

The perfect Blowfly solution at any time of year



How much CLiK will I need?

CLiK is applied at 0.6-2ml (30-100mg dicyclanil)/kg bodyweight according to the following recommendations:

Dose rates for CLiK

For the prevention of body and crutch strike:

Sheep weight (kg)	Dose (ml)	No. of doses per 2.2L pack	No. of doses per 5L pack
10-20	20	110	250
21-30	25	88	200
31-50	30	73	166
> 50	35	62	142

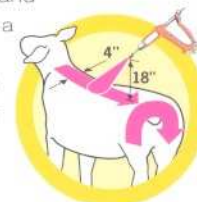
It will be noted that lambs receive a relatively higher dose per kilogram (kg) liveweight than adult sheep. This is because the dose is based on the surface area of the animal rather than its bodyweight.

How do I use CLiK?

CLiK is given in a measured dose and must be applied using the Novartis Pour-on gun with the fan spray nozzle. Best results will be achieved by holding the gun approximately 18 inches from the sheep during application. Apply along the spine of the animal in a band at least 4 inches wide from the middle of the shoulders to the rump and around the crutch and tail. Half the dose should be applied along the spine with the remainder over the crutch and tail. CLiK is available in both 2.2 and 5 litre packs and utilises the unique Novartis rucksack for easy application.

To ensure you get the best out of CLiK

1. Check that you're giving the right dose for the weight of sheep being treated. Weigh a few of the heaviest sheep in each group and treat all at the same dose as the heaviest.
 2. Animals with dirty back ends should be dagged prior to application.
 3. Always use the Novartis Pour-on gun with fan spray nozzle and calibrate the gun to ensure it is giving the correct dose volume.
 4. Hold the gun 18 inches from the sheep and squeeze the trigger hard enough to deliver a minimum 4-inch spray band.
 5. Spray half the dose along the animal's back from the middle of the shoulders to the tip of the tail.
 6. Spray the second half of the dose in an arc around the animal's tail and crutch.
 7. If dagging or crutching is carried out in the weeks following application these animals should be retreated.
- After use, dosing guns should be flushed out with warm, soapy water and then rinsed with clean water. Once cleaned, dosing guns should be stored with paraffin oil or castor oil dispersed inside the chamber.



Do not use any guns that are normally used for oral drenching of sheep for internal parasite control.

It must be noted that poor application techniques will result in reduced periods of protection.

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The once a season blowfly pour-on



Contra-indications, warnings etc.

For animal treatment only. Animals must not be slaughtered for human consumption within 20 days of the last treatment. Do not treat sheep producing milk for human consumption. For external use only. Shake the container well before use. It is recommended that animals with dirty back-ends are daggged prior to application. If daggging or crutching is undertaken in the weeks following application, these animals should be re-treated, otherwise protection could be lost. Dry or damp animals can be treated but do not treat very wet animals. Do not apply during heavy rainfall, or when such conditions are expected. Treated sheep must be kept away from watercourses for at least one hour after treatment. There is a serious risk to aquatic life if this advice is not followed.

Operator warnings

Operators should wear wellington boots, synthetic rubber gloves and waterproof trousers when applying the product. In case of skin contact remove contaminated clothing and thoroughly wash the affected parts of the body with soap and

water. In case of eye contact, rinse eyes with clean water for several minutes and contact physician for advice. In case of ingestion call for medical advice. Always wash hands with soap and water after handling sheep and before eating and drinking or smoking. Wash hands and exposed skin after working with recently treated sheep. Do not eat, drink or smoke whilst using the product.

Handling sheep in the weeks following treatment

It is good practice not to shear sheep in the three months after treatment. Handle sheep as little as possible after treatment as residues remain on the fleece for some weeks. If you need to handle sheep after treatment wear wellington boots and coveralls. If the sheep are wet also wear waterproof trousers and coat.

Special precautions for disposal

HARMFUL to aquatic invertebrates. Do not contaminate ponds or other waterways with the product or empty container. Dispose of any unused product or containers in accordance with guidance from your local waste regulation authority, e.g. the local regional office of the Environment Agency or SEPA.

Pharmaceutical precautions

Store below 25°C. Protect from direct sunlight. Protect from frost. Store in tightly closed original container. Store away from food, drink and animal feedstuffs. Keep out of reach of children. Legal category PML.

Package quantity

2.2 and 5.0 litres in high density polyethylene backpack container.

Further information

Dicyclanil is a potent insect growth regulator belonging to the pyrimidinamine group. The suspending liquid is largely water. CLiK contains a scourable, red dye which helps identify treated sheep. The formulation is non-corrosive and non-flammable. Dicyclanil does not show any specific embryotoxicity or fetotoxicity, therefore CLiK can be used on animals at all stages of pregnancy and lactation.

Marketing Authorisation Number:

Vm 12501/4054

 **NOVARTIS**

Further information about CLiK call the
Novartis Animal Health Careline 0800 801566
(8.30am - 6.00pm weekdays)

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CLiK is available in 2.2 and 5 litre packs. CLiK Pour-on contains 5% w/v dicyclanil. CLiK™ is a trademark of Novartis AG, Basle, Switzerland.