

UplandsManagementGroup

VETERINARY MEDICINES FOR GRAZING LIVESTOCK

Currently available and used by Graziers
on the North York Moors

Please note that ticks and tick-borne diseases are a major challenge in the North York Moors but liver fluke, for instance, is not a common issue on moorland areas, so is not addressed in this guide.



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Details in this version correct at: February 2019
Please also check the up to date product labels to ensure your use of them is compliant.

All costs are very approximate having obtained only one quote in October 2018. They are intended as a rough guide only. No bulk discount or negotiation has taken place. MVF = Mole Valley Farmers online price.

Table of Contents

| | |
|---|----|
| POUR ONS FOR TICKS and other ectoparasites | 3 |
| 1 Dysect | 3 |
| 2 Spot-On..... | 4 |
| 3 Crovect..... | 5 |
| 4 Ectofly | 7 |
| NOTES ON POUR ONS FOR SHEEP | 8 |
| OP DIPS FOR TICKS & SCAB | 9 |
| 5 Gold Fleece | 9 |
| NOTES ON ORGANO PHOSPHATE SHEEP DIPS | 10 |
| SHEEP SCAB TREATMENTS..... | 11 |
| 6 Dectomax..... | 11 |
| 7 Cydectin..... | 12 |
| BLOWFLY POUR ON | 13 |
| 8 Vetrazin | 13 |
| 9 Clik..... | 14 |
| COCCIDIOSIS TREATMENTS | 15 |
| 10 Tolracol/Baycox | 15 |
| 11 Heptavac P Plus..... | 17 |
| 12 Ovovac P Plus..... | 18 |
| 13 Scabivax..... | 19 |
| 14 Toxovax (abortion)..... | 20 |
| 15 Enzovax | 21 |
| 16 Footvax | 22 |
| Appendix..... | 23 |
| 1 Things to look out for in the future..... | 23 |
| 2 Notes on intestinal parasites in sheep..... | 23 |
| 3 How long is Cypermethrin (Crovect or Ectoforce) effective? | 23 |
| 4 For further information | 24 |

Definitions

“Treatment” is defined as 99% or greater effectiveness.

“Protection” is synonymous with “control” – defined as 95% effectiveness

POUR ONS FOR TICKS and other ectoparasites

1 Dysect

| | |
|-------------------------------|---|
| Product name | Dysect (Zoetis) |
| Active ingredient | Alpha Cypermethrin |
| Chemical family | Synthetic Pyrethroid (S.P.) |
| Mechanism of Action | Neurotoxin. Absorbed through skin into sheep's bloodstream and kills biting parasites when feeding. |
| Effective against | Tick: Control (i.e. protection or 95% killed) 8-12 weeks Lice: treatment (i.e. 99% killed) Blowfly: protection (8-10 weeks). Headfly: reduces (6 weeks). |
| Not effective against | Sheep scab (<i>Psoroptes ovis</i>) |
| Approximate cost | MVF 2018 £63.75 per 5 litre = 50p per ewe |
| Dose | 40ml for ewes (>25kg) 5-10ml lambs (<25kg) |
| Compatible with | Oral and injectable wormers. Vaccines. Minerals. |
| Not compatible with | Clik, Vetrazin. |
| Withdrawal periods | 28 days (meat) |
| Environmental concerns | Highly toxic to fish, bees and aquatic insects. |
| Other comments | <ul style="list-style-type: none"> • Not for use on lambs < 1 week old. • Must use correct applicator. • Needs fleece length > 1cm (cannot be used "off shears"). • Variable period of efficacy – sheep have been known to get Louping Ill 6 weeks after treatment. |

2 Spot-On

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| Product name | Pfizer Spot-On (Zoetis) |
| Active ingredient | Deltamethrin |
| Chemical family | Synthetic Pyrethroid (S.P.) |
| Mechanism of Action | Neurotoxin. Absorbed through skin into sheep's bloodstream and kills biting parasites when feeding, can also kill by contact. |
| Effective against | Ticks – useful control 6 weeks. Lice and keds – reduced incidence over 4-6 weeks. Blowfly – for the treatment of established strikes only. |
| Not effective against | Scab Prevention of blowfly strike. |
| Approximate cost | MVF 2018 £70.30 per litre ex VAT 35p per ewe |
| Dose | Ewes 5mls Lambs (<10kg)2.5mls |
| Compatible with | Oral and injectable wormers. Vaccines. Minerals. |
| Not compatible with | Clik, Vetrazin. |
| Withdrawal periods | 35 days (meat) |
| Environmental concerns | Highly toxic to fish, bees and aquatic insects. |
| Other comments | <ul style="list-style-type: none"> • Must be applied directly to skin. • Not for use on lambs < 1 week old due to risk of mis-mothering. • Can be used “off shears”. • SCOPS (Sustainable Control of Parasites in Sheep) report possible resistance of ticks to Deltamethrin. • If there has been much use of Crovect/Ectoforce such that concerns are rising regarding possible resistance by ticks on your heft to them (i.e. the chemical Cypermethrin) then, considering Spot-On claims useful control for 6 weeks, which compares well with the actual Rosedale Crovect Field Trial (which showed effectiveness for only 4-6 weeks) Spot-On could be a useful replacement for Crovect/Ectoforce in part of the years treatment programme. This would also reduce the likelihood of ticks developing resistance to Cypermethrin which means it will be still available as an effective product on your heft area for longer. |

