Sheep Technology Adoption Programme 2013 - Terms & Conditions

REQUIREMENTS FOR TASK 3

The text in the Terms and Conditions is being replaced with the following text.

**Task 3** STAP

The objective of this measure is to carry out a STAP faecal test to help to establish if there is a level of parasite resistance to the commonly used anthelmintics (i.e. White drench; Benzimidazole (1-Bz), Yellow drench; Levamisole (2-LV) and clear drench / injection Macrocyclic Lactone (3-ML) (includes Ivermectin). This must be carried out between 1st June 2013 and 20th September 2013, in accordance with Appendix 1. This test is for Lambs only, not ewes.

Farmers must allow at least six weeks to elapse from any previous treatment with an anthelmintic until they start Stage 1.

Faecal sampling (Stages 1 to 3) & drenching of lambs must be carried out in accordance with the full procedure set out in [Appendix 1](#).

**Approved Laboratories**

The Regional Veterinary Laboratory Service of DAFM will not be providing testing services for this Task.

The list of laboratories and veterinary practices approved to test samples for STAP Task 3 can be found on the STAP webpage:


Procedures for laboratories in respect of this task is set out in [Appendix 2](#).
APPENDIX 1 – PROCEDURE FOR FARMERS

STAP FAECAL TEST INSTRUCTIONS

Stage 1 – Collect Faecal Samples

INSTRUCTIONS FOR FAECAL SAMPLING LAMBS

*NOTE:* All faecal samples collected must be fresh. Care should be taken not to include samples from adult sheep and that the same group of lambs are tested pre and post wormer treatment

1. Farmer must contact Laboratory requesting empty sample containers, and also arranging a payment procedure.

2. Place lambs (minimum of 15) in a clean pen. Leave them undisturbed for a couple of hours (to defecate). Remove lambs from pen.

3. Using gloves collect fresh faecal samples at random from at least 10 different faecal deposits and place them separately in the containers provided. (It does not matter what amount you collect as long it is more that a ‘teaspoonful’, is fresh and each sample is kept separate). Large amounts are not desirable either.

4. Place all filled containers in the plastic zip lock bag provided.

5. Complete form STAP 3A and put in envelope, along with zip lock bag of samples.

6. Put in the post as soon as possible, preferably on the day of sampling. If there is a delay in posting, then store the samples in a cool place preferably in a fridge (DO NOT FREEZE or PLACE IN DIRECT SUNLIGHT).

Stage 2 – treat sheep with anthelmintic

DOSING GUIDELINES

1. Choose an anthelmintic that you wish to use – See table 1.

2. Dose in accordance with manufacturer’s recommendations
3. Check calibration of dosing gun/syringe

4. Check expiry date of drug

5. Shake bottle/container well

6. Weigh the three heaviest lambs in the grazing group being tested

7. Dose all lambs at rates according to the weight of the heaviest lamb in the group.

8. Record the name of the product you used and which anthelmintic class it belongs to (see table 1 below)

**Table 1:**

Anthelmintic Groups (Note: There are now 4th & 5th generation drugs, but the purpose of this Task is to establish the level of resistance to the 3 main anthelmintic groups that have been in use on Irish farms for the last 30 – 50 years.)

<table>
<thead>
<tr>
<th>Class of wormer</th>
<th>Other name</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Benzimidazole (1-Bz)</td>
</tr>
<tr>
<td>Yellow</td>
<td>Levamisole (2-LV)</td>
</tr>
<tr>
<td>Clear</td>
<td>Macrocyclic Lactone (3-ML)</td>
</tr>
<tr>
<td></td>
<td>(includes Ivermectin)</td>
</tr>
</tbody>
</table>

**Stage 3 – Re-sample lambs post treatment to test efficacy of the anthelmintic used**

1. 7 to 14 days post drench, depending on the product used, gather the lambs for faecal sampling. Check Table 2 below

2. Place the same group (minimum of 15 lambs) in a clean pen. Leave them undisturbed for a couple of hours (to defecate). Remove from pen.
3. Using gloves collect fresh faecal samples at random from *at least* 10 different faecal deposits and place them separately in the containers provided. (It does not matter what amount you collect as long it is more than a ‘teaspoonful’, is fresh and each sample is kept separate. Large amounts are not desirable either.)

4. Place all filled containers in the plastic zip lock bag provided.

5. Complete form STAP 3A and put in envelope, along with zip lock bag of samples.

6. Put in the post as soon as possible, preferably on the day of sampling. If there is a delay in posting, then store the samples in a cool place preferably in a fridge (DO NOT FREEZE or PLACE IN DIRECT SUNLIGHT).

**Table 2:**

<table>
<thead>
<tr>
<th>Wormer groups</th>
<th>Timing of 2\textsuperscript{nd} sampling</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Benzimidazole (1-Bz)</td>
<td>14 days post treatment</td>
</tr>
<tr>
<td>Yellow Levamisole (2-LV)</td>
<td>7 days post treatment</td>
</tr>
<tr>
<td>Clear Macrocyclic Lactone (3-ML) (includes Ivermectin)</td>
<td>14 days post treatment</td>
</tr>
</tbody>
</table>

**Results:**

The laboratory will composite the samples received according to a standardised procedure to produce an average eggs/gram result for Stage 1 and Stage 2. These results will be reported to you and to DAFM after all procedures are complete (ie both sampling stages completed).

