

Take control



of fluke in
sheep and lambs



Solantel[®]



Oral Suspension for Sheep



The burden of liver fluke

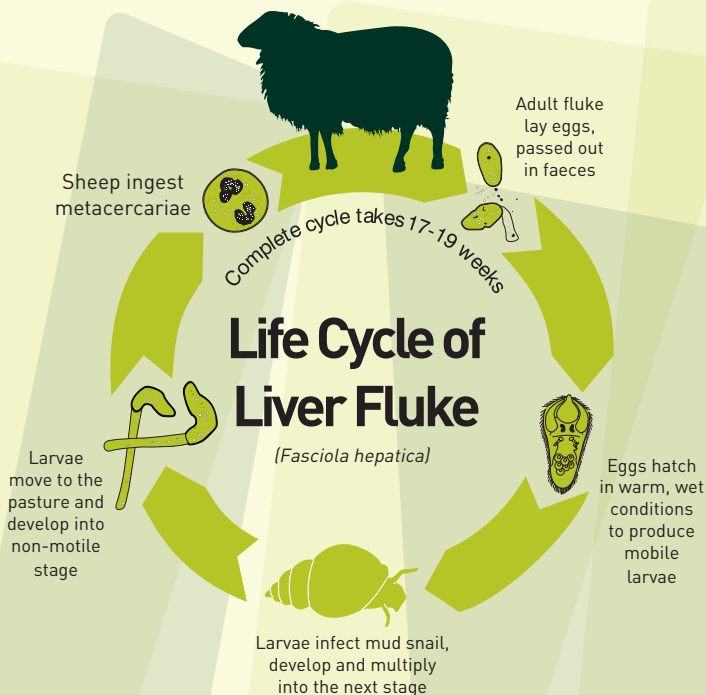
In spite of our increased knowledge of liver fluke, the prevalence of this parasite has increased a lot in recent decades, to become endemic in many parts of the UK. Climate change may be contributing to this situation, with many wet summers and considerably warmer winters leading to increased survival of fluke and their intermediate host, the mud snail, on pastures. Intensification of farming practices, increased animal movements and an increase in drug resistance has also been implicated.

The lifecycle

Liver fluke disease or fasciolosis is caused by the trematode parasite, *Fasciola hepatica*. The same species affects both sheep and cattle.

Disease is caused as a result of the migration of large numbers of immature flukes burrowing through the liver tissues and/or from the existence of adult flukes sucking blood and causing inflammation in the bile ducts of the liver.

The liver fluke cycle involves two different hosts – the cattle/sheep and the mud snail *Galba truncatula*. Both hosts need to be present to continue the cycle. The snail host is mainly found in muddy, wet areas of ground with poor drainage; hence the prevalence of fluke is greater in livestock grazing such areas.



The costly consequences

It is estimated to cost UK agriculture somewhere in the region of £300 million per year due to production losses; liver condemnations alone cost over £3 million per year¹.

It has been estimated that profit losses per head can extend to 10-15% per animal as a direct result of infection, suggesting disease can cost £3-£5 per ewe².



1 AHDB Beef & Lamb: <http://beefandlamb.ahdb.org.uk/returns/>
2 A.F Loyacano, J.C Williams, J.Gurie, A.A DeRosa (2002). Effect of gastrointestinal nematode and liver fluke infections on weight gain and reproductive performance of beef heifers. Veterinary Parasitology.
3 www.nadis.org.uk

Solantel®

Oral Suspension for Sheep

Solantel is an early-acting flukicide offering treatment against liver fluke from 5 weeks of age.

Solantel contains closantel, an anthelmintic belonging to the salicylanilides group. The molecule does not require metabolism by the liver to become active (unlike triclabendazole which is rendered less useful in the face of liver damage): it is absorbed unchanged into the bloodstream, and has limited distribution into other tissues, which means that it specifically targets those parasites which feed on blood, namely liver fluke and several stages of *Haemonchus contortus*. It is also eliminated relatively slowly from the sheep's bloodstream.

● Contains closantel

● Drench for sheep

● Activity against immature and adult liver fluke:

➤ Suitable for treatment of chronic and subacute fasciolosis

● Activity against inhibited, L4 and adult stages of *Haemonchus contortus* (the 'barber's pole' worm)



Treating sheep with Solantel Oral Suspension

Liver fluke

Solantel kills fluke from 5 weeks of age, treating both immature and adult fluke.



Closantel is in a different anthelmintic class to triclabendazole, and therefore will be effective against triclabendazole-resistant fluke.

Barber's pole worm

Solantel treats inhibited, L4 and adult stages of *Haemonchus contortus*.