3 Crovect

| | |
|-------------------------------|--|
| Product name | Crovect 1.25% solution for sheep (Novartis) |
| Active ingredient | Cypermethrin |
| Chemical family | Synthetic Pyrethroid (S.P.) |
| Mechanism of Action | Neurotoxin. Absorbed through skin into sheep's bloodstream and kills biting parasites when feeding, may also kill by contact. |
| Effective against | Ticks – treatment (99% kill) and control (95% kill) up to 10 weeks. See Note below re Field Trial showing effectiveness was only 4-6 weeks. Killed within 3 hours. Biting Lice: treatment Blowfly: treatment and prevention (6-8 weeks). Headfly: treatment and control (4 weeks). |
| Not effective against | Scab |
| Approximate cost | MVF 2018 £72.50 ex VAT (5 litres) 58p per ewe (based on 40mls dose per ewe) |
| Dose | Ewes : up to 40ml depending on ectoparasite Lambs <10kg: 5ml Please refer to data sheet for different doses and method of administration as this differs depending on aim of treatment. |
| Compatible with | Oral and injectable wormers. Vaccines. Minerals. |
| Not compatible with | Clik, Vetrazin. |
| Withdrawal periods | 8 days (meat) |
| Environmental concerns | Highly toxic to fish, bees and aquatic insects. |
| Other comments | <ul style="list-style-type: none"> • Not for use on lambs < 1 week old. • Must use correct applicator. • Can be used “off shears”. <p>Crovect can be used off shears and as such will be effective against ticks and lice. However, for the control of blowfly it is recommended to wait for 2-4 weeks after clipping to allow a regrowth of wool to allow the chemical to be held in the lanolin on the wool fibres rather than the sebum (fat/oil layer) on the surface of the skin.</p> <p>This difference arises because the Crovect only prevents blowfly strike on areas actually covered by the chemical spray; hence the fan spray should be used to apply Crovect</p> |

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| | <p>along the back and around the hind quarters from a distance of around 20cm.</p> <p>Because lice and sheep ticks, before attachment, are migratory on the skin surface, a single pinstream application, off shears, from the crown of the head to the top of the rump will be sufficient to give control of sheep ticks for up to 9 weeks (but note below re Rosedale Field Trial only showed effectiveness for Crovect for 4-6 weeks against ticks).</p> |
| <p>Notes on application</p> | <p>The application of Crovect depends on the target parasite being prevented against.</p> <p>LICE Straight nozzle gun apply as a pin stream from the shoulders to the rump along the middle of the backline.</p> <p>TICKS gun apply as a pin stream from the <u>crown of the head to the top of the rump.</u></p> <p>HEADFLY 5 ml per animal irrespective of size. Apply to the top of the head between the ears, using the T-bar nozzle.</p> <p>BLOWFLY Apply as a fan-spray to the surface of the fleece on the back and hindquarters of the sheep using a recommended Crovect applicator gun fitted with a fan spray nozzle. Half the dose should be applied on the shoulders, back and flanks and half to the rump. The distance between the nozzle and the fleece should be approximately 20 cm. Only the areas covered by spray will be protected against blowfly strike.</p> <p>TREATMENT OF BLOWFLY STRIKE The T-bar nozzle should be used. Most strikes will require 5–10 ml. Ensure that all affected parts are treated. A single application is sufficient to ensure that larvae are expelled and killed within a few hours.</p> |
| <p>How long is Cypermethrin effective?</p> | <p>See item 3 in the Appendix for a description of some field trials.</p> |