**Interpretation of results:**

The STAP page on the DAFM website will have a guide to interpreting the results of this Task and your vet and Teagasc adviser will be able to guide you in any management changes that are appropriate in year 2.
Form STAP 3A

Farmer Name__________________________________________

Address______________________________________________

Herd No______________________________________________

Flock Identifier________________________________________

STAP Discussion Group Name______________________________

Facilitator____________________________________________

Date of previous anthelmintic treatment _____________________

Sample Type (pre drench or post drench)____________________

Date sample taken_____________________________________

Anthelmintic used_____________________________________

Estimated Average Lamb weight in test group (kg)____________
APPENDIX 2: PROCEDURE FOR APPROVED LABORATORIES

Laboratories must be approved by DAFM to carry out testing under STAP Task 3.

Laboratories must comply with the following requirements to be approved to carry out testing under STAP Task 3:

- Demonstrate to DAFM that the laboratory is signed up to Vetqas PT0114 scheme
- Provide the laboratory’s details under the Vetqas PT scheme and the results of PTs to DAFM
- Email an excel file with all results at the end of each month with the laboratory reference number and the sample details contained in Form STAP 3A to: staptask3@agriculture.gov.ie
- Provide DAFM with a duplicate filtrate sample for 5% of samples tested, these samples should be posted to Kilkenny Regional Veterinary Laboratory
  Kilkenny Regional Veterinary Laboratory
  Leggatsrath
  Hebron Road
  Kilkenny

Task 3 is specifically for trichostrongyles

- the laboratory must be able to distinguish and provide a count for *Strongyloides papillosus* and *Nematodirus* eggs (if present) separate from other trichostrongyle eggs

Testing for other parasites, such as liver fluke, coccidia & rumen fluke, is not required for Task 3.

Laboratories must provide each farmer with 10 suitable screw cap plastic containers and a zip lock bag large enough to hold all 10 containers.

A rapid turnaround time for analysing and reporting each set of results is essential to give farmers confidence in the testing procedure - max 10 working days – ideally 48 hours after the Stage 2 samples.

The 10 samples from each sampling on each farm must be pooled into one composite sample using the procedure outlined below. Each composite sample should then be tested using the Modified McMaster method outlined below.
Procedure to produce a composite sample for testing in STAP task 3:

**Aim:** Prepare a composite sample from each farm so that each animal contributes the same unit weight (i.e. equivalent to the sample with the lowest weight) and mix well

1. Weigh 3 g of faeces (*see 6 below*) from each individual animal in a small container (e.g. petri dish)

   **Note:** Keep the remaining sample from each individual animal in case individual egg counts is required.

2. Pool all the samples into suitable large container and **mix thoroughly** (preferable to use a blender) to form a composite sample (for example if samples were submitted from 10 individual animals, you should now have a 30g composite sample)

3. Perform the following test on the on the composite sample

   a. Modified McMaster following standard protocol

4. For the Modified McMaster count the number of strongyle eggs per gram (this represent the egg count of the composite sample)

   **Note:** Also note the numbers of *Nematodirus battus* eggs and the presence of other species (i.e. *Moniezia, Strongyloides, Trichuris, coccidia oocysts or lungworm larvae*)

5. Since a minimum of 26 g of faeces is required to perform the test make sure that the minimum volume of composite sample is 26g. Therefore if samples are received from less than 6 animals, adjust the weight of faeces from each animal taken in step 1 above as follows.

<table>
<thead>
<tr>
<th>Number of individual animal samples received</th>
<th>Weight of faeces per sample to be mixed (g)</th>
<th>Total weight of composite sample (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>27</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>Value</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>-------</td>
<td>---</td>
<td>----</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>&gt;9</td>
<td>3</td>
<td>&gt;27</td>
</tr>
</tbody>
</table>

Testing of the composite sample must follow the following procedure:
Modified McMaster Technique

1. Place 42 ml of water in a 50ml graduated cylinder.

2. Mix the faecal sample thoroughly and add 3 grams by volume (equivalent to 3 ml).

3. Stir the mixture until an even suspension is obtained.

4. Pour through a coffee strainer, collecting the filtrate in a beaker.

5. Fill a centrifuge tube (10ml) to within 10mm of the top with the homogenous filtrate.

**NB** for a representative 5% of samples tested (to include pre- and post-drench samples): A duplicate sample of this homogenous filtrate should be collected in a suitable plastic container (10-15ml with screwcap lid), packaged correctly and sent to Kilkenny RVL.
container must be filled completely so that no air is present to prevent development of eggs present.

6 Centrifugalise at approximately 1,500 rpm for 2 minutes (or stand in a rack for 30 mins)

7 Pour off the fluid - retaining the deposit

8 Half fill the tube with Saturated Sodium Chloride and mix with the deposit - the tube may be inverted several times using a piece of parafilm over its top

   to avoid faecal contamination of fingers or an applicator stick may be used.

Avoid vigorous shaking as air bubbles introduced at this stage make later counting more difficult

Continue to add saturated NaCl until the amount added is equal to the amount of fluid poured off at step 7

Gently invert the test tube several times, until the mixture is homogeneous - any worm eggs present are evenly distributed throughout the mixture

9 Using a pasteur pipette, fill one chamber of the McMaster slide with the mixture. Return excess mixture to the tube, remix and fill the second chamber.
Examine under microscope and count strongyle eggs

- the laboratory must be able to distinguish and provide a count for *Strongyloides papillosus* and *Nematodirus* eggs (if present) separate from other trichostrongyle eggs

Note: Also note the presence or absence of other species (i.e. *Moniezia, Strongyloides, Trichuris, coccidia oocysts or lungworm larvae*)

Calculations:

Ruled Area = 1 cm 1 cm, depth = 0.15 cm

Volume under ruled area – 0.15 ml (1/100 part of 15 ml) but 45 ml of suspension contained 3 grammes of faeces (42 ml of water = 3 grammes of faeces) thus, 15ml of suspension contained 1 grams of faeces

No. of eggs in 0.15ml (one side of chamber) x 100 = eggs/gram

NB. S.G of saturated NaCl is 1.2