Haemonchosis was previously described as a problem confined to South East England, but is now widespread and frequently found as far north as Scotland. Acute haemonchosis is characterised by a profound anaemia: animals are weak and likely to collapse if driven. Animals may struggle to breathe, but acute death can be the only sign. Subacute infections resemble fasciolosis, with anaemia, weight loss, lethargy and bottle jaw. Any age of sheep can be affected by either syndrome.

Nasal bot fly

Solantel can be used for the treatment of *Oestrus ovis*, the sheep nasal bot fly.



Dosing guide

10mg of closantel per kg bodyweight (i.e. 1 ml of Solantel per 5kg bodyweight).

For example:

Bodyweight	Dose
Up to 5 kg	1 ml
10 kg	2 ml
20 kg	4 ml
30 kg	6 ml
40 kg	8 ml
50 kg	10 ml
60 kg	12 ml
70 kg	14 ml
80 kg	16 ml


Responsible solutions

Flukicide active ingredients should be rotated according to time of year and the likely age of the fluke infestation within your sheep. Triclabendazole should be reserved for when early immature fluke may be present and acute disease is

possible. Historical over-reliance on this flukicide has contributed to resistance development in *F. hepatica*, which has been confirmed repeatedly in the UK⁴, particularly in sheep-rearing areas of the UK⁵.

Other molecules such as closantel should be used at times of the year when early immature fluke are not the target, to slow the development of drug resistance in liver fluke.

Efficacy spectrum of drugs at recommended dose rates against *F. hepatica* in sheep*

STAGE FLUKE AGE IN WEEKS	ADULT			LATE IMMATURE						EARLY IMMATURE				
	14	13	12	11	10	9	8	7	6	5	4	3	2	1
 Levamisole, oxcyclozanide														
Oxcyclozanide*														
Albendazole*														
Nitroxylinl*														
 Closantel														
Triclabendazole**														

* Adapted from I. Fairweather, J. C. Boray (1999) Fasciolides: Efficacy, Actions, Resistance and its Management. The Veterinary Journal

** Efficacy in the absence of resistance.

4 R. E. B. Hanna, C. McMahon, S. Ellison, H. W. Edgar, P. E. Kajugu, A. Gordon, D. Irwin, J. P. Barley, F. E. Malone, G. P. Brennan, I. Fairweather (2015). *Fasciola hepatica*: A comparative survey of adult fluke resistance to triclabendazole, nitroxylinl and closantel on selected upland and lowland sheep farms in Northern Ireland using faecal egg counting, coproantigen ELISA testing and fluke histology. Veterinary Parasitology.

5 D. J. L. Williams, A. Howell, J. Graham-Brown, J. Kamaludeen, D. Smith (2014). Liver fluke – an overview for practitioners. Proceedings of BCVA Congress.

Norbrook sheep flukicide range

Winter/
spring

Subacute

Solantel[®]

Oral Suspension for Sheep

Solantel drench for sheep

POM-VPS

- Contains closantel - early acting flukicide
- Treatment of mature and late immature flukes
- Effective treatment against inhibited, L4 and adult stages of the "barber's pole" worm and the sheep nasal bot fly
- Dose rate of 1ml per 5kg bodyweight
- 42 day meat withhold

Spring/
summer

Chronic

LEVAFAS[®] DIAMOND

Levafas Diamond drench for cattle and sheep

POM-VPS

- Contains levamisole and oxclozanide
- For the control of gutworm, lungworm and liver fluke infections in cattle and sheep
- Treatment of mature liver fluke
- 5 day meat withhold for sheep and cattle

Solantel® Oral Suspension for Sheep

Presentation:

Solantel is an off-white to yellow oral suspension containing 50mg/ml closantel.

Uses:

Solantel oral suspension is indicated for use in sheep for the treatment of chronic and subacute fasciolosis (due to *Fasciola hepatica*), *Oestrus ovis* (Sheep Nasal Bot Fly) and inhibited, L4 and adult stages of *Haemonchus contortus*. The product is effective against mature and late immature flukes (from 5 weeks immature).

Dosage and Administration:

Give orally as a drench.

10 mg of closantel per kg bodyweight (i.e. 1 ml of product per 5 kg bodyweight).

For example:

Bodyweight	Dose
Up to 5 kg	1 ml
10 kg	2 ml
20 kg	4 ml
30 kg	6 ml
40 kg	8 ml
50 kg	10 ml
60 kg	12 ml
70 kg	14 ml
80 kg	16 ml

To ensure administration of a correct dose, bodyweight should be determined as accurately as possible; accuracy of the dosing device should be checked. If animals are to be treated collectively rather than individually, they should be grouped according to their body weight and dosed accordingly in order to avoid under- or over-dosing.

