

## Laboratory equipment list

| SI # | Item                   | Specifications  | Unit    | Quoted rate | Remarks |
|------|------------------------|---|---------|-------------|---------|
| 1    | ELISA reader           | Item : Microplate reader<br>Model : MB-530<br>Description<br>HEALES: MB-530, 96 wells capacity, compatible with computers, software CD & accessories. It is controlled by computer to complete Enzyme Linked Immunosorbent Assay (ELISA). 96 well microplate, analyse and report, which are widely used in clinical diagnostic laboratories, software CD for installation or compatible with computers, enclose catalog | Per set |             |         |
| 2    | Microscope             | Dual Viewing Digital Microscope, Dual Viewing System w/pointer, complete with USB/HDMI camera, LED illumination, Objectives: 10x, 20x, 40x, 100x, best quality, specify and enclose catalog   | Per set |             |         |
| 3    | Microscope             | Digital Microscope, LED illumination, Objectives: 10x, 20x, 40x, 100x, best quality, specify and enclose catalog  | Per set |             |         |
| 4    | Microscope             | Stero zoom, digital microscope, LED illumination, Objectives: 10x, 20x, 40x, 100x, best quality, specify and enclose catalog  | Per set |             |         |
| 5    | Microscope             | Warm stage microscope along with a hot plate for use in the evaluation of cattle semen, digital microscope, LED illumination, Objectives: 10x, 20x, 40x, 100x, best quality, specify and enclose catalog  | Per set |             |         |
| 6    | Digital colony counter | For bacterial colony counting   | Per set |             |         |
| 7    | Incubator              | For bacterial culture or growth   | Per set |             |         |
| 8    | Mixer grinder          | Philips (Classic-750) mixer grinder, 410174   | Per set |             |         |
| 9    | Refrigerator           | Labfreeze, MR-PR120   | Per set |             |         |
| 10   | Water bath             | Jouan, specify sizes  | Per set |             |         |
| 11   | DLC counter            | Differential leukocyte counter for blood samples  | Per set |             |         |
| 12   | Autoclave              | Temperature: 1-121 degree centigrade, prefer-WISECLAVE or equivalent, specify sizes, enclose catalog  | Per set |             |         |

## Laboratory consumables list

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| Sl # | Items  | Specifications  | Unit                     | Remarks  | Quoted rate | Remarks |
|------|--|---|--------------------------|--|-------------|---------|
| 1    | Brucella ELISA Kit                           | 5 x 96 wells micro-titer plate, ELISA test to find the presence of Brucella Antibody, Contents: Brucella antigen coated plate, Wash buffer, Sample diluent, Enzyme conjugate, Conjugate diluent, TMB substrate, Stop solution, Positive control, Negative control, etc.                                   | Per 5 x 96 wells pkt kit | Preferably, minimum of 2 years expiry validity |             |         |
| 2    | <i>Mycobacterium Bovis</i> Antibody Test Kit | 5 x 96 wells micro-titer plates, ELISA test to find the presence of <i>M. bovis</i> antibody in cattle serum. Contents: <i>M. bovis</i> antigen coated plate, Conjugate, Sample diluent, Enzyme conjugate, TMB substrate, Stop solution, wash concentrate (10x), Positive control, Negative control, etc. | Per 5 x 96 wells pkt kit | Preferably, minimum of 2 years expiry validity |             |         |
| 3    | Rose Bengal Plate Test Reagent               | RBT reagent to test Bovine brucellosis antibody in serum sample, 100ml  | Per 100ml vial, specify  | Preferably, minimum of 2 years expiry validity |             |         |
| 4    | CMT reagent                                  | For sub-clinical mastitis testing in milk samples, 500ml, with paddle   | Per bottle               | Preferably, minimum of 2 years expiry validity |             |         |
| 5    | VTM  | Viral transport medium swabs  | Per piece                | Preferably, minimum of 2 years expiry validity |             |         |
| 6    | Rapid test kit for Avian Influenza Virus     | Avian Influenza Virus Antigen Detection Rapid Test Kit, Type "A", 10 tests/kit  | Per 10 pouches pkt kit   | Preferably, minimum of 2 years expiry validity |             |         |
| 7    | Rapid test kit for Avian Influenza Virus     | Avian Influenza Virus Antigen Detection Rapid Test Kit, Type "H5", 10 tests/kit   | Per 10 pouches pkt kit   | Preferably, minimum of 2 years expiry validity |             |         |

