**Calculation of Drugs used for Open Castration procedure**

**2% Xylazine**

Volume2% Xylazine = $\frac{0.05mg/kg x 160kg}{20mg/ml} $

**Volume of Drug to be Used, V =**

$$\frac{Dosage (d) x Weight (w)}{Concentration (c)}$$

 **= 0.4mL**

**10% Ketamine**

Volume10% Ketamine = $\frac{0.1mg/kg x 160kg}{100mg/mL}$

It must be noted that the dosages for **both** xylazine and ketamine were **DOUBLED** for increased chemical restraint. As a result, it is expected that the calf would go down or go into sternal or lateral recumbancy.

 = 0.16mL

 **N.B. we used 0.4mL (as advised by a**

 **certified veterinarian)**

**Banamine**

VolumeBanamine = $\frac{\left(1.1mg/kg x 160kg\right)}{50 mg/mL}$

**Volume of Drug to be Used, V =**

$$\frac{Dosage (d) x Weight (w)}{Concentration (c)}$$

**= 3.52mL**

**2% Lidocaine**

In order to determine the ideal total volume that can

Be used, we estimated the toxic dose:

Volume2% Lidocaine = $\frac{10mg/kg x 160kg}{20mg/mL}$

**Volume of Drug to be Used, V =**

$$\frac{Dosage (d) x Weight (w)}{Concentration (c)}$$

 = 80mL

For further safety, we work with half the toxic dose = **40mL**

**Penicillin-Streptomycin (Pen-Strep)**

**Volume of Drug to be Used, V =**

$$\frac{Dosage (d) x Weight (w)}{Concentration (c)}$$

VolumePen-Strep = $\frac{20,000IU/kg x 160kg}{200,000IU/mL}$

 = **16mL**

It should be noted, that 8mL were administered to each site IM in the rump of the calf.

**EMERGENCY DRUGS**

**Epinepherine**

VolumeEpinephrine = $\frac{0.2mg/kg x 160kg}{1mg/mL}$

**Volume of Drug to be Used, V =**

$$\frac{Dosage (d) x Weight (w)}{Concentration (c)}$$

 = **3.2mL**

**Atropine**

**Volume of Drug to be Used, V =**

$$\frac{Dosage (d) x Weight (w)}{Concentration (c)}$$

VolumeAtropine = $\frac{0.04mg/kg x 160kg}{0.54mg/mL}$

 **= 11.85mL**

**Tolazoline**

To administer 10% Tolazoline:

**Volume of Drug to be Used, V =**

$$\frac{Dosage (d) x Weight (w)}{Concentration (c)}$$

Volume of Xylazine used: 0.4 mL at concentration 20mg/mL

Concentration of Tolazoline: 100mg/mL

For mildly depressed animals: **2** times xylazine dose: 0.05 mg/kg x 2= *0.1mg/kg*

For severely depressed animals: **4** times xylazine dose: 0.05 mg/kg x 4= *0.2mg/kg*

$$Volume=\frac{160 kg ×0.1 mg/kg}{100 mg/ml} Volume=\frac{160 kg ×0.2 mg/kg}{100 mg/ml}$$

*Volume=* **0.16 ml** *Volume=* **0.32 ml**