4 Ectofly

| | |
|-------------------------------|--|
| Product name | Ectofly (Bimeda) |
| Active ingredient | Cypermethrin |
| Chemical family | Synthetic Pyrethroid (S.P.) |
| Mechanism of Action | Neurotoxin. Absorbed through skin into sheep's bloodstream and kills biting parasites when feeding, may also kill by contact. |
| Effective against | Ticks – treatment. Biting Lice: treatment Blowfly: treatment and prevention Headfly: treatment and control. |
| Not effective against | Scab |
| Approximate cost | MVF 2018 £72.50 ex VAT (5 litres) 58p per ewe (based on 40mls dose per ewe) |
| Dose | Lice -5ml per 10kg up to a maximum of 20ml Ticks - 10ml per 20kg (up to a max of 40mls) Blowfly (Prevention) 30ml per 25-40kg Blowfly (Treatment) 2.5ml per 100-150cm ² (roughly size of a hand) |
| Compatible with | Oral and injectable wormers. Vaccines. Minerals. |
| Not compatible with | Any other topical parasiticides. |
| Withdrawal periods | 8 days (meat) |
| Environmental concerns | Highly toxic to fish, bees and aquatic insects. |
| Other comments | <ul style="list-style-type: none"> • Do not use in lambs less than one week old due to risk of mis-mothering. • Not for lambs under 12.5kg when used to prevent blowfly strike. • Avoid treating very young lambs if the weather is unseasonably hot. |
| Notes | Is the identical product to CROVECT so should last same length of time as a tick/ prevention (up to 9/10 WEEKS) but note the field trial in Rosedale showing effectiveness was only 4-6 weeks. At this time the manufacturer has not obtained a licence for tick/lice prevention only for treatment. |

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| | As for Crovect, application method differs depending on the protection required. See above for details, and always read the data sheet before use. |
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NOTES ON POUR ONS FOR SHEEP

- 1 As with plunge dipping it is likely that the duration of action of pour-ons with regard to preventing tick infestation is dependent on a number of factors. Fleece length at application, application technique, amount of heavy rain encountered, amount of UV (very sunny weather) are all likely to influence duration of action.
- 2 It would be wise to use manufactures claims only as a rough maximum guide to the frequency of application needed. A sample of sheep, in areas where ticks are known to be active, could be checked every couple of weeks for evidence of infestation and the product reapplied as required. (In one recent study ticks were found on sheep treated with Dysect as soon as 6 weeks post application.)
- 3 Can Pour-Ons act as a repellent? By far and away the mechanism of action of pour-ons is death of the tick. A repellent action cannot be ruled out but the manufacturers have not been able to detect a significant enough effect to warrant mentioning.

OP DIPS FOR TICKS & SCAB

5 Gold Fleece

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|-------------------------------|---|
| Product name | Osmonds Gold Fleece Sheep Dip (Bimeda) |
| Active ingredient | Diazinon |
| Chemical family | Organo Phosphate (OP) |
| Mechanism of Action | While migrating through the fleece, parasites come into contact with the active ingredient, which is lipophilic and therefore easily penetrates the cuticles of insects and acarines, which causes paralysis of parasites and death. It does not need to bite the sheep to be killed. |
| Effective against | Sheep scab (Psoroptes ovis) Blowfly Strike Ticks Keds Lice |
| Not effective against | Intestinal worms |
| Approximate cost | 2009: £200 per 5 litre = 20p per ewe, unable to find more accurate pricing |
| Dose | 8 x 60ml per 96 sheep (480ml) |
| Compatible with | Should be used alone. Should not be used with oral and injectable wormers (unless you wait 14 days), or Copper sulphate footbaths. |
| Withdrawal periods | 49 days (meat) |
| Environmental concerns | Highly toxic to people, other animals and wildlife. |
| Other comments | At least one person aiding in the dipping process should hold qualification to do so. See notes at the end of this document. Read the data sheet very carefully, correct concentration of dip should be used and should be replenished at regular intervals. Do not shear sheep within 3 months of dipping. Shawn sheep need 3 weeks + wool growth. Post dipping lameness and disposal of used dip wash can be a problem, due to its environmental impact. OP's cannot be used on organic sheep. |