|    |   |   |                        |  |  |  |
|----|---|---|------------------------|--|--|--|
| 8  | Infectious Bursal Disease rapid test kit    | IBD antigen detection rapid test kit, 10 pouches/kit  | Per 10 pouches pkt kit | Preferably, minimum of 2 years expiry validity |  |  |
| 9  | Canine Distemper Virus rapid test kit       | CDV antigen detection rapid test kit, 10 pouches/kit  | Per 10 pouches pkt kit | Preferably, minimum of 2 years expiry validity |  |  |
| 10 | New Castle Disease virus rapid test kit     | NCD antigen detection rapid test kit, 10 pouches/kit  | Per 10 pouches pkt kit | Preferably, minimum of 2 years expiry validity |  |  |
| 11 | Rapid rabies antigen detection test kit     | Rapid rabies antigen detection test kit, 10 pouches/kit   | Per 10 pouches pkt kit | Preferably, minimum of 2 years expiry validity |  |  |
| 12 | Avian Leukosis Complex                      | Rapid test kit with 10 packs box  | Per 10 pouches pkt kit | Preferably, minimum of 2 years expiry validity |  |  |
| 13 | African Swine Fever Virus Ag Rapid Test Kit | Rapid test kit for ASFV Antigen detection rapid test kit  | Per 10 pouches pkt kit | Preferably, minimum of 2 years expiry validity |  |  |
| 14 | Nitrile gloves                              | Resistant to xylene and formalin, No. 7 and 6.5   | Per 50 pair pkt        |  |  |  |
| 15 | Cryogenic marker micro-tip                  | Water resistant, permanent  | Per piece              |  |  |  |
| 16 | Cotton                                      | Absorbent, 450grams roll, best quality, dust free   | Per roll               |  |  |  |
| 17 | Cryo rack or box                            | Serum storage box/Cryo-box, 96 tubes capacity   | Per piece              |  |  |  |
| 18 | Cryo tags                                   | 1000pcs/pkt, 38/19mm, Cat.No. 523090  | 1000 stickers/pkt      |  |  |  |
| 19 | Cryo-vials                                  | Polypropylene, Sterile, cryo-tape/sticker already labelled, auto-claveable, 1-2ml capacity, 100 pcs/pkt | Per 100 pcs pkt        |  |  |  |

|    |   |  |                  |  |  |  |
|----|---|--|------------------|--|--|--|
| 20 | Glass slide                                       | Frosted end, glass slide, best quality, 72 x 25mm  | Per 50 pcs pkt   |  |  |  |
| 21 | Vacutainer needle                                 | 18 gauge, 100 pieces/pkt   | Per 100 pcs pkt  |  |  |  |
| 22 | Vacutainer  | EDTA, 5ml, 100 pieces/pkt  | Per 100 pcs pkt  |  |  |  |
| 23 | Vacutainer  | Plain, 7ml with clot activator, 100 pieces/pkt   | Per 100 pcs pkt  |  |  |  |
| 24 | Vacutainer adaptor                                | For holding the vacutainer for blood collection  | Per piece        |  |  |  |
| 25 | Hand sanitizer                                    | Broad spectrum anti-microbial & viruses  | Per 500ml vial   |  |  |  |
| 26 | Control High 2.5 ml (ABX Minotrol 16)             | MX430H (Lot No.)   | Per 2.5ml vial   |  |  |  |
| 27 | Control Low 2.5 ml (ABX Minotrol 16)              | MX430L (Lot No.)   | Per 2.5ml vial   |  |  |  |
| 28 | Control Neutral 2.5 ml (ABX Minotrol 16)          | MX430N (Lot No.)   | Per 2.5ml vial   |  |  |  |
| 29 | Minocclair 100ml                                  | 2103.3L 13 (Lot no.)   | Per 100ml vial   |  |  |  |
| 30 | ABX VETPACK                                       | 210111W3A (Lot no.)  | Per set          |  |  |  |
| 31 | Dehydrated Alcohol                                | Ethanol BP, 450ml  | 10 bottles       |  |  |  |
| 32 | Iso-propyl alcohol                                | 500ml  | 5 bottles        |  |  |  |
| 33 | OPD Tablets (o-Phenylene diamine Dihydrochloride) | 30mg, 50 Tablets, Sigma Chemicals Company  | 5 bottles        |  |  |  |
| 34 | Carbonate-Bicarbonate Buffer Capsule              | Sigma Chemicals Company  | 50 Capsules vial |  |  |  |
| 35 | Virkon  | Disinfectant   | 500 grams        |  |  |  |
| 36 | Acetone   | High grade, 99.9-100%, (CH <sub>3</sub> ) <sub>2</sub> CO, molecular weight - 58.8, Assay by GC is minimum of 99.5%, ASC grade, 500ml, 2.5 Litres bottle | Per bottle       |  |  |  |
| 37 | N/10 hydrochloric acid (HCL)                      | 100ml  | 100ml            |  |  |  |

