



## Common Reasons for Samples that Fail DNA Testing

### General Issues

1. Biological Contamination
  - a. Cross contamination between samples/animals
  - b. Fecal matter and dirt in sample – any foreign material in the sample may interfere with genotyping
2. Chemical Contamination
  - a. Dye/Pigment from animal markers
  - b. Insect repellent
  - c. Cleaning agents
3. Improper Storage
  - a. Heat exposure including leaving samples in vehicle or in hot sun.
  - b. Exposure to foreign material including mold
  - c. Improper frozen storage - the freeze/thaw cycle of a self-defrosting unit can degrade DNA
  - d. Extended sample storage – DNA degrades over time
4. Insufficient sample
5. Improper shipping

### Concerns Specific to Sample Type

#### Hair cards

1. Too few or no follicles (<30) – DNA only occurs in the 'root' of the hair. The actual strands do not contain DNA.
2. Small follicles taken from young calves - hair samples should not be taken from calves < 6 months of age.

#### Blood cards

1. Insufficient blood spotted on card - ensure the circle is filled and the blood is visible on both sides of the paper.
2. When spotting cards from stored blood, make sure to invert the tubes 4-5 times before spotting – blood settles/separates over time.
3. Do NOT speed-dry the card using a hair-dryer as heat may damage the DNA.

#### Whole blood

1. Wrong type of blood tubes are used. Use only purple-top EDTA tubes, these prevent clotting.
2. Store the blood in a refrigerator until shipped.

### **AllFlex Tags, Typifix Tags, and Tissue samples**

1. No sample in tag
2. Sample is trapped in cap/does not enter tube – sample will not be preserved
3. AllFlex tags and Typifix tags should be kept at room temperature to prevent DNA degradation.
4. Long term storage
  - a. AllFlex Tags are viable for 12 months after collection.
  - b. Tissue samples should be stored in the freezer.
5. Unpreserved tissue samples should be shipped next-day and never over a weekend or holiday.

### **Semen**

1. Store any semen samples at room temperature or a refrigerator.
2. Semen straws can easily be damaged in shipping. Proper packaging is especially important – an empty ball point pen tube is recommended packaging