

Survey Information and Consent

This questionnaire is part of a research project by Queen's University Belfast in association with Moredun Research Institute and the WORMSS project (University of Glasgow and Flock Health Ltd). It's about parasite control on sheep farms in Scotland. We would like to know what you are doing to control worms, and what you think of wormer resistance and how to deal with it.

There are 27 questions and we estimate that the survey will take around 20 minutes to complete.

Not in Scotland? No problem. Please answer our (even shorter) questionnaire for the rest of the UK and Ireland here:

[Sheep Worm 2021](#)

The answers will be completely anonymous. Anonymised answers will be shared between Queen's University Belfast and WORMSS and stored securely in accordance with current Data Protection policies. After the project finishes answers will be stored in a completely anonymised form for 10 years, in University of Glasgow archiving facilities in accordance with relevant Data Protection policies and regulations. Questionnaire data, excluding any personal data, may be used by others in the future.

You are under no obligation to take the survey. Results will be used to assess the current situation with respect to wormer resistance, and to improve guidance to help address this issue. They will not be shared with commercial companies except in published form open to everyone.

If you have any questions or concerns about this survey, please contact Laura Miskell at lmiskell01@qub.ac.uk. If you do not receive a satisfactory response, you should contact eric.morgan@qub.ac.uk.

Thank you in advance for completing this questionnaire!

Please read the consent form below and if you have any questions feel free to contact me at laura.miskell@qub.ac.uk

1. I confirm that I have read and understand the information stated at the beginning of the survey. I have had the opportunity to email any questions before starting.
2. I understand that my participation is voluntary, that I cannot be identified from my answers, and that they cannot be retracted at a later stage.
3. I confirm that I agree to the way my data will be collected and processed and that data will be stored anonymously for up to 10 years in University of Glasgow archiving facilities in accordance with relevant Data Protection policies and regulations. Questionnaire data, excluding any personal data, may be used by others in the future.
4. I understand that data collected as part of this study may be looked at by authorized individuals

from Queen's University Belfast where it is relevant to my taking part in this research. I give permission for these individuals to have access to this information.

5. I agree to take part in the above study.

6. I understand that the information I provide may be published as a report. Confidentiality and anonymity will be maintained and it will not be possible to identify me from any publications.

1. Please confirm, by ticking the box below, that you understand that once you have completed the survey, the question answers will be used for research purposes and the details you have shared cannot be retracted.

I consent to the details that I have provided being used for research purposes under the conditions set out above, and that I cannot retract the information at a later stage.

2. Please enter your **county**

3. How many breeding ewes do you keep approximately?

- Fewer than 50
- 50-199
- 200-399
- 400-999
- 1000 or more

4. What is the main breed of sheep on your farm: state main ewe breed (x terminal ram if different)

5. When is your peak lambing period (tick all that apply)?

	This year	10-20 years ago if different
December / January	<input type="checkbox"/>	<input type="checkbox"/>
February	<input type="checkbox"/>	<input type="checkbox"/>
March - 1st week	<input type="checkbox"/>	<input type="checkbox"/>
March - 2nd week	<input type="checkbox"/>	<input type="checkbox"/>
March - 3rd week	<input type="checkbox"/>	<input type="checkbox"/>
March - last week	<input type="checkbox"/>	<input type="checkbox"/>
April - 1st week	<input type="checkbox"/>	<input type="checkbox"/>
April - 2nd week	<input type="checkbox"/>	<input type="checkbox"/>
April - 3rd week	<input type="checkbox"/>	<input type="checkbox"/>
April - last week	<input type="checkbox"/>	<input type="checkbox"/>
May - 1st half	<input type="checkbox"/>	<input type="checkbox"/>
May - 2nd half	<input type="checkbox"/>	<input type="checkbox"/>
June-August	<input type="checkbox"/>	<input type="checkbox"/>
Sept-November	<input type="checkbox"/>	<input type="checkbox"/>

6. How many times per year do you **typically** treat your lambs for roundworms?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- more

7. How many times per year do you **typically** treat ewes for roundworms, on average?

- 0
- 1
- 2
- 3
- more

8. Problems from roundworms vary within and between years. Which statements describe how you decide when to worm weaned lambs (tick all that apply)?

- I treat at pre-set intervals to keep them well covered through to finishing
- I wait until I see scouring or growth check before treating
- I treat when I think the time is right based on experience
- I track worm egg counts and treat when they rise too high
- I track weights and treat if weight gain is below target
- I treat lambs to keep pastures clean for future use
- I treat lambs more when they are grazing fields that I suspect are carrying high worm numbers

9. How do you estimate weight to calculate the dose of wormer to administer?

- Estimate weight of each individual
- Weigh each individual
- Estimate average weight of group and dose for average weight
- Weigh some animals and dose for average weight
- Estimate weight of heaviest individual and dose all animals for that weight
- Weigh heaviest individual and dose all animals for that weight

10. Do you usually **dose and move**, i.e. move lambs after treatment?

- Yes, and lambs go onto land with a low level of worm contamination
- Yes, and lambs go onto land with a moderate level of worm contamination
- No - due to limited land
- No - I could but decide not to

11. When do you normally treat lambs for ***Nematodirus*** to prevent spring scour?

- On a fixed date each year
- At a fixed lamb age
- Depending on the weather as I judge it
- According to a published or online forecast
- In response to signs of scour or growth check
- Based on a faecal worm egg count
- I do not normally treat lambs in spring for Nematodirus