|    |                                 |   |               |  |  |  |
|----|---------------------------------|---|---------------|--|--|--|
| 38 | Phosphate Buffered Saline (PBS) | SIGMA, to dissolve 1 tab/250ml water,                           | 100 Tabs/vial |  |  |  |
| 39 | Zinc Sulphate                   | 500gms  | 500grams      |  |  |  |
| 40 | Creatine monohydrate            | 50gms   | 50grams       |  |  |  |
| 41 | Potassium hydroxide pellets     | 500gms  | 500grams      |  |  |  |
| 42 | Sodium hydroxide                | 500gms  | 500grams      |  |  |  |
| 43 | Sodium chloride                 | Extra pure Min. assay-98% 500gm                                 | 500 grams     |  |  |  |
| 44 | Tri-Sodium Citrate              | 250gms  | 250grams      |  |  |  |
| 45 | Aluminum foil                   | 300mm x 9mts, Kitchen wrap, per roll                            | Per roll      |  |  |  |
| 46 | Adhesive                        | Johnson plaster, 10cm x 10meters, per roll                      | Per roll      |  |  |  |
| 47 | Cotton                          | Absorbent, 400gms, sterile, per roll                            | Per roll      |  |  |  |
| 48 | Face mask                       | Non-woven, 2 Ply Tie, Bulk pack of 100 pieces/pack, Ambassador, | Per pkt       |  |  |  |
| 49 | N-Hexane                        | For Aflatoxin digestion test                                    | 100ml vial    |  |  |  |
| 50 | Blood analyzer printer          | For blood analyzer model: HORIBA-ABX Micros ESV-60              | Per set       |  |  |  |
| 51 | Petroleum ether                 | 500ml   | Per bottle    |  |  |  |
| 52 | Giemsa's stain                  | 100ml   | Per bottle    |  |  |  |

### AI and LN2 equipment/ items list

| SI # | Items                       | Specification  | Unit | Quoted rate | Remarks |
|------|-----------------------------|--|------|-------------|---------|
| 1    | Universal AI Gun (Imported) | For bovine AI used, Can be used with all AI sheath types and for both 0.25 ml and 0.5 ml semen straws sizes, IMV or Minitube   | Nos  |             |         |
| 2    | QuickLock AI gun            | All purpose AI gun for all types of straws and sheaths, split or non split, Stainless steel and sterilisable parts only, Sheath fixation and release very easy by just pressing a knob, One hand only sheath fixation and release, Unique design for safe and centered straw alignment every time, IMV or Minitube | Nos  |             |         |

