

### Lab Equipment

|                       |                                                                                                                                                                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| In-House Testing:     | Procedures performed & completed within the facility                                                                                                                                                                                  |
| Reference Lab:        | Procedures that samples will be sent out to the other facility for results & completion                                                                                                                                               |
| Microscope:           | Used for basic testing procedures. Aids in diagnosis & identification of problems quickly & accurately. Assistant should be knowledgeable on how to use. When not in use, should be covered. Should be serviced and cleaned annually. |
| Centrifuge:           | Spins lab samples at a high rate of speed to separate or concentrate materials. Must be balanced before use. Make sure top is secure. No standing over machine while in use. Do not try to stop the rotor by hand.                    |
| Refractometer:        | Measures the weight of a liquid. Specific Gravity--ratio of density of a substance to the density of a standard. Has two scales that are viewed as a prism. Must be cleaned & some need to be recalibrated after each use.            |
| Blood Chem Analyzers: | Automated equipment. Measures routine blood chemistries & electrolyte levels in blood. Hematology equipment will provide a complete blood count. Uses whole blood, serum or plasma.                                                   |

### Urine Samples

- Collecting voided samples
- Restraint when other methods are needed to obtain sample
- Gross examination of sample
- Prepare slides
- Voided Sample: Free catch midstream while urinating. Must be sterile. Only type an assistant can perform.
- Bladder palpation & expression
- Catheterization
- Cystocentesis (Sterile)
- Gross examination
- Physical Appearance: Color, odor, clarity/consistency, presence of foam
- Chemical properties
- Microscopic examination
- Evaluated within 30 minutes
- Refrigerate samples if not able to evaluate

### Fecals

Fecal Sample: Used to diagnose internal parasites or presence of blood in stool. Small amounts of stool or bowel material. Sample is collected & placed in labeled in airtight containers. Refrigerate if not tested immediately. Gross examination includes observation of--color, consistency, odor, blood, parasites, mucous.

Fecal Smear: AKA Direct smear. Small amount is placed to slide. Slide is under microscope (10X).

Fecal Floation: Determines parasite eggs.

### Direct Smear

1. Place drop of saline on microscope slide w/ equal amount of feces.
2. Mix w/ applicator stick.
3. Smear on slide, thin enough to read newspaper print through.

### Direct Smear (cont)

4. Remove any large pieces of feces if needed/add saline.
5. Examine smear using 10x for parasite eggs or sometimes 40x.

### Fecal Floation

1. 1-2 grams of feces in cup.
2. Fill cup for fecalizer about half way with ovum float solution .
3. Mix thoroughly.
4. Fill fecalizer to top, forming a meniscus.
5. Place cover slip over top of fecalizer.
6. Let stand for 15 minutes.
7. Carefully remove coverslip by picking it straight up.
8. Place on microscope slide wet side down.
9. Examine under 10x.

### Cytology

- Skin or ear cytologies
- Bacterial or yeast infection
- Done with "Dip Quick" stain
- Collected w/ cotton tipped applicator
- ROLL sample on slide (Thin Layer)
- HEAT FIX sample to slide using a single flame lighter on the back of slide, heating each area of the slide
- Each stain should be for 30 seconds
- 1. Blue Tinged: Fixative
- 2. Pink Stain: Will stain anything
- 3. Purple Stain: Will stain anything.
- Remove slide & rinse under gentle stream of water
- Blot excess water from edges and back. Don't blot the sample
- Air or blow dry
- Examine under 40x then 100x

### Lab Testing

Serological Testing: Provides results related to common viruses & diseases. Provided w/ a test kit w/ individual instructions specific to the kit. Usually kept refrigerated until use.

### Lab Testing (cont)

**Recording Results:** Results must be recorded in med record. Vet must be noted of the results. Lab log books are often maintained.

**Skin or Scotch Tape:** Moist areas will exudate (collect with cotton tipped applicator). CLEAR scotch tape can be "stuck" to and removed. Impression Smear--squish slide to area. Smear sample & stain the same way as ear cytology.

**Blood Smear:** Morphology of cells. Drop of blood is placed on slide & spread across the slide using a second slide. Needs a feathered edge. Stained. Make 2 slides always. RBCs are stained pink, WBCs are stained blue.

**Packed Cell Volume:** Hematocrit. Measurement of the percentage of RBCs in whole or unclotted blood. Small amount of blood. Centrifuged & read against scale.

**Urine Specific Gravity:** USG. Weight of a liquid. Refractometer. Indicates how well kidneys are functioning.

**Plasma Protein:** AKA Total Protein. Measurement of the ratio of protein within the blood & helps determine hydration status & occurrence of inflammation.

### Lab Testing (cont)

**Serologic Testing Kits:** Prepackaged kits that are used to diagnose various diseases in various species. Results are provided for most within 5-15 minutes.

**SNAP Tests:** Named for the action that begins the reaction.

**Gram Stain:** Determines presence of bacteria. Gram Negative--Stain red. Gram Positive--Gram purple. Not usually done in clinics.

**Urine Dip Stick:** Evaluate chemical properties using a reagent strip. Strip is "-dipped" in urine or individual drops are placed on strip w/ propette. Color changes on strip are evaluated against a key on packaging. Strips need to sit for 10-30 seconds before reading.

**Culture & Sensitivity:** Completed via sterile process. Requires a liquid or solid sample. Not generally done in house, sent to reference lab. Identifies type of bacteria & what antibiotics will eliminate. Bacteria takes 3-7 days to grow.

**Necropsy:** Examination of the body of a dead animal. Determines cause of death. Body & organs are examined. Tissue samples are taken & rested.