12. Which wormer did you use last year to treat for roundworms?

For information on anthelmintic groups see [SCOPS anthelmintic guide](#)

	White drench (group 1)	Yellow drench (group 2)	Clear drench or injectable (group 3)	Moxidectin (group 3)	Orange drench (group 4)	Purple drench (group 5)
For spring lambs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For summer lambs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For ewes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

None at all, or other (please specify)

13. Which wormer(s) do you plan to use to treat for roundworms this year?

- The same as last year
- Different

14. Please tell us what you used last year, if different.

	White drench (group 1)	Yellow drench (group 2)	Clear drench or injectable (group 3)	Moxidectin (group 3)	Orange drench (group 4)	Purple drench (group 5)
For spring lambs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For summer lambs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For ewes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

None at all, or other (please specify)

15. When did you treat your sheep with moxidectin in 2020? Please fill out the table for all classes/ages of sheep in your flock, as this will provide us with really useful data for our project.

We would like to know:

- The age/class of sheep (e.g. lambs, ewes, other adults etc.)
- The reason for treatment (e.g. Lambing, worming, quarantine, tupping, housing, scab, fluke etc.)
- The approximate percentage of animals in the group treated (e.g. 100%, 90% - 99% etc)
- The moxidectin formulation (Oral drench, 1% injection, 2% LA injection, Triclamox)
- The month

	Sheep age	Product used	Reason	Percentage treated	Month treated
1	<input type="text"/>				
2	<input type="text"/>				
3	<input type="text"/>				
4	<input type="text"/>				
5	<input type="text"/>				
6	<input type="text"/>				
7	<input type="text"/>				
8	<input type="text"/>				

16. Do you think that lambs do better if you treat their ewes with a wormer at lambing time?

- Yes, if moxidectin
- Yes, any wormer works equally well
- Depends on other factors
- Not sure
- No

17. Do you intend to change your overall use of moxidectin in the future?

- Increase use
- Decrease use
- No change

18. If you use a class 4 (orange) or 5 (purple) wormer, under what circumstances (tick all that apply)?

- As my main wormer in ewes or lambs, as specified above.
- Late in the grazing season, as a 'break drench' to eliminate build-up of worms resistant to my main wormer.
- A few weeks after using moxidectin (group 3), as a 'tailcutter' dose, targeting worms that might develop moxidectin resistance
- Inserted into my wormer rotation in other ways
- As a salvage dose when other wormer does not have the desired effect
- It is my only choice as classes 1-3 no longer work

19. Do you think all of the anthelmintics (wormers) are working effectively in sheep on your farm?

- Yes
- No

20. If any products seem to be not working effectively, which (tick all that apply)?

For more information on wormer groups see [the SCOPS anthelmintic guide](#)

- Group 1 (white)
- Group 2 (yellow)
- Group 3 (clear)
- Group 3 (clear: moxidectin)
- Group 4 (orange)
- Group 5 (purple)
- Flukicide: triclabendazole
- Flukicide: other

21. If you think that any wormers are **not** working properly in your sheep, why do you think this (tick all that apply)?

- Full faecal egg count reduction test: run through vet and using individual samples
- Drench check: faecal worm egg count before and after treatment using pooled group samples
- Drench check but using post-treatment samples only
- Sheep not doing well or scouring in spite of treatment
- Having to treat more often than expected

22. To what extent do you consider wormer resistance to be a problem for **the sheep industry as a whole**?

Not really a problem A massive problem

23. If you buy in replacement sheep (including tups), what do you use as a quarantine treatment for worms (tick all that apply).

More information on wormer groups can be found in this link to the [SCOPS know your anthelmintics guide](#)

- I don't buy in any sheep
- Group 1 (white)
- Group 2 (yellow)
- Group 3 (clear)
- Group 3 (clear: moxidectin)
- Group 4 (orange)
- Group 5 (purple)
- I don't treat for worms

24. How worried are you about wormer resistance in sheep, as it might affect your farm now or in future?

Not at all Very worried

26. If you were to treat only a proportion of your flock, what do you think is the most practical way of deciding which sheep to treat? Please rank in order of practicality (1 being the most practical and 6 being the least).



Weight



Weight gain



Behaviour (using observation or sensors)



Dagginess



Body condition



Faecal worm egg count



Own judgement ('farmer's eye')

27. If you have any suggestions for how we can improve this survey, please tell us here. Thank you!

Thank you and further information

Thank you very much for completing this questionnaire! We will use the results to better understand worm control practices on sheep farms, and where they might be improved. Your time is appreciated.

If you would like more information about the WORM SS project, looking at wormer resistance and moxidectin use on Scottish sheep farms, please contact jennifer.mcintyre@glasgow.ac.uk. The WORM SS project is a collaboration between the University of Glasgow and FlockHealth Ltd.

The WORM SS project is collaborating with Queen's University Belfast and the Moredun Research Institute on a UK-wide survey of worm management and wormer resistance. If you would like further details on this project, please contact eric.morgan@qub.ac.uk

For further information on worm control, including current advice and resources, please visit:

Sheep: [SCOPS \(Sustainable Control of Parasites in Sheep\): www.scops.org.uk](http://www.scops.org.uk). You will be redirected here when you click 'Done', take the chance to bookmark the site!