|    |  |   |        |  |  |
|----|--|---|--------|--|--|
| 3  | AI / Insemination Gloves                                     | 100 per packet, 5 fingers, super sensitive, Ultra thin, durable, IMV or Minitube  | Packet |  |  |
| 4  | Universal AI sheath (splitted, Imported)                     | 50 per packet, With slit or split, Suitable & tight fit with all types of semen straw and AI gun, transparent adapters for better visual control of straw position, soft shape tip, IMV or Minitube   | Packet |  |  |
| 5  | Manual semen straw cutter                                    | Ergonomic shape, Precise cutting of 0.25 and 0.5 ml straws, Easy to keep clean  | Nos.   |  |  |
| 6  | Artificial Insemination (AI) Gun Warmer                      | Heated, temperature controlled carrying case for loaded AI guns of cattle. To keep AI guns at correct temperature of 95 degrees F. Fully portable. Kit includes 12V rechargeable battery, belt or shoulder strap, 100V AC wall adapter, 12V DC auto adapter, spare liner and amp  | Nos.   |  |  |
| 7  | QuickLock Heater to transport AI gun at constant Temperature | Battery operated, with carrying strap to carry AI guns at a constant temperature, Thawed semen will not loose temperature in pre warmed AI gun, Very robust and easy to clean material, bag can be washed, Strap allows different ways of carrying the bag, Rechargeable battery, works for approx. 8 hours, Temperature setting : 35 degree C, other values optional, with Charger for 220 V | Nos.   |  |  |
| 8  | Bovine Thawing kit   | CITO Thaw Unit, 12 V, standard setting 38 degree C, with control unit and lift  | Set    |  |  |
| 9  | AI kit Box   | Ruggedly designed to withstand years of usage, for sanitary storage of AI items   | Set    |  |  |
| 10 | Thermometer  | For measuring AI thawing water temperature. Temperature range: 0 to 100 degree C  | Nos    |  |  |
| 11 | AI straw tweezers / AI straw forceps                         | Half cc AI straws, 12 to 15 cm length, Stainless steel Tweezers or Forceps suitable for both 0.25m and 0.5ml semen straws, Special groove in the end so that AI straws can be firmly picked out of goblets without crushing the straw   | Nos    |  |  |
| 12 | Professional Full length AI Apron                            | Professional apron Full length from neck to toes , Light weight, Waterproof, Washable fabric, Durable, Adjustable straps or belts at the neck and waist, to keep cloths like Shirt and pants clean during AI, Full length from neck to toes, Export quality   | Nos    |  |  |
| 13 | LN <sub>2</sub> Container (Transport Can)                    | 55 Litres capacity, With side ring & bottom pad for LN <sub>2</sub> Storage, Export Quality   | Nos    |  |  |

|    |   |  |     |  |  |
|----|---|--|-----|--|--|
| 14 | LN <sub>2</sub> Container (Transport Can)                                 | 50 Litres capacity, With side ring & bottom pad for LN <sub>2</sub> Storage, Export Quality  | Nos |  |  |
| 15 | LN <sub>2</sub> Container (Reserve Can)                                   | 35 Litres capacity, With side ring & bottom pad for LN <sub>2</sub> Storage, Export Quality  | Nos |  |  |
| 16 | LN <sub>2</sub> Container (Semen Bank)                                    | 35 Litres capacity, With side ring, bottom pad and Canisters inside for storage of Frozen semen, Export Quality  | Nos |  |  |
| 17 | LN <sub>2</sub> Container (For Mobile AI)                                 | 3 Litres capacity, With Canister inside & carrying belt for semen storage & mobile AI, Export Quality  | Nos |  |  |
| 18 | LN <sub>2</sub> Container (For Mobile AI)                                 | 5 Litres capacity, With Canister inside & carrying belt for semen storage & mobile AI, Export Quality  | Nos |  |  |
| 19 | Lid or Cap for LN <sub>2</sub> container                                  | For IN 50 Litres LN2 Containers, Extra Lid or cap for Transport Can  | Nos |  |  |
| 20 | Lid / Cap for LN <sub>2</sub> container                                   | For 35 Litres LN2 Containers, Extra Lid or cap for Semen bank  | Nos |  |  |
| 21 | Lid / Cap for LN <sub>2</sub> container                                   | For 3 to 5 Litres LN2 Containers, Extra Lid or cap for Mobile Container  | Nos |  |  |
| 22 | SS Funnel with Handle   | 70 cm diameter, durable able to withstand very low temperature, For transferring LN2 from one Container to another   | Nos |  |  |
| 23 | Dip stick / Measuring stick for Liquid Nitrogen level (AI Tank Dip stick) | 65 cm OR 25.5 inches length, Durable and Flexible dipstick, Black in colour to measure the depth of liquid nitrogen in Cryogenic container. The dip stick permits rapid and easy reading of a frost line to measure the depth of liquid nitrogen | Nos |  |  |
| 24 | Cool box for holding Liquid Nitrogen (-196 °C)                            | Quality Cool box compatible and able to hold Liquid Nitrogen (-196 °C) for easy transfer of Frozen bovine semen. Dimensions: 8 x 7.8 x 6 in. (L x W x H)   | Nos |  |  |
| 25 | Tilting Trolley   | For moving and transferring LN2 Containers (Transport Cans)  | Nos |  |  |
| 26 | Transfer Device   | Manual Transfer device used for transferring LN2 from Transport Cans (55 Litres Capacity) to other LN2 Containers  | Nos |  |  |

