**Pre-operative equipment**

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| --- | --- |
| **Name** | **Use** |
| Rope Halter and lead ropeWeaver Leather Cattle Rope Halter, Cow, 35-7901-BL/BK at Tractor Supply Co. | Used on the bull calf to make a quick release slip knot. Allows for cattle to be safely restrained making surgery less dangerous for those performing it as well as decreasing risk of cattle injuring itself. |
| RopeBlue Hawk 0.375-in x 50-ft Twisted Polypropylene Rope (By-the-Roll) in the  Rope (By-the-Roll) department at Lowes.com | Was used to restrain the hind limbs of the calf. |
| Boots | To protect feet from being stepped or stamped.Keeps the veterinarian clean and also provides some protection from injury and dirt. |
| Coveralls | Worn when working with the cattle and are normally removed when exiting the farm to prevent any cross contamination between farms. |

**Intra-Operative Equipment**

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| --- | --- | --- | --- |
| **Name** | **Use** | **Advantage** | **Disadvantage** |
| GlovesMedical Grade Powder Free Nitrile Gloves | * Used to keep hand and area clean and decrease the spread of bacteria onto the castration site thus increasing risk of infection.
 | * Helps decrease risk of wound infection by no having te veterinarian in direct contact with the wound
 | * Makes it harder for the veterinarian to tie ligatures as there is less grip.
 |
| Plastic BagBlack Polyethylene Extra Large Garbage Bags Roll, Rs 80 /roll | ID:  17499567133 | * Was used to provide a ‘clean’ area to do the castration of the calf.
 |  |  |
| HaemostatHaemostatic Artery Forceps Toothed Dissecting Tissue Forceps Haemostat  Locking 5097879618462 | eBay | * Used to clamp arteries in the spermatic cord as well as provide a clear indication of where should be incised.
 |  |  |
| Scalpel blade and scalpel handleScalpel Blade HD Stock Images | Shutterstock | * Used to incise surgical area
 | * Sharp and precise tool
 | * Due to sharpness, there is a risk of a slip and injury
 |
| Reimer EmasculatorReimer Emasculator | GerVetUSA Inc | * Used in both open -open and open-closed methods and is used in crushing and cutting of the spermatic cord.
 | * This method is more effective at ensuring the animal is fully castrated.
 | * There is a higher risk of infection and complications.
 |
| Burdizzo EmasculatomeAmazon.com : Private Label Bloodless Burdizzo Castrator Pinch Cord Castrate  Bulls Cattle Sheep Goat 19&quot; : Patio, Lawn &amp; Garden | * Used to closed castration to crush the skin and the spermatic cord as well as stop blood supply to the testis.
* Used in stallion and bulls
* Small ones are used in sheep and goats
 | * This is bloodless and less painful for the animal.
* Less chance of infection due to there being no open wound.
* Quick and easy to complete
 | * Increase risk of gangrene due to lack of blood supply to the scrotum.
* If the cord is incompletely crushed, the animal can still breed.
* Increase risk of injury to animal or the veterinarian
 |
| ElastratorElastrator Castration or Tail Docker Pliers Plastic &amp; Free 100 pcs Elastic  Bands | eBay | * Elastic rubber ring is placed around the scrotum with the testicles below
 | * Bloodless so increase risk of infection due to no open wound
* Less painful than cutting
* Quick and easy
* No risk of maggot infection due to no open wound
 | * There are age limitations as it has to be done before ram lamb is 10 days old
* There is a risk of a wound forming that can lead to an infection in particular tetanus
* The discomfort can lead to decreased growth rate
* Sometime scrotum doesn’t completely fall of and remainder will need to be cut
 |
| Newberry knifeBuy Agri-Pro Newberry Castrating Knife Online | Heritage Animal Health | * Makes 2 vertical incisions on either side of the scrotum to allow for testicle removal.
 | * Slits the scrotum in half
* Allows for good drainage of the wound
* Good access to the testis
 |  |
| GauzeFirst Aiders Choice Non-Sterile Gauze Swabs 5cm 100 Pack | Officeworks | * Used to clean surgical area or to provide grip during surgery.
 | * Used to soak up excess blood/ fluid to provide better visualisation of the surgical area. Can also be used to provide better grip.
 | * Risk of gauze being forgotten in surgical site by accident and leading to infection
 |
| Suture material (catgut) Catgut Suture at Rs 1380/dozen | Catgut Suture | ID: 19346149848 | * Was used to form a strangle knot to stop bleeding when the spermatic cord is cut.
 | * It's absorbable so it doesn’t need to be cut to be removed.
 |  |
| Specimen Container17,447 Specimen Container Stock Photos, Pictures &amp; Royalty-Free Images -  iStock | * Used to collect the testis for observation and histopathology if necessary.
 |  |  |

**Post-operative equipment**

|  |  |  |
| --- | --- | --- |
| **Name** | **Use** | **Advantage** |
| Tetravet SprayTetravet Aerosol | * An antibiotics spray used to treat and prevent topical microbial infections.
 | * Decreases risk of infection developing at the wound site.
* Its a topical antibiotics spray that contains Oxytetracycline hydrochloride as the active ingredient. It’s a broad-spectrum bacteriostatic antibiotic and its colours allows for easy identification of where in the wound was sprayed.
 |
| Matabichera Fort dodge SprayMatabichera FD | Zoetis AR | * This is an anti-myiasis spray which repels insects and flies from the wound area.
 | * This decreases risk of fly laying eggs leading to maggot wounds.
* Its an anti-myasis spray and antiseptic that contains Active ingredients are chlorfenvinfos and dichlorvos
 |