Paws claws and udder things

Gribbles VETERINARY

April 2022

WormFEC programme

The WormFEC Programme is provided by AgResearch in association with Beef & Lamb New Zealand (Sheep Improvement Limited – SIL). This service provides breeding values for several parasite resistant traits, along with an overall index of resistance.

A faecal egg count (FEC) index is calculated for individual sheep. FEC data is registered with SIL along with data collected for other traits (e.g. lamb growth, twinning rate etc.) to generate breeding values that can be applied to assist in stock management decision making.

Note: WormFEC data can only be entered into the SIL system when generated from a AgResearch approved provider such as Gribbles Veterinary.

Overview

- **Pre-drench composite / pooled FEC** – confirm worm burden greater than 500 epg prior to drenching
- **Drench check** – 10 FEC per mob/ treatment group to confirm drench is effective (samples collected 7-12 days after drenching).
- **Challenge composite/pooled FEC** – testing of samples collected each week after drenching to monitor epg. FEC expected to exceed 800 epg by week six. 30 animals sampled per mob/ treatment group and submitted for composite testing.
- **Individual progeny FEC testing** – individual FEC test and result reference to animal ID (testing of ≥30 or all animals per sire line recommended).

Test methods:

1. **Drench Check** – FEC of individual faecal samples (n=10). FEC reporting of results >35epg.
2. **Composite FEC** – A composite sample is created by pooling 10-15 samples. Composite FECs are used to give an overview of the gastrointestinal nematode parasite status of a flock.

Reporting:

We will provide results of individual and composite FEC following submission and testing of samples. Progeny FEC results will also be provided, in a format compatible with Beef & Lamb NZ SIL requirements.

Sample requirements:

- **Specimen**: 2-4g faeces per animal.
- **Container**: Plastic pottle
- **Collection protocol**: Collect samples directly from rectum of animal (not from the ground unless freshly passed onto clean yard). Submit fresh or store in a refrigerator until transport to a laboratory*. Do not freeze.

Notes:
*For the composite FEC, sample 10-15 animals per group; Equal volumes of faeces may be pre-bulked or sent individually; *Do not refrigerate samples if larval culture is anticipated.*

FAQs

How do I submit samples for WormFEC testing?

Faecal samples can be submitted to any of the Gribbles Veterinary laboratories. The term 'WormFEC' needs to be clearly identified on the submission form for the testing and results to be applicable for submission to SIL.

What is the Worm FEC testing price?

Individual FEC - $6.99 (ex. GST)

Composite FEC - $46.78 (ex. GST)

What data is included in the results?

Strongyle and Nematodirus (eggs/gram) are both reported to a detection limit of <35epg.

Can additional testing be requested on the WormFEC samples?

Qualitative (standard) and quantitative larval culture can be performed on samples submitted for WormFEC testing.

What are the benefits of using Gribbles for WormFEC testing?

> Gribbles Veterinary are IANZ accredited for parasitology testing.

> Easy access to WormFEC testing from five locations nationwide.

> Option to include larval culture analysis of samples to provide information on drench resistant species.

This information can now also be found on our website here or simply search for WormFEC.

Lymph node biopsy – excise, don't incise

MICHAEL HARDCASTLE

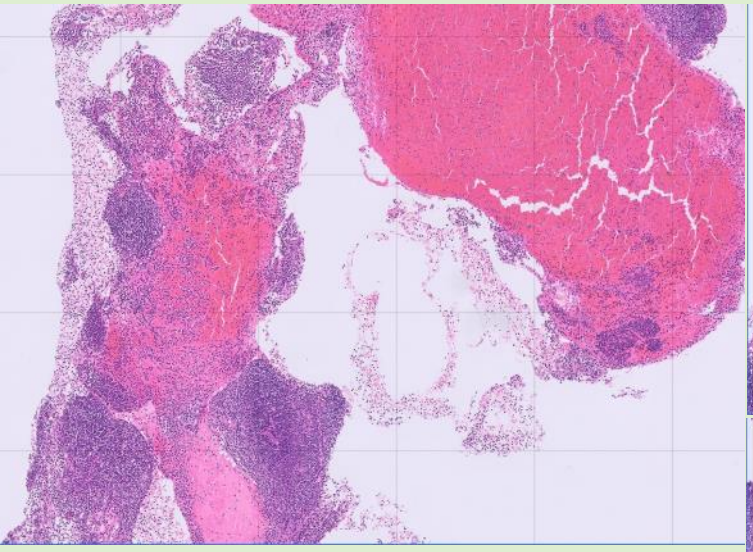
We frequently receive incisional biopsies (e.g. wedge, Tru-cut or punch biopsies) of enlarged lymph nodes. Unfortunately these can be unsatisfactory for multiple reasons and excisional samples (i.e. removal of the entire node) are preferred.

