**DRUG CALCULATIONS**

*Weight of animal = 500kg*

*Volume of drug used (ml) = (Dose (mg/kg) × weight of animal (kg)) / concentration (mg/ml)*

1. Xylazine (2%)

Volume (ml) = (Dose (mg/kg) × weight of animal (kg)) / concentration (mg/ml)

 = (0.05 mg/kg × 500kg) / 20 mg/ml

 =1.25 ml ≈ 1.3 ml

1. Lidocaine (2%)

Volume (ml) = (Dose (mg/kg) × weight of animal (kg)) / concentration (mg/ml)

 = (0.2 mg/kg × 500 kg) / 20 mg/ml

 = 5ml

Toxic dose of Lidocaine = 10mg/kg

Maximum dose of Lidocaine /animal (for safety) = ½ (toxic dose)

 = ½ (10mg/kg)

 = 5mg/kg

Volume of Lidocaine considered safe for use in this animal (ml) = (Dose (mg/kg) × weight of animal (kg)) / concentration (mg/ml)

= (5mg/kg × 500 kg) / 20 mg/ml

= 125 ml

Table 1 showing the volume of Lidocaine expected to be used in the lab.

|  |  |
| --- | --- |
| TYPE OF NERVE BLOCK | VOLUME OF LIDOCAINE (ml) |
| Intravenous Regional (forelimb) | 15 |
| Caudal Epidural | 5 |
| Proximal paravertebral | 30 (10ml/site) |
| Auriculopalpebral | 10 |
|  |  |
| TOTAL | 60 |

*A volume of 60ml of Lidocaine is expected to be used. This is well below the volume of 125ml which was calculated as the safe volume for use in this cow.*

EMERGENCY DRUGS

1. Tolazoline

 Dose = 2× (dose of Xylazine)

 = 2 (0.05 mg/kg)

 = 0.1 mg/kg

Volume of Tolazoline (ml) = (Dose (mg/kg) × weight of animal (kg)) / concentration (mg/ml)

 = (0.1 mg/kg × 500 kg) / 100 mg/ml

 = 0.5 ml

1. Atropine

Dose = 0.04 mg/kg

Concentration = 0.54 mg/ml

Volume (ml) = (Dose (mg/kg) × weight of animal (kg)) / concentration (mg/ml)

 = (0.04 mg/kg × 500 kg)/ 0.54 mg/ml

 = 37.037 ml ≈ 37 ml

1. Epinephrine

Dose = 0.02 mg/kg

Concentration = 1mg/ml

Volume (ml) = (Dose (mg/kg) × weight of animal (kg)) / concentration (mg/ml)

 = (0.02 mg/kg × 500 kg) / 1 mg/ml

 = 10 ml