NOTES ON ORGANO PHOSPHATE SHEEP DIPS

- 1 It still remains that the three sheep dips available that are effective against ticks contain the Organo-phosphate (OP), 'Diazinon'. **Diazinon has a recommended duration of activity against tick of 6 weeks.** This, however, is variable depending on:
 - Length of fleece at dipping.
 - Correct mixing of dip.
 - Correct dipping technique.
 - Correct topping up of dip.
 - Weather conditions subsequent to dipping. (Prolonged heavy rain will strip dip from the fleece and can reduce duration of activity to 2-3 weeks.)
- 2 Given the above factors and the variable duration of activity of OP sheep dips, it may be helpful to check a representative number of sheep (10 per 100 would be sufficient) every few weeks, for signs of ticks and mites, and re dip, as necessary.
- 3 Under current legislation, you will need a 'Certificate of Competence for the safe use of sheep dips'. The legislation states that at least one person involved in dipping sheep needs to have attained this qualification. This is obtained after a one-day course involving practical and theory sessions, and a short test involving use of personal protective equipment (PPE). To find out more about this course, please visit <https://www.cafre.ac.uk/short-courses/safe-use-sheep-dips/>.
- 4 These regulations have come into play for various reasons including (but not limited to), dangers to human health and environmental concerns. OP toxicity was a common and sometimes fatal occurrence in agricultural workers using OPs. Signs of toxicity include muscle weakness, fatigue, cramps and paralysis. Environmental impact of OP dips are mainly due to its highly water soluble properties. When using OPs for dipping sheep, it is likely that residues will fall off the animals, people and equipment being used, or it may spill. These residues may then access water courses and are toxic to aquatic life and other wildlife species.
- 5 The use of **Scalibor collars** (produced by MSD animal health, intended for use on dogs to repel biting parasites, including ticks) in the place of OP dips and pour ons was trialled, however due to the risk of such collars falling off, breaking or getting into the environment (especially water courses) when sheep die, the risk of their use in moor sheep was deemed too high. No company is progressing action to bring this sort of product to market.

SHEEP SCAB TREATMENTS

6 Dectomax

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| Product name | Dectomax injection for sheep |
| Active ingredient | Doramectin |
| Chemical family | Ivermectin (Macrocyclic Lactone) |
| Mechanism of Action | Causes paralysis of parasites and death |
| Effective against | Sheep scab (Psoroptes ovis) Roundworms Lungworms Nasal bots |
| Not effective against | Ticks |
| Approximate cost | MVF 2018 £195.15 for 500mls (ex VAT) Approx. 93p per ewe |
| Dose | Scab : 1ml per 33kg Worms : 1ml/50kg |
| Compatible with | Heptavac, some other vaccines (check data sheet), minerals. |
| Withdrawal periods | 70 days (meat) |
| Environmental concerns | Highly toxic to dogs (especially collie/sheepdog types) |
| Other comments | Wide safety margins Safe in pregnant ewes Single use effective against sheep scab |
| Notes | Resistance to doramectin (an avermectin) has been reported in <i>Teladorsagia</i> and <i>Haemonchus</i> (roundworms) in sheep within the EU |

7 Cydectin

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|-------------------------------|---|
| Product name | Cydectin 1% injection for sheep. |
| Active ingredient | Moxidectin |
| Chemical family | Avermectin |
| Mechanism of Action | Causes paralysis of parasites and death |
| Effective against | Sheep scab (Psoroptes ovis) Roundworms Lungworms Nasal bots |
| Not effective against | Ticks |
| Approximate cost | MVF 2018 £195.15 for 500mls (ex VAT) Approx. 93p per ewe |
| Dose | Scab : 1ml per 33kg Worms : 1ml/50kg |
| Compatible with | Heptavac, some other vaccines (check data sheet), minerals. |
| Withdrawal periods | 70 days (meat) |
| Environmental concerns | Highly toxic to dogs (especially collie/sheepdog types) |
| Other comments | Wide safety margins Safe in pregnant ewes Single use effective against sheep scab |
| Notes | Resistance to doramectin (an avermectin) has been reported in <i>Teladorsagia</i> and <i>Haemonchus</i> (roundworms) in sheep within the EU |

BLOWFLY POUR ON

8 Vetrazin

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| Product name | Vetrazin Pour on (Novartis) |
| Active ingredient | Cyromazine |
| Chemical family | Insect Growth Regulator (IGR) |
| Mechanism of Action | IGRs act by inhibiting insect life cycles. |
| Effective against | Blowfly protection for 8-10 weeks |
| Not effective against | Ticks Lice Keds and established strikes. |
| Approximate cost | £129 5litres (ex VAT) 77p per lamb |
| Dose | 30ml per lamb 21-30kg. see data sheet for full range of doses. |
| Compatible with | Oral and injectable wormers. Vaccines. Minerals. |
| Not compatible with | Any other topical parasiticides. |
| Withdrawal periods | 3 days (meat) |
| Environmental concerns | Dangerous to aquatic life. Do not contaminate ponds, waterways or ditches with the product or empty container |
| Other comments | Must use correct applicator. Dag ewes and lambs prior to application. Water based therefore do not apply if rain expected – can be very prone to being washed out. Can use 50% dose for prevention of tail and crutch strike only(use on these areas alone) Apply before start of fly activity. |
| Notes | Where experience shows that animals are susceptible to tail/crutch strikes only and body strikes are not a problem, protection against fly strike in the tail/crutch area can be achieved by applying Vetrazin Pour-on to this area alone. Vetrazin Pour-on is for prevention of blowfly strike and should be applied before an anticipated blowfly challenge. Retreatment may be necessary every 8-10 weeks under conditions of extreme blowfly challenge. |