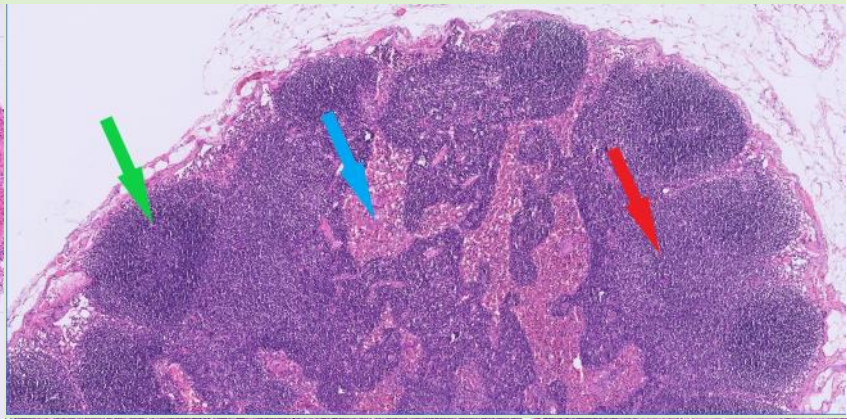
The main issues with incisional biopsies relate to sample distortion. Since lymphocytes are fragile and lymph nodes have a delicate supporting stroma, incisional biopsies (Tru-cut in particular) are often distorted by crushing or tearing artefact during the biopsy procedure and post-collection handling, leading to fragmentary sections with vague or unrecognisable cellular features (Figure 1). These artefacts make it very difficult to be sure whether the cells present are normal residents, neoplastic or inflammatory, or even what they are.

Furthermore, incisional biopsies may not be representative of the problem. Lymph nodes have a complicated architecture (see Figure 2) and the composition and volume of different areas of the node also changes with chronicity if they are hyperplastic or reactive nodes. This can make it difficult to rule lymphoma in or out if the biopsy is small or fragmentary, since it becomes difficult to know how representative it is.

Some metastatic neoplasms (e.g. mast cell tumours or mammary carcinomas) may only occupy some areas of the node (Figure 3, arrow), and may be missed with small biopsies. We see samples in which reactive changes (especially necrosis) dominate the node and may be all that is represented in small samples. We also see samples of supposed lymph node that turn out to actually consist of salivary gland, adipose tissue or muscle; an excisional biopsy would help avoid mistaken identification of the node.

Finally, small biopsies can compromise follow up testing (e.g. special stains, immunohistochemistry, clonality) or recuts for second opinions/better sections with less artefact, since it is possible to exhaust the available tissue, and artefacts may affect the quality of follow up tests.





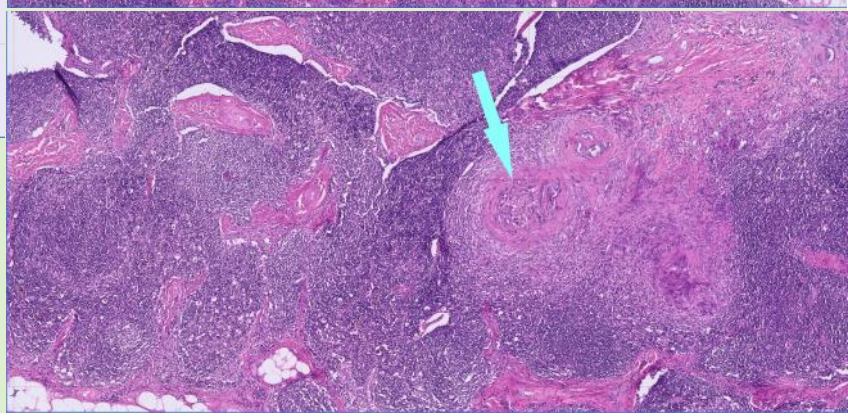


Figure 1 (above) - A fragmentary and haemorrhagic lymph node biopsy.

