Development of a pen side diagnostic test for fasciolosis in sheep and cattle.

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1. INTRODUCTION

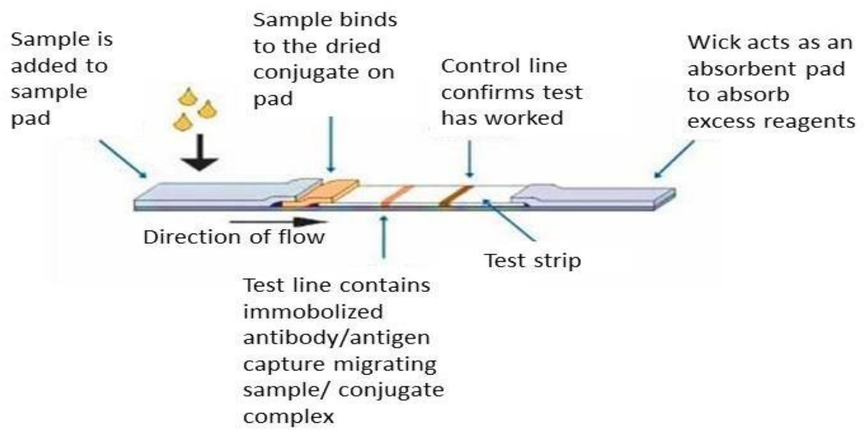
- ***Fasciola hepatica* (the liver fluke)** is a common parasite that infects cattle and sheep in temperate climates
- It has a complex life cycle that involves an intermediate host, the mud snail, ***Galba truncatula***
- It prefers wet, muddy pastures for rapid development
- Infection is picked up by animals eating infectious cysts on grass

- It is highly pathogenic, resulting in **weight loss, anaemia and a significant loss in production**
- In worst cases it can also result in **sudden death** through extensive damage to the liver
- Over recent years, prevalence of liver fluke has been **increasing significantly** within the UK
- Causes an estimated loss to the UK farming economy of more than **£300 million** each year
- Increasing evidence of resistance to the flukicide drug, triclabendazole (Fasinex), particularly on sheep farms

- Current diagnostic tests are primarily based **on faecal egg counts (FEC)** which can be slow and time-consuming
- Other diagnostic tests include **antibody** ELISAs which are able to detect host anti-fluke antibodies in bulk milk tank samples or individual serum samples
- **Both tests are costly** as samples have to sent off to the laboratory for testing
- None of these tests are able to diagnose **acute fasciolosis**, which mainly affects sheep, where farmers can lose up to **10%** of their flock in a matter of days with very little warning.

2. AIMS

Project aim: **To develop a lateral flow pen-side diagnostic test which provides farmers with immediate results.**



- Lateral flow tests are becoming very widely used in a variety of settings
- First commercial lateral flow test that was commercially available was the human pregnancy test
- Using a simple ear prick, the aim of this project is to provide a **rapid alternative** to other available diagnostic tests.

3. CONCLUSIONS

- This project will improve the health and welfare of sheep and cattle by rapid diagnosis of fluke infection
- It will address the growing concerns over the development of resistance by allowing targeted treatments of individual animals and reduce the reliance on blanket drug treatments of whole herds or flocks.