9 Clik

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|-------------------------------|--|
| Product name | Clik 5% pour on solution |
| Active ingredient | Dicyclanil |
| Chemical family | Insect Growth Regulator (IGR) |
| Mechanism of Action | IGRs act by inhibiting insect life cycles and prevent an insect from reaching maturity by interfering with the molting process |
| Effective against | Blowfly protection for 16 weeks |
| Not effective against | Ticks Lice Keds and established strikes. |
| Approximate cost | £176.10 5 litres (ex VAT) 88p per lamb |
| Dose | 25ml per lamb 21-30kg. see data sheet for full range of doses. |
| Compatible with | Oral and injectable wormers. Vaccines. Minerals. |
| Not compatible with | Any other topical parasiticides. |
| Withdrawal periods | 40 days (meat) |
| Environmental concerns | Dangerous to aquatic life. Do not contaminate ponds, waterways or ditches with the product or empty container |
| Other comments | Do not shear sheep in the 3 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 coveralls and Wellington boots. If sheep are wet also wear waterproof trousers and coat. Safety has not been proven during pregnancy, however studies have not shown any adverse affect on any other species. Must use correct applicator. Dag ewes and lambs prior to application. Water based therefore do not apply if rain expected – can be very prone to being washed out. Apply before start of fly activity. |
| Notes | Clik Pour-on is for prevention of blowfly strike and should be applied before an anticipated blowfly challenge. Retreatment may be necessary every 16 weeks under conditions of extreme blowfly challenge. |

COCCIDIOSIS TREATMENTS

10 Tolracol/Baycox

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| Product name | Tolracol/Baycox (Krka/Bayer) |
| Active ingredient | Toltazuril |
| Chemical family | Anti-coccidial |
| Mechanism of Action | Toltazuril is effective against 2 pathogenic species of coccidian. It acts by interfering with division of the coccidia. |
| Effective against | E. crandalis and E. ovinoidalis |
| Not effective against | Anything else. |
| Approximate cost | £148.15 1litre Approx. £2.24 per 15 kg lamb. |
| Dose | 4ml per 10kg. |
| Compatible with | Wormers, pour ons, vaccines etc. |
| Not compatible with | Nothing, no compatibility studies have been undertaken. |
| Withdrawal periods | 42 days (meat) |
| Environmental concerns | Dispose of any waste carefully |
| Other comments | Coccidiosis is transmitted through contaminated bedding/environment. Improving hygiene will concomitantly improve transmission and clinical signs of coccidiosis. Treat lambs then turn out/move to clean areas. Wide safety margin. Shake well before use. Inactivated by frost? Sheep coccidiosis is separate from avian (pheasant) coccidiosis. It is not thought that avian coccidian species can infect lambs (and vice versa). Only really relevant to lambs being kept on in byre. Sheep on moor unlikely to suffer from coccidiosis. |
| Notes | During an outbreak all lambs in the group should be treated. Due to likely environmental contamination there is little use in treating affected animals only. If treatment is not effective there is likely resistance or coccidiosis may not be the cause of clinical signs. In this instance faecal samples should be sent to your vets. |

11 Vecoxan

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|-------------------------------|--|
| Product name | Vecoxan (Elanco) |
| Active ingredient | Diclazuril |
| Chemical family | Anti-coccidial |
| Mechanism of Action | Diclazuril is effective against 2 pathogenic species of coccidian in sheep. It acts by interfering with division of the coccidia. |
| Effective against | E.crandalis and E. ovinoidalis |
| Not effective against | Anything else. |
| Approximate cost | £121.75 1litre |
| Dose | 4ml per 10kg. Approx £1.33 per 6kg lamb |
| Compatible with | Wormers, pour ons, vaccines etc. |
| Not compatible with | Nothing, no compatibility studies have been undertaken. |
| Withdrawal periods | None |
| Environmental concerns | Dispose of any waste carefully |
| Other comments | <p>Coccidiosis is transmitted through contaminated bedding/environment. Improving hygiene will concomitantly improve transmission and clinical signs of coccidiosis. Treat lambs then turn out/move to clean areas.</p> <p>Wide safety margin. Shake well before use. Inactivated by frost? Sheep coccidiosis is separate from avian (pheasant) coccidiosis. It is not thought that avian coccidian species can infect lambs (and vice versa). Only really relevant to lambs being kept on in byre. Sheep on moor unlikely to suffer from coccidiosis.</p> |
| Notes | <p>During an outbreak all lambs in the group should be treated. Due to likely environmental contamination there is little use in treating affected animals only.</p> <p>If treatment is not effective there is likely resistance or coccidiosis may not be the cause of clinical signs. In this instance faecal samples should be sent to your vets.</p> |