Figure 2 (above right) - A normal lymph node with follicles (green arrow), cortex (red arrow) and sinus (blue arrow).

Figure 3 (right) - A lymph node with small foci of metastatic malignant epithelial cells (blue arrow).

Sample packaging requirements - reminder

These faecal samples were recently sent to our laboratory packed inside a plastic bread bag and were leaking everywhere on receipt. They provide a good example of inappropriate/illegal sample packaging.

Plastic bags tear easily, are prone to leakage, are awkward to extract samples from, do not meet the legal requirements for biological samples and are not an acceptable sample container for any sample type. We request you use the regular/compliant hard plastic, yellow-lidded sample pottles.

If you are unsure of your legal requirements for shipping samples you can find all the information required on our website here.

That time of year . . .

GEOFF ORBELL

It is the time of year when we are seeing a lot of foreign body reactions due to migrating grass awns through the lab at the moment.

These are usually due to barley grass (*Critesion* spp.) of which there are six different species in New Zealand, but other grass species can also be culprits. Barley grasses are annual grasses that usually germinate in autumn, then set seed in summer which is why we start seeing these through the laboratory in February—March.

The most common points of entry are the interdigital webs, external ear canals and intertriginous areas such as the axilla and groin. Longhaired dogs are more commonly affected, as the awns are easily caught in the coat. They can also be commonly found in the conjunctival sac. Ingestion and inhalation of grass awns has also been reported and may lead to internal organ disease.

The awns are covered in microscopic silicised hairs which act as barbs similar to a fish hook, allowing only forward migration. Initial penetration of the skin is followed by migration into subcutaneous tissues where they incite a severe pyogranulomatous inflammatory response (Figures 1 & 2). Often there is secondary bacterial infection due to contamination of the grass seed, which can result in clinical improvement with antimicrobial therapy but quickly relapses following cessation.

Depending on the location of the initial skin penetration, migration can extend into the underlying thoracic or abdominal cavities resulting in exudative effusions e.g. pyothorax or organ abscessation. Grass awns have also been found in the bladder, pericardium, prostate and intervertebral discs. In one recent study 77% of canine sub-lumbar abscesses were associated with migrating plant foreign bodies.

In the skin, these usually present as poorly circumscribed subcutaneous masses which may or may not have fistulated. Cytology is initially recommended and if pyogranulomatous inflammation is identified, ultrasound can be useful in identifying the grass awn (as they are usually in a small cavity surrounded by fluid which provides good contrast). However, they may not always be visible as sometimes only small fragments may be responsible for the inflammatory response. Computed Tomography (CT) has also been successfully used for identification of migrating grass awns in internal organs and body cavities.

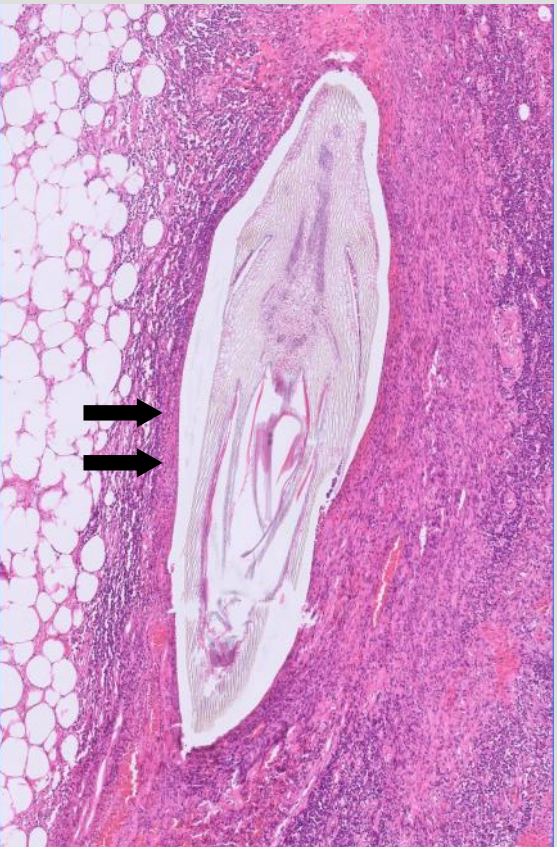
Differential diagnoses for pyogranulomatous inflammation identified cytologically include, traumatised follicular cysts or keratinising neoplasms, fibroadnexal dysplasia, penetrating wounds or less commonly actinomycete or fungal infections.