The timing for treatment should be based on epidemiological factors and should be customised for each individual farm. As with other anthelmintics, veterinary advice should be sought on appropriate dosing programmes and stock management to achieve adequate parasite control and reduce the likelihood of resistance developing.

Suitable for use with most types of standard drenching equipment.

Shake well before use.

Withdrawal periods:

Meat and offal: 42 days

Not authorised for use in ewes producing milk for human consumption including during the dry period. Do not use within 1 year prior to the first lambing in ewes intended to produce milk for human consumption.

Contraindications, warnings etc:

Do not use in animals with known hypersensitivity to the active substance or to any of the excipients.

Special warnings for target species:

Care should be taken to avoid the following practices because they increase the risk of development of resistance and could ultimately result in ineffective therapy:

- Too frequent and repeated use of anthelmintics from the same class, over an extended period of time.
- Underdosing, which may be due to underestimation of body weight, misadministration of the product, or lack of calibration of the dosing device (if any).

Suspected clinical cases of resistance to anthelmintics should be further investigated using appropriate tests (e.g. Faecal Egg Count Reduction Test). Where the results of the test(s) strongly suggest resistance to a particular anthelmintic, an anthelmintic belonging to another pharmacological class and having a different mode of action should be used.

Resistance to closantel has been reported in *Haemonchus* species outside the EU. The use of this product should be based on local (regional, farm) epidemiological information about susceptibility of nematodes and recommendations on how to limit further selection for resistance to anthelmintics.

Special precautions for use

1. Special precautions for use in animals:

When using a drenching gun, take care not to injure the mouth or pharynx.

Do not exceed the stated dose.

The product can be used in all age groups of sheep and lambs.

2. Special precautions to be taken by the person administering the veterinary medicinal product to animals:

This product may be irritating to skin and eyes and users should be careful not to accidentally splash it on themselves or others.

Wear nitrile rubber gloves when applying the product.

In case of accidental spillage onto skin or into eyes, rinse the affected area with large amounts of clean water. If irritation persists, seek medical advice immediately and show the package leaflet or label to the physician.

Wash hands after use.

Do not eat, drink or smoke while handling the product.

3. Other precautions:

Closantel is very toxic to dung fauna.

The risk to dung fauna can be reduced by avoiding too frequent and repeated use of closantel (and products of the same anthelmintic class) in sheep and lambs. Animals should not normally be treated in excess of three times a year with closantel.

Adverse reactions (frequency and seriousness)

None known.

Use during pregnancy, lactation or lay

The product can be used at any time during pregnancy. It can also be used in rams at any time including during the breeding season. The safety of the product for use during lactation has not been established.

Interaction with other medicinal products and other forms of interaction

None known.

Overdose (symptoms, emergency procedures, antidotes), if necessary

Symptoms of acute overdosage are decreased vision or blindness, anorexia, in-coordination and general weakness.

Incompatibilities

In the absence of compatibility studies, this veterinary medicinal product must not be mixed with other veterinary medicinal products.

Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 2 years

Shelf life after first opening the immediate packaging: 28 days.

Special precautions for storage

Do not store above 30°C.

Keep the container in the outer carton in order to protect from light.

Store upright in the original container.

Nature and composition of immediate packaging

White high density polyethylene multidose container backpacks with high density polyethylene screw cap with induction-seal liners.

Pack sizes:

Box with 1 multidose container of 1 litre

Box with 1 multidose container of 2.5 litres

Box with 1 multidose container of 5 litres

Not all pack sizes may be marketed.

Special precautions for the disposal of unused veterinary medicinal product or waste materials derived from the use of such products

Closantel may affect aquatic organisms. Do not contaminate ponds, waterways or ditches with the product or empty containers.

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with local requirements.

Legal Category:

[POM-VPS] To be supplied only on veterinary prescription

For Animal Treatment Only

Keep out of sight and reach of children

Manufactured by:

Norbrook Laboratories Limited, Station Works, Camlough Road, Newry, Co. Down, BT35 6JP, Northern Ireland.

Distributed in the UK by: Norbrook Laboratories Limited, Carnbane Industrial Estate, Newry, Co. Down, BT35 6QQ, Northern Ireland.

Further information is available from Norbrook Laboratories.

Tel: UK 01536 741147

NI +44 (0)28 3026 4435

Email: enquiries@norbrook.co.uk



Norbrook®

www.norbrook.com

USE MEDICINES RESPONSIBLY. Prescription decisions are for the person issuing the prescription alone.

For further details on these products including the dosage regimens, side effects, precautions, warnings and contraindications please see the summary of product characteristics (SPC) available at www.vmd.defra.gov.uk/ProductInformationDatabase/Search
Advice on the use of these products should be sought from the medicine prescriber. | 3892-LA(S)-GB-v4b-14/02/25