VACCINES

11 Heptavac P Plus

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|-------------------------------|---|
| Product name | Heptavac P Plus |
| Immunises against | 6 types of clostridial bacteria Mannheimia haemolytica and Pasteurella trehelosi (pneumonia) |
| Effective against | Clostridial disease including tetanus, braxy, blackleg, pulpy kidney and lamb dysentery in ewes and lambs to 8-10 weeks of age. Pasteurella in ewes and lambs to 4 weeks of age. |
| Not effective against | Anything not stated above. |
| Approximate cost | £39.25/100ml (50 doses) £1.27 per injection per ewe |
| Dose | 2ml per dose. Primary course is 2 injections 4-6 weeks apart |
| Compatible with | Wormers, pour ons, vaccines, mineral etc. |
| Not compatible with | Footvax. Other vaccines, as heptavac cover 8 pathogens we recommend not using any other vaccines at the same time. No information on specific products is available, therefore use with caution with other products. |
| Withdrawal periods | None |
| Environmental concerns | Dispose of any waste carefully |
| Other comments | Not effective if lambs are less than 3 weeks of age or the primary course is not completed correctly. avoid vaccination of animals which have intercurrent infection or metabolic disorder. As with most killed vaccines, significant levels of immunity cannot be expected until two weeks after the second dose of vaccine in the primary vaccination course. When handling sheep, stress should be avoided, particularly during the later stages of pregnancy when there is a risk of inducing abortion and metabolic disorders Strict aseptic technique should be followed to avoid injection site reactions. |
| Notes | Primary course must be completed, 2 nd vaccination within 4-6 weeks of first. Revaccination of ewes should occur before lambing period when possible, ensuring best possible colostral antibodies for their lambs. Revaccination at 12 monthly intervals. |

12 Ovivac P Plus

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|-------------------------------|--|
| Product name | Ovivac P Plus |
| Immunises against | 4 types of clostridial bacteria Mannheimia haemolytica and Pasteurella trehelosi (pneumonia) |
| Effective against | Clostridial disease including tetanus, braxy, blackleg, pulpy kidney and lamb dysentery in ewes and lambs to 8-10 weeks of age. Pasteurella in ewes and lambs to 4 weeks of age. |
| Not effective against | Anything not stated above. |
| Approximate cost | £39.25/100ml (50 doses) £1.27 per injection per ewe |
| Dose | 2ml per dose. Primary course is 2 injections 4-6 weeks apart |
| Compatible with | Wormers, pour ons, vaccines, mineral etc. |
| Not compatible with | Footvax. Other vaccines, as heptavac cover 8 pathogens we recommend not using any other vaccines at the same time. No information on specific products is available, therefore use with caution with other products. |
| Withdrawal periods | None |
| Environmental concerns | Dispose of any waste carefully |
| Other comments | Not effective if lambs are less than 3 weeks of age or the primary course is not completed correctly. Avoid vaccination of animals which have intercurrent infection or metabolic disorder. As with most killed vaccines, significant levels of immunity cannot be expected until two weeks after the second dose of vaccine in the primary vaccination course. When handling sheep, stress should be avoided, particularly during the later stages of pregnancy when there is a risk of inducing abortion and metabolic disorders Strict aseptic technique should be followed to avoid injection site reactions. |
| Notes | Primary course must be completed, 2 nd vaccination within 4-6 weeks of first. Revaccination of ewes should occur before lambing period when possible, ensuring best possible colostral antibodies for their lambs. Revaccination at 12 monthly intervals. |