Surgical exploration and debridement is often unsuccessful in locating or removing all plant material therefore excisional biopsies of the entire mass is recommended with submission for histology to identify any foreign body or other causes.

Even histologically it can be difficult to identify the foreign body itself as each histology section only represents a 4 mm slice of the submitted tissue.

As secondary bacterial infections are common with cutaneous foreign bodies (Figure 3), submission of fresh tissue biopsies for culture is also recommended. These should be from non-fistulated areas and have the skin removed to minimise the chance of any skin commensal contamination.

Figure 1 (below) - Histology showing longitudinal section through a grass awn in the subcutis of a dog showing the microanatomy and presence of angled hair like structures (arrows) that act as barbs preventing reverse migration.



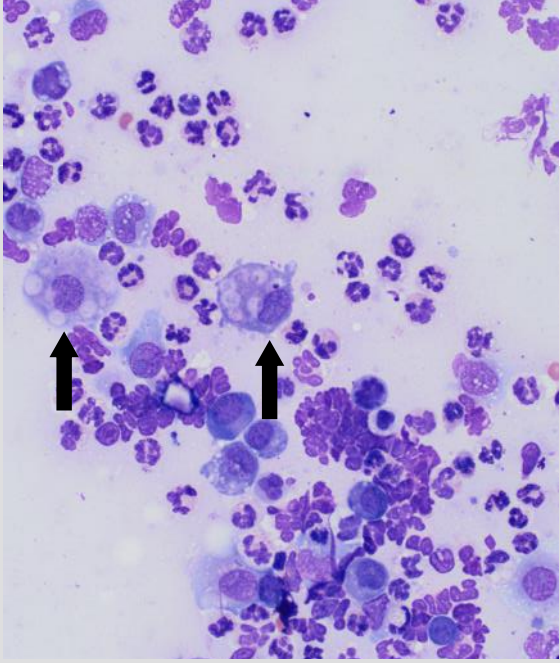


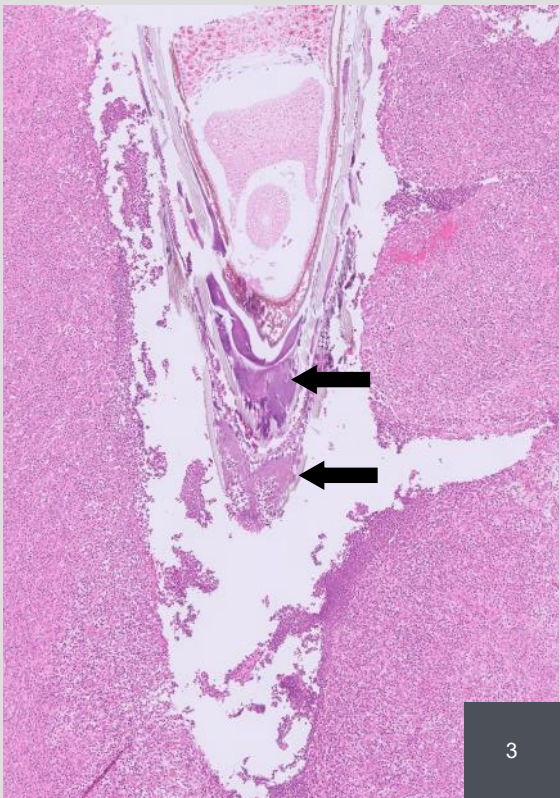
Figure 2 (above) - Cytology from a foreign body due to a grass seed, demonstrating pyogranulomatous inflammation with phagocytic macrophages (arrows) and numerous degenerate neutrophils.

