Drugs for Bruce

Drugs	Dose/ Concentration	Calculations	Volume per site	Withdrawal Time	Route &Comments
Anaesthetic/ Sedative		$\frac{Weight\ x\ Dose}{Concentration}$			
Lidocaine	**Toxic dose: 2% of 10 mg/kg** **Recommended dose for cow: (half toxic dose) 2% of 5 mg/kg**	**Toxic Dose** $\frac{250x\ 10}{20}$ **= 125 ml** **Maximum Vol can be administered:** $\frac{250\ x\ 5}{20}$ **= 62.5 ml**	**5 ml per testicle.** **2ml in the spermatic cord and 3ml subcutaneous tissue**	**4 days for meat** **3 days for milk**	**IM/SC** **Note: it was decided to administer 5 ml per site, which equals 10 ml administered in total to create a safe margin to re-administer more Lidocaine, if it was deduced that the first administration was not successful**
Xylazine	**Recommended Initial dose 2% of 0.05 mg/kg** **Recommended Subsequent dose for cow: (half initial dose) 2% of 0.025 mg/kg**	**Initial Dose (for Burdizzo):** $\frac{250\ x\ 0.05}{20}$ **= 0.625 ml** **Subsequent Dose (for Surgical castration):** $\frac{250\ x\ 0.025}{20}$ **= 0.31 ml**	**Initial Dose (for Burdizzo): 0.625 ml** **Subsequent Dose (for Surgical castration): 0.31 ml**	**4 days for meat** **1 days for milk**	**IM**

Ketamine	**Recommended Initial dose 10% of 0.5 mg/kg** **Recommended Subsequent dose for cow: (half initial dose) 10% of 0.25 mg/kg**	**Initial Dose (for Burdizzo):** $\frac{250\ x\ 0.5}{100}$ **= 1.25 ml** **Subsequent Dose (for Surgical castration):** $\frac{250\ x\ 0.25}{100}$ **= 0.63 ml**	**Initial Dose (for Burdizzo): 1.25 ml** **Subsequent Dose (for Surgical castration): 0.63 ml**	**3 days for meat** **3 days for milk**	**IM**
NSAID					
Flunixin	**5% of 1.1 mg/kg**	$\frac{250\ x\ 1.1}{50}$ **= 5.5 ml**	**5.5 ml**	**4 days for meat** **1.5 days for milk**	**IV, must be given first due to its technicality.**
Antibiotic					
Penicillin Streptomycin	**200,000 IU/ml of 10,000 IU**	$\frac{250\ x\ 10{,}000}{200{,}000}$ **= 12.5 ml**	**12.5 ml**	**30 days for meat** **10 days for milk**	**IM**
Anti-parasitic					
***Ivermectin**	**1% 0.2 mg/kg**	$\frac{250\ x\ 0.2}{10}$ **= 5 ml**	**5 ml**	**35 days for meat**	**IM** ***Note: This was recommended to reduce infection by internal parasites but was not administered due to a lack of availability**

Reversal Drugs

Drugs	Dose/Concentration	Calculations	Volume	Route & Comments
Atropine	**0.54 mg/ml of 0.04mg/kg**	$\frac{0.04\ x\ 250}{0.54}$ **= 18.5 ml**	**18.5 ml**	**IV/IM** **Used for Bradycardia**
Epinephrine	**1 % of 0.02 mg/kg**	$\frac{0.02\ x\ 250}{1}$ **= 5 ml**	**5 ml**	**IM** **Used for anaphylactic shock**
Tolazoline	**10 % of Recommended 2-4 times xylazine dose (0.05 mg/kg – 0.1 mg/kg)**	**Lower Limit:** $\frac{0.05\ x\ 250}{100}$ **= 0.125 ml** **Upper limit =** $\frac{0.1 \times 250}{100}$ **= 0.25 ml**	**Lower Limit = 0.13 ml** **Upper limit = 0.25 ml**	**IV slowly** **Used to reverse xylazine.** **If signs of xylazine toxicity (bradycardia, hypotension) are seen administer the lower limit, 0.125ml.** **If signs continue after some time add 0.125 ml or less to reach the upper limit. BUT do not cross the upper limit.**