13 Scabivax

| | |
|-------------------------------|--|
| Product name | Scabivax (MSD) |
| Immunises against | Orf (pox virus) |
| Not effective against | Anything other than skin disease caused by orf. |
| Approximate cost | £37.50/100ml (50 doses) £0.75 per injection per ewe |
| Dose | Scratch vaccine. 0.02ml by skin scarification. |
| Compatible with | Wormers, pour ons, vaccines, mineral etc. |
| Not compatible with | Any other vaccines as is a live vaccine. Not on farms where Orf is not a problem. |
| Withdrawal periods | None. |
| Environmental concerns | Dispose of any waste carefully. |
| Other comments | <p>Should never be used on farms where Orf is NOT a problem. Must be given using the correct scabivax applicator. Can introduce the disease to a naïve flock Apply vaccine only to the intended site and nowhere else eg, mouth/lips/superficial wounds. If vaccinated before lambing, ewes should not be moved to proposed site of lambing until after scabs have dropped off (7 weeks approx..) therefore Do not vaccinate ewes less than 7 weeks before lambing.</p> <p>Before scabs drop off ('take') ewes should not be;</p> <ul style="list-style-type: none"> • marketed, shorn or slaughtered • allowed access to lambing pens or pasture where ewes and their lambs will subsequently be grazed; • allowed to come into contact with unvaccinated sheep <p>Do not vaccinate in wet weather</p> |
| Notes | <p>Ewes should be vaccinated behind the elbow or in the axilla, not in the groin as this is more likely to transit the disease to lambs when suckling. Can cause skin disease in people – care must be taken when vaccinating!</p> |

14 Toxovax (abortion)

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| Product name | Toxovax (MSD) |
| Immunises against | Toxoplasma gondii , and associated clinical signs, namely early embryonic death, barrenness and abortion. |
| Not effective against | Anything other than clinical signs caused by toxoplasmosis |
| Approximate cost | £99 (ex VAT) for 20 doses Approx £4.95 per ewe |
| Dose | 2ml by IM injection. |
| Compatible with | Wormers, pour ons, vaccines, mineral etc. |
| Not compatible with | Any other vaccines (except enzovax). |
| Withdrawal periods | Meat: 6 weeks. |
| Environmental concerns | Dispose of any waste carefully. |
| Other comments | <p>Single dose at least 3 weeks prior to mating</p> <p>Ewe lambs may be vaccinated from 5 months of age where it is intended to breed off them.</p> <p>Re vaccination after 2 years.</p> <p>ewes who have suffered toxoplasmosis abortion probably do NOT get immunity and can therefore repeat abortion due to this in future pregnancies. Therefore culling ewes which have suffered may be advisable.</p> <p>The life cycle of toxoplasma relies on the presence of cats. Cats are the ‘definitive host’ of toxoplasma (it hosts the adult form of the parasite) and they excrete the oocysts (eggs) in their faeces, which sheep then ingest). Therefore cat population control (eg. neutering) and reducing frequency of cats defecating in or near feedstuffs (can even survive for periods in hay) will reduce the transmission of toxoplasmosis to sheep.</p> |
| Notes | <p>Do not use during pregnancy</p> <p>Can be spread to people (zoonotic)</p> <p>Should not be handled by pregnant women</p> |

15 Enzovax

| | |
|-------------------------------|---|
| Product name | Enzovax (MSD) |
| Immunises against | To reduce signs of Enzootic abortion (<i>Chlamydophila abortus</i>), particularly abortion. |
| Not effective against | Anything other than clinical signs caused by enzootic abortion. |
| Approximate cost | £45.77 (ex VAT) for 20 doses Approx £2.20 per ewe |
| Dose | 2ml by IM injection. |
| Compatible with | Wormers, pour ons, vaccines, mineral etc. |
| Not compatible with | Any other vaccines (except toxovax NB do NOT use in the same injection!) |
| Withdrawal periods | Meat: 6 weeks. |
| Environmental concerns | Dispose of any waste carefully. |
| Other comments | Single dose at least 3 weeks prior to mating Ewe lambs may be vaccinated from 5 months of age where it is intended to breed off them. Re vaccination after 3 years. (studies have shown that abortion levels stay low after even 4 years) Ewes who have suffered enzootic abortion probably do get immunity and therefore should not be selected for culling because of enzootic abortion. |
| Notes | Do not use during pregnancy Can be spread to people (zoonotic) |