References:

> Griffeuille E et al. A. Comparison of computed tomography and surgical findings and investigation of their associations with outcomes for dogs with sublumbar abscesses. *J Am Vet Med Assoc.* 259:1300-1308, 2021.

> Combs, M et al. Grass seed foreign body-related disease in dogs and cats: A wide spectrum of clinical presentations. *Aust. Vet. Pract.* 47:3-24, 2017.

Figure 3 (below) - Histology of a grass awn in the subcutis of a dog demonstrating colonies of bacteria (arrows) within the awn associated with a severe inflammatory response.



Consumable of the month

Do you order laboratory consumable items from us online or via our order form? If you need just one blood tube or swab, or enough for a herd, we've got you covered.

Our featured consumable item this month are **Chill Wrap ice pack sheets**.

> These sheets are an ice replacement product using Sodium polyacrylate super absorbent powder in a sheet of polyester film and non-woven fabric.

> The cells can but cut to whatever configuration you require.

> When placed in water the sheet absorbs the water into the powder and turns into a harmless gel.

> When frozen, Chill Wrap provides a non-leaking, flexible ice replacement with excellent heat absorption properties.

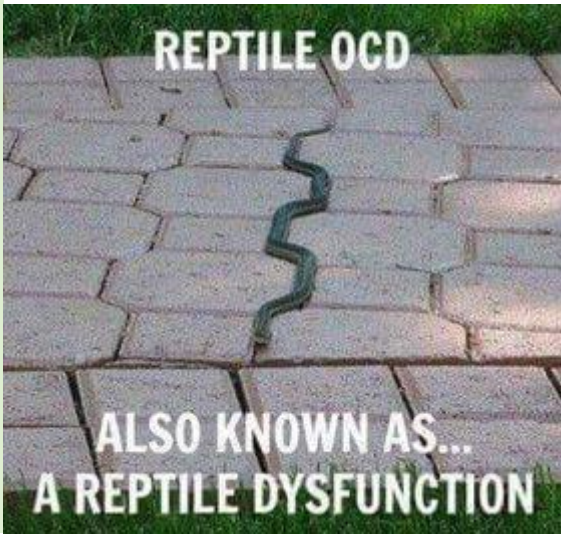
> They can be purchased via our online store as single sheets (6x2 cells per sheet) or in multi-packs of 10s and 20s.

For a laugh!

If you follow us on Facebook, you'll be familiar with our regular Friday slot. Feel free to message us on FB with any funnies you'd like us to post.

Here's our most popular funny from March. The reptilian equivalent of "Step on a crack, you're a dirty rat!".

. . . and if you don't follow us, head over and hit the LIKE button now!



In brief:

> All of our laboratories are closed for the ENTIRE Easter long weekend, reopening Tuesday 19 April.

> All laboratories are closed on April 25 for ANZAC day.

> For the most update-to-date status on the NZ Couriers network, use this link . . .

View NZ Couriers network status here

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Gribbles VETERINARY

ACCREDITED IANZ TESTING LABORATORY

Contact us

Contacting Gribbles Veterinary couldn't be easier.

EMAIL

auckland.vetlab@gribbles.co.nz
hamilton.vetlab@gribbles.co.nz
palmerston.vetlab@gribbles.co.nz
christchurch.vetlab@gribbles.co.nz
dunedin.vetlab@gribbles.co.nz

PHONE

0800 474 225

WEBSITE

www.gribblesvets.co.nz

FACEBOOK

www.facebook.com/GribblesNZ

Last but not least, please feel free to contact your local territory manager:

- Rachel Whitehead
  Category Manager, Production animals
  rachel.whitehead@gribbles.co.nz - 027 604 8690
- Chrissy Bray
  Category Manager, Companion animals & Analytical
  Chrissy.bray@gribbles.co.nz - 027 569 1169
- Deborah Bass - Territory Manager
  Deborah.bass@gribbles.co.nz - 027 476 7714
- Eugene van Niekerk - Territory Manager
  Eugene.vanniekerk@gribbles.co.nz - 027 250 1647
- Vicki Hawkes - Territory Manager
  Vicki.hawkes@gribbles.co.nz - 027 476 7713