|    |  |  |            |  |  |
|----|--|--|------------|--|--|
| 27 | Self-pressurized Liquid Nitrogen hand pump for 50 mm neck diameter LN2 containers          | Ideal equipment to withdraw Liquid nitrogen from 50 mm neck diameter LN2 Container, Small volume, light in weight, easy to operate and carry. Used for fast and quick drainage of liquid nitrogen with minimal loss of LN2   | Nos        |  |  |
| 28 | Bovine Pregnancy Test using Bovine Pregnancy associated Glycoproteins (PAGs) with Reagents | Enzyme-linked immunoassay for the detection of early pregnancy-associated glycoproteins (early PAGs) in serum or EDTA plasma of cattle as a marker for pregnancy. Bovine Pregnancy Test can be used in serum and EDTA plasma as early as 28 days after breeding in cows with no interference from a previous pregnancy as early as 60 days after calving | Set        |  |  |
| 29 | GnRH (Receptal)  | GnRH, Receptal, 10 ml vial   | 10 ml vial |  |  |
| 30 | Plastic ear tags for Cattle  | Should have provision for eight digit numbers per ear tag, Female Single flap including Global extended Male buttons Small buttons, Plastic, Yellow colour, Light, Waterproof, Durable for proper identification of cattle   | No.        |  |  |
| 31 | Ear tag applicator   | Universal ear tagger for Plastic ear tags  | No.        |  |  |
| 32 | Permanent Marker pen for plastic ear tags  | Waterproof, Durable, Permanent marker (Export quality)   | No.        |  |  |
| 33 | Helium gas   | 99% purity, Capacity: 47 litres with cylinder, to be used in the LN2 production machine  | No.        |  |  |
| 34 | Petroleum ether  | Boiling rate 60-80 degrees celsius, Capacity 2.5 litres bottle, to be used for maintenance and servicing of LN2 production machine   | No.        |  |  |
| 35 | R-22   | Capacity: 8 kgs with cylinder, to be used as refrigerant in milk chillers  | No.        |  |  |
| 36 | R-404a   | Capacity: 8 kgs with cylinder, to be used as refrigerant in milk chillers  | No.        |  |  |

Note: Firms quoting for Medicinal products should have valid Medical Firms as per the Medicines Act of Kingdom of Bhutan 2003 & the Bhutan Medicines Rules and Regulations 2012

**Vehicle hiring for LN2 transportation**

| <b>SI #</b> | <b>Items</b>  | <b>Specification</b> | <b>Unit</b> | <b>Quoted rate</b> | <b>Remarks</b> |
|-------------|---------------|----------------------|-------------|--------------------|----------------|
| 1           | Light vehicle | Single cabin bolero  | Per km      |                    |                |