Worm control in sheep for Better Returns
Worm control in sheep

- Dependence on anthelmintics/wormers has increased
- Heavy use and misuse of relatively cheap products has led to development of resistance
- The industry must act NOW so worms can be effectively controlled in future

Sustainable Control of Parasites in Sheep (SCOPS)
An industry-led group formed to develop sustainable strategies for parasite control in sheep scops.org.uk
Effect of worms on lambs

Heavy worm burdens result in stunted lambs or even death.

How worm burdens affect lambs

- **Depressed appetite** reduces feed intake and growth rate.
- **Permanent gut damage** reduces nutrient absorption and causes diarrhoea.
- **Impaired mineral retention** causes a small skeleton and exacerbates trace element deficiencies.
- **Poor protein metabolism** reduces muscle growth and carcase quality.
Worm control plan

Sheep farmers should not rely on anthelmintics only.

There needs to be:

- A long-term worming strategy that is regularly reviewed
- Grazing management to avoid high worm burdens
- Use of regional forecasts and warnings
- Monitoring of worm burdens

Worms should not be imported onto the farm.

All treatments should be tested to make sure they are working.
Worm life cycle

- It takes 16–21 days for ingested larvae to develop into egg-laying adults.
- Adult worms lay eggs.

Free-living stages (outside the sheep)
- Take 2–12 weeks to complete.
- 3rd stage larvae are infective. They migrate onto the grass and wait to be eaten by sheep.
- Eggs pass out in the dung. In a FEC we count the numbers to indicate how many adults are in the gut of the sheep.
- In the autumn L3 may become dormant.
- 1st & 2nd stage larvae in dung.
Reducing pasture risk

Use a farm pasture risk map and allocate different classes of stock accordingly.

- Provide lowest risk pasture for weaned lambs
- Rotate sheep with cattle
- Avoid grazing below 4cm
- Graze dirty pastures with weaned ewes in good body condition
- Graze bioactive crops, eg. chicory, plantain
- Source or breed ewes selected for resistance to worms
Reducing wormer use in ewes

- Fit, healthy, mature sheep have good immunity to worms
- Routine treatment pre-tupping and around lambing is unnecessary
- Only treat ewes shedding a lot of worm eggs at lambing
- Leaving some ewes untreated reduces the risk of anthelmintic resistance
- Use Faecal Egg Counts (FECs) to monitor rise in egg output
Anthelmintic Resistance (AR)

- A worm is resistant when it can survive exposure to the recommended dose of an anthelmintic that would normally kill it.

- This means it is inherited by the next generation so when these worms are left alive in the sheep, the eggs shed in the dung will contain only resistant genes.

- Over time the proportion of the worms carrying these genes increases. Once the proportion rises above 50% the process is irreversible.
Anthelmintic Resistance (AR)

- In the UK, one or more of the three older, broad-spectrum chemical groups (1, 2, and 3) no longer kill all worms.
- Resistance builds up gradually and many farmers are unaware that their treatments are losing effectiveness.
Steps to halt AR

• Do not import problems – quarantine bought in stock and treat

• Effective treatment is essential – ensure the right product and right dose are administered correctly and test for resistance

• Avoid unnecessary treatments such as treating fit, mature ewes and practices that select heavily for resistance such as dosing and moving onto clean pastures
## Effective quarantine

<table>
<thead>
<tr>
<th>Step 1 – Yard</th>
<th>Step 2 – Treat</th>
<th>Step 3 – Quarantine</th>
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<tbody>
<tr>
<td>On arrival, yard or house sheep – do not put them directly on to pasture or in contact with other sheep.</td>
<td>As soon as possible, the sheep should be treated – the table below offers options based on whether or not sheep scab is a risk.</td>
<td>After 24–48 hours, turn out onto pasture that has carried sheep in the current season and keep isolated from the resident flock for at least three weeks.</td>
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Effective treatment

- Always weigh the group to be treated and use the dose recommended for the heaviest sheep
- Store products correctly
- Maintain dosing guns and injectors
- Choose the right products - *It is no longer a case of rotating between three groups of anthelmintics on an annual basis*

Two new groups – 4-AD and 5-SI are highly effective and resistance is rare. Take care to keep them working.

Use as a quarantine drench or one-off dose for all lambs in mid/late season.
Choose the right products

This diagram represents the proportion of farms in each category.
- **Green** = no resistance (<5% worms survive treatment)
- **Amber** = resistance is building
- **Red** = high resistance

**Group 1**
Benzimidazoles
(BZ)
White drenches
Status: Resistance can be found on most farms

**Group 2**
Levamisoles
(LV)
Yellow drenches
Status: Resistance less common than to BZ, but cases are increasing

**Group 3**
Macrocyclic-lactones
(ML)
Clear drenches
Status: Resistance is increasing year on year. It is no longer rare and includes cases of resistance to moxidectin

**Group 4**
Amino Acetonitrile Derivatives
(AD)
Orange drenches
Status: No resistance in the UK

**Group 5**
Multi-actives
(SI)
Purple drenches
Status: No resistance
Testing for AR

• Detecting AR at an early stage is essential

• A Drench Test can identify whether a product group is starting to lose effectiveness

• A reduction in Faecal Egg Count (FEC) of 90% or more means the drench has done its job

• If it is less than this, talk to the vet about other products to use
Avoid practices that select for resistant worms

- When sheep are correctly treated with anthelmintics, the only worms surviving will be resistant to the chemical group used.
- Do not turn treated animals onto clean pasture as the only eggs that will survive will be resistant. This is very dangerous.
- To avoid heavy selection for AR, there are two practical options: