Fecal Examination for the Diagnosis of Parasitism:

The fecal examination for diagnosis of parasitic infections is probably the most common laboratory procedure performed in veterinary practice. Fecal examination can reveal the presence of parasites in several body systems. Parasites inhibiting the digestive system produce eggs, larvae, or cysts that leave the body of the host by way of the feces and even adult helminthes parasites seen in feces.

Collection of Fecal Samples:

Fecal exams should be conducted on fresh fecal material. If fecal samples are submitted to the laboratory after being in the environment for hours or days:

1. Fragile protozoan trophozoite will have died or disappeared.
2. The eggs of some nematodes can hatch within a few days in warm weather and identification of nematodes larvae is more difficult.
3. Free-living nematodes rapidly invade a fecal sample on the ground and differentiation of hatched parasites larvae from these free-living species can be difficult.

Storage and shipment of fecal samples:

If collected feces cannot be examined within few hours, the sample should be refrigerated until it can be tested. Feces sample should not be frozen, because freezing can distort parasites eggs.

Fecal exam procedures:

Firstly, general appearance of fecal sample should be noted, consistency, color and presence of blood or mucus may be indicative of specific parasite infection .

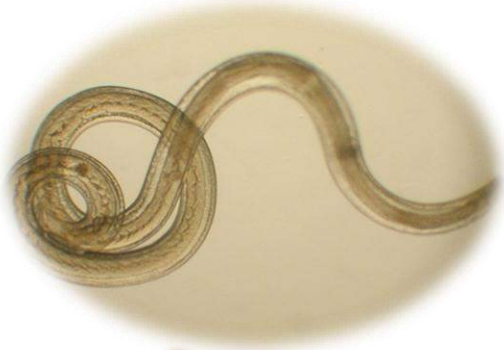
For example hook worm disease in dogs , commonly produce dark feces whereas whip worms causes diarrheic feces with mucus and blood, also the presence of adult parasites or tape worm segment should be noted.

Types of fecal examination techniques:

1. Direct fecal smear.
2. Concentration technique:

A- Sedimentation method

B- Flotation method



Preparation & microscopic examination of a direct fecal smear

Introduction

Direct fecal smears

- Direct fecal smears can be used as a quick screening test to check for any intestinal parasite.

Advantages &Disadvantages

1) **Advantages:-**

- Useful for detecting motile organisms.
- Protozoa are often detected via a direct fecal smear.
- Quick process.

2) Disadvantages

- Small size of the sample limits its usefulness.
- You may get inaccurate results.
- If your examination finds no evidence of a parasite but the patient actually harbors the parasite, then the results are called a false negative result. **False negative results are common with direct fecal smears.**

Fecal collection

❖ When collecting

- Fecal sample from animal in question.
- Relatively fresh
- May preserve in refrigerator if exam not immediate.
- Free from debris

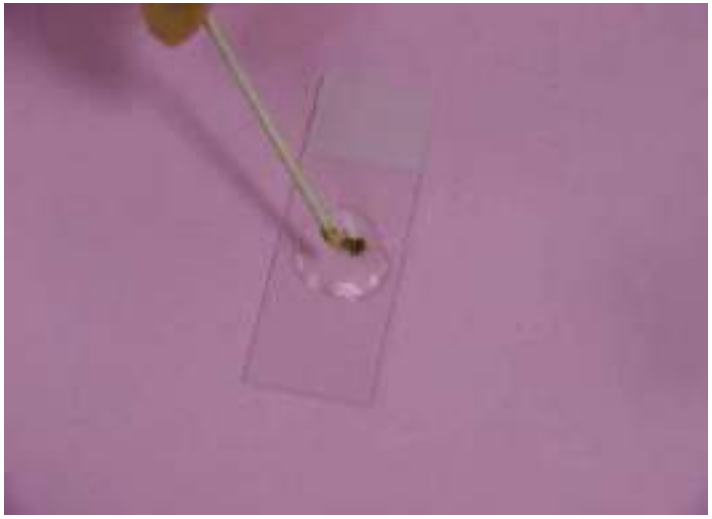
❖ Storage

- ✓ Plastic or glass jar/ vial
- ✓ Plastic cup
- ✓ Plastic bag

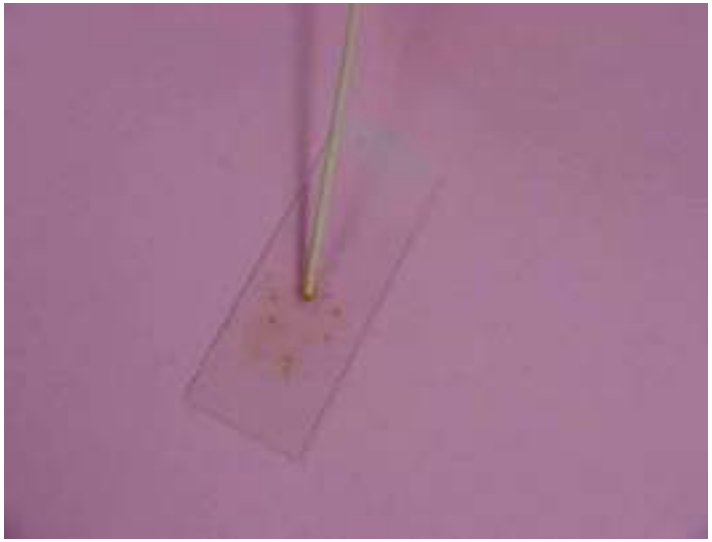
Preparing direct fecal smears (procedure):-

1) Put small amount of feces on glass slide.
2) Mix with drop of saline.
3) Place cover slip on mixtures.
4) Observe under microscope.

Note:- If the feces is already in a liquid state because the animal has diarrhea, obviously no fluid is needed to spread the feces over the slide.



feces+ saline on the slide



Mix until it is dispersed

Examine under microscope

Direct fecal smear cont.

- ✓ **Direct fecal smears may be examined as :**

1) A wet mount, or can be
2) Dried and stained.

1) Wet mount technique

- The fecal smear may be examined in its wet state by simply **placing a cover slip over the drop of wet fecal material**.

- This method is most useful looking for **trophozoites** which can be observed by their **characteristic movement and appearance**.