Skin parasites cause suffering, ill health and economic loss. The most significant parasites are:

- Sheep Scab
- Lice
- Blow fly
- Ticks
- Head fly
- Keds

When bringing new animals on to the farm assume they are carrying skin parasites and follow the guidance below to avoid infecting your whole flock:

1. Isolate new animals from the resident flock – keep in quarantine for 4 weeks
2. Treat with an injectable product effective against scab or dip in an organophosphate (OP) dip following manufacturer’s instructions
3. Check regularly for other diseases and treat as necessary
4. Call in your vet to inspect suspect sheep before mixing with the rest of the flock

If sheep show symptoms of skin parasites it is important to:

- Get an accurate diagnosis before treatment
- Give the correct dose rate if injecting or using a pour-on, or to dip for appropriate time in the correct dip concentration
- Follow the manufacturers guidelines exactly
- Maintain field boundaries and gates so that neighbouring stock cannot stray or make direct contact with your own

**Treatments**

There are many products on the market for treatment of skin parasites but get an accurate diagnosis before you waste money on the wrong one.

Dipping in an OP is the most effective treatment against all skin parasites of sheep.

The table below shows the effectiveness of the different methods of treating and preventing skin parasites:

<table>
<thead>
<tr>
<th></th>
<th>Dip (OP + SP)</th>
<th>Pour-on</th>
<th>Inject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheep Scab</td>
<td>Yes</td>
<td>NO</td>
<td>Yes</td>
</tr>
<tr>
<td>Lice</td>
<td>Yes</td>
<td>Yes</td>
<td>NO</td>
</tr>
<tr>
<td>Blow-fly</td>
<td>Yes</td>
<td>Yes</td>
<td>NO</td>
</tr>
<tr>
<td>Ticks</td>
<td>Yes</td>
<td>Yes</td>
<td>NO</td>
</tr>
</tbody>
</table>
Dipping

Two main types of insecticide are available for plunge dipping, diazinon, an organophosphate (OP), and synthetic pyrethroids (SP). Both require a certificate of competence for purchase. There are now closed transfer systems for dip concentrate which make handling the chemicals much safer to humans. Scab is becoming resistant to SPs and SPs have been found to be many more times damaging to the environment than OPs. Great care should be taken during the dipping process to avoid spent dip entering a watercourse and used dip should be disposed of according to Environment Agency guidelines. The dip chemicals are only licensed for plunge dipping.

Injectable Products

Injectable endectocides give good results, but accurate dosing is essential. It is important to remember that the injectable products are only effective against scab, not the other ectoparasites. Length of protection is short, and for full effectiveness the sheep need to be moved to a pasture that has not carried sheep for 16 days between the two treatments. All the injectable products have long withdrawal times (42 to 70 days).

Pour-ons

A range of products exists for treatment of lice, blow fly, head-fly and ticks. Insect growth regulators have proven efficacy against blow fly but not lice and ticks. Depending on the product used, protection may last for up to 16 weeks.

Include ectoparasite control in your flock health plan and consult with your vet on the most appropriate treatments for your sheep.

Useful references:

Sheep Scab – A Farmers’ Guide – Defra Publications PB4622-E.
Veterinary Medicinal Products authorised in the UK for use against ectoparasites in sheep. Available from VMD (Veterinary Medicines Directorate) or on-line at www.vmd.gov.uk
Worms

Gut worms cause serious health and welfare problems to sheep throughout the UK. They restrict performance of growing lambs and reduce financial returns from sheep farming.

To limit the losses associated with gut worms and to retain effective products to treat the disease follow the guidance below:

- Only drench ewes at lambing (unless you have a problem with *Haemonchus*), the period when their immunity to worms is at its lowest. This reduces the worm eggs put out on the pasture, reducing the worm challenge to young lambs.

- Check if you need to worm. Try to avoid routine dosing of lambs every 3 to 4 weeks and ask your vet about Faecal Egg Counts (FEC). You may save yourself time and money! The exception is *N. battus*. Discuss with your veterinary surgeon the risks and whether you will have to treat lambs at this age.

- Dose and drench correctly. Weigh some animals before dosing and ideally dose to the heaviest animal in the group. Make sure that the drench is given over the back of the tongue. Incorrect dosing has speeded up the development of anthelmintic resistance.

- Withholding feed for 12 to 24 hours prior to drenching with an oral ‘white’ benzimidazole (1-BZ) or clear macrolide (3-ML) wormer will invariably improve the effectiveness of the drug. (Do not withhold feed from ewes in late pregnancy).

- Check if the treatment has been effective. Ask your vet about a Faecal Egg Count Reduction Test.

- Quarantine all new animals coming on to the farm and treat sequentially with an avermectin (3-AV) and a levamisole (2-LV) type wormer at full dose. Do not mix the products before treating the sheep. Hold these animals inside for 2 days before allowing to graze.

- Adopt an annual (not more frequently) rotation of wormer type between benzimidazole (1-BZ), 2-LV and 3-AV classes of drugs.

- Manage pastures to reduce the worm burden facing grazing lambs. Make use of mixed grazing with cattle and try to create ‘safe’ pastures for susceptible lambs.

- Calibrate guns, clean after use.

Planned control programmes combining safe grazing with minimal drug use are essential to prevent resistance developing further. Regular monitoring by faecal egg counts allows strategic dosing and stops unnecessary use of drugs.

Include parasite control in your flock health plan and review the plan on an annual basis. Ask your vet for professional advice.
Liver Fluke

Liver fluke has become a serious problem over the past few years as the UK climate has become milder and wetter; it is spreading east from the traditionally affected areas in the west. Adequate moisture and temperature are critical for completion of the fluke’s life-cycle. Incidence and levels of infection are influenced by rainfall from May to October and hence the highest risk of disease is in the western areas of the UK on poor draining soils.

In acute cases animals can die rapidly and chronic infection can cause significant loss of production. Typical signs of infection are loss of weight, anaemia and sometimes bottle jaw.

Effectively, treating and fencing off boggy areas and treating all new animals arriving on the farm will help reduce the risks.

**Liver cycle of the Liver fluke**

- Overwintered infective cysts on pasture eaten by sheep
- Infective stages shed from snails
- Snails are infected from carrier animals or overwintered eggs
- Adult fluke lay eggs
- Eggs passed in faeces

Effective Treatment

Control depends on strategic dosing with a flukicide effective against adult and immature stages of fluke, depending on disease forecasts. A typical dosing regime for sheep in an average rainfall season would be:

- Dose adult sheep in the spring (late April/May) to kill fluke burdens and reduce the deposition of fluke eggs on pasture
- Dose all sheep in autumn (October) and again in winter (January) with a flukicide effective against immature fluke
- More regular treatment may be necessary if the season is very wet
- Sheep brought in from fluke infested areas should be treated before they join the main flock

Fencing off boggy areas and treating all new animals arriving on the farm will help reduce the risks.