16 Footvax

| | |
|-------------------------------|---|
| Product name | Footvax (MSD) |
| Immunises against | To aid prevention of footrot and reduction of lesions of footrot caused by serotypes of <i>Dichelobacter nodosus</i> . |
| Not effective against | Any lameness caused by organisms other than <i>Dichelobacter nodosus</i> (footrot). Clinical signs may be improved if CODD present, due to occurrence of mixed infections. |
| Approximate cost | £59.30 (ex VAT) Approx. £1.18 per ewe |
| Dose | Two doses, 6 weeks apart by subcutaneous injection. The site for injection is on the side of the neck 2 – 3 inches behind the ear. |
| Compatible with | Nothing licensed. |
| Not compatible with | Any other vaccines! |
| Withdrawal periods | None |
| Environmental concerns | Dispose of any waste carefully. |
| Other comments | Gently warm in cold weather as this will aid administration. Do not administer in wet weather. Use for treating footrot : treat whole herd as soon as disease becomes apparent. Prevention of footrot: One dose given to whole herd, revaccination will be necessary at different intervals between flocks. If weather conditions are optimum and if disease prevalence is still high then revaccinating every 4-5months may be necessary. Do not vaccinate sheep within 6 – 8 weeks of shearing. Do not vaccinate ewes in the period of 4 weeks before lambing to 4 weeks after lambing. May result in severe pain and swelling if accidentally injected into a person. DO NOT use if Moxidectin 1% has been used previously. |
| Notes | It is important to get an accurate diagnosis of footrot from your vet. Mixed infections may be present and footvax will not be effective against foot lesions. Contagious Ovine Digital Dermatitis (CODD). CODD lesions start at the junction between the hoof and the hairy skin (coronary band) and work down the hoof wall. CODD lesions require treatment with specific antibiotics/footbaths. |

APPENDIX

1 Things to look out for in the future....

We have been made aware that drug companies are currently working on products for external parasite treatment, especially for ticks. The major drive is to market a product that will not be dangerous for the farm workers, or be damaging to the environment, but will provide effective and long-lasting tick treatment. Oral tick treatment for sheep based on the active ingredient Fluralaner (currently used in dogs, cats and chickens for external parasites) is the main up and coming drug which we hope to see licensed for veterinary use in sheep in the next couple of years. We are unable at this stage, however, to advise on when exactly this product will be available, but we would expect to see it in the next couple of years (2020 or 2021).

2 Notes on intestinal parasites in sheep

The main area not covered in this document, is the rational and sustainable control of endoparasites (intestinal worms and fluke). This document is aimed at moor flocks whilst they are on the moor and only very rarely do such flocks need this treatment. Weaned lambs may do once kept on in by. This is a very broad topic, however it is paramount that worming sheep against endoparasites is done in a sustainable and targeted way. The best resource to reference for worming sheep is the SCOPS (Sustainable Control of Parasites in Sheep). It is highly recommend visiting this site before choosing a wormer for your flock. Most vets (including Grace Lane Vets) will run in house faecal worm egg counts (FWECs) at the practice, whereby total worm egg count is performed, and decisions on the necessity of worming can be based on this.

3 How long is Cypermethrin (Crovect or Ectoforce) effective?

Field Trials of the efficacy of Crovect on a moor edge allotment in Rosedale, North York Moors, suggested effectiveness on such an exposed upland environment of only 4-6 weeks.

The trial was carried out by Dr Dave Newborn of the Game & Wildlife Conservation Trust in 2012 and 2013.

- 1 Sheep were randomly put into 2 groups each of 16-30 per group.
- 2 One group was treated with Crovect twice in the year. One group was not treated as a control. They were all grazed as one flock on the same area.
- 3 Sheep were gathered fortnightly from mid-April to early-October and a standardised search for ticks was undertaken on bare areas of skin at the top of both front and back legs and on the head. Note there would have been more ticks on the rest of their bodies covered in wool.
- 4 The Crovect group were retreated with Crovect in week 10 one year and week 12 the other.
- 5 After the first (April) treatment of Crovect the tick count was lower than on the untreated control group (but was still around 1-8 ticks per animal) for 2-4 weeks. There was no significant difference at 6 weeks.
- 6 But after the second treatment with Crovect in week 10/12 (i.e. around July) the tick counts were lower for 6 weeks (but not 8 weeks) but still had between 0 and 4 ticks per animal.
- 7 In all cases the control group had significantly more ticks per animal and ranged from an extra 40% to about 1000%!

- 8 Based on this North York Moors field trial it would seem unwise to expect Crovect / Ectoforce to provide useful control against ticks for more than 4 weeks on the first application in April/May and perhaps 6 weeks for a second application.
- 9 If it is used after lambing, in early May, it will mean re-gathering ewes and lambs in early June to retreat them, which will be a very inappropriate time to be gathering on the moor, due to nesting birds.
- 10 The only product currently which claims to have a minimum efficacy longer than this is Dysect (8 weeks minimum and up to 12 weeks).
- 11 Every day that a sheep is not protected by an acaricide product, gives ticks the opportunity to spread all their blood borne diseases to sheep and enables the adult female ticks to complete their life cycle and go onto lay 1000 eggs each to perpetuate the problem.

4 For further information

Please do not hesitate to contact us.