

National 4-H Livestock Skillathon Contest Prep- Equipment Identification

Livestock Equipment Identification

Possible Points: 60



This presentation should be used as preparation for a multi-species livestock skillathon. You will be expected to identify and name equipment used in livestock production for cattle, swine, sheep and goats.

- *Tools are divided by species and general categories of use. However, many tools are used in more than one species and some have more than one function. For example, a tattoo pliers is shown in the swine section, but is also used with cattle.*
- *This presentation provides a wide range of tools and equipment, but is not all-encompassing. There may be tools and equipment in the contest that are not presented here. Furthermore, some tools may be known by more than one name. For example, an automatic dose syringe may also be known as a pistol-grip syringe.*

This presentation was developed by T. White, under the direction of R.A. Nold as part of an Research and Education Experiences for Undergraduates NIFA grant.

Cattle

Identification

Heat or Hot Iron Branding

Permanent Method

- A hot iron is placed directly on the animal's skin leaving a permanent patch of deformed hair follicles.
- Irons can come in any shape or size variation.
- Branding irons may be warmed with a propane heater or over an open flame. However, some hot iron brands are electric.



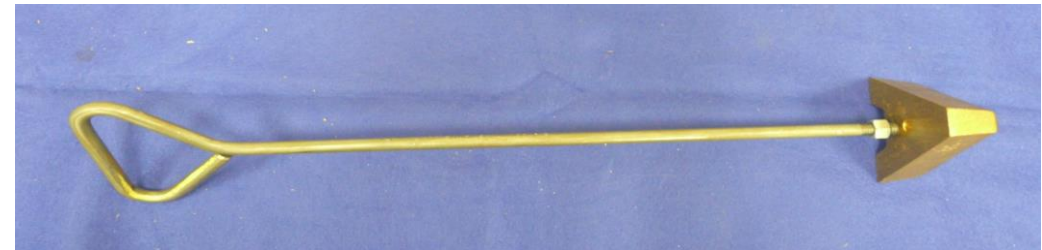
Texaslonghorn.com stock photo

Identification

Freeze Branding

Permanent Method

- An iron chilled in liquid nitrogen (-122°C and -127°C) or dry ice is placed on an animal's skin which damages melanocytes. As the brand heals, the skin and hair in the branded area will fall off and the hair will grow back white.
- Freeze branding is used as an alternative method of the heat branding for dark-coated animals.
- Irons come in various shapes and sizes. They are usually made of bronze, copper or brass.



Identification

Traditional Ear Tags

Semi-Permanent Method

- A tag is placed in the animal's ear by puncturing the ear with pliers with a tag inserted.
- Plastic tags are most common, but tags can also be aluminum, metal or brass.
- Tags come in a variety of colors and sizes. They can be purchased pre-numbered or blank depending on the producer's preference.
- Tagging is a method of identification used for other species of livestock but is most common in cattle, sheep and goats.



Identification

Electronic Ear Tags

Semi-Permanent Method

- A small button- like tag is inserted in the animal's ear and paired with an EID (electronic ID) tag reader for easier individual identification.
- Health records can be linked to the electronic tagging system and information on each animal can be accessed with a swipe from an EID reader.
- Tags can also control feeding systems allowing more accuracy when feeding individual cows of a herd.



Identification

Brisket Tag

Semi-Permanent Method

- The animal's brisket area is punctured and tagged.
- Tags come in a variety of colors. They can be purchased pre-numbered or blank depending on the producer's preference.



Identification

Ankle Straps / Leg Tags

Temporary Method

- A tag is wrapped around an animal's ankle with a ratchet lock.
- Straps come in a variety of colors and sizes. They can be purchased pre-numbered or blank depending on the producer's preference.
- Tags can be easily removed and reattached.
- Most commonly used in dairy, but can be used in other cattle.



General Management

Electric Dehorner

Dehorning for Calves

- The heated iron is firmly pressed against the emerging bud several times until the ring of tissue surrounding the horn is burned preventing any further growth of the horn.
- Using an electric dehorner decreases the chance of blood loss and infection.
- Electric dehorning is usually performed on calves of 8 weeks of age.



General Management

Tube and Barnes Dehorner

Dehorning for Calves

- The tube is placed over the horn. The skin is broken by pushing the tool down and twisting. The horn is then removed by shifting the tube to the side to detach it from the head.
- This method is commonly used to remove horns on calves 4 months or younger.
- Barnes dehorner are designed to remove small horns and can be used to dehorn many other species such as goats and sheep.



General Management

Dehorning or OB Saw

Dehorning for Older Calves or Adult Cattle

- After an incision is made around the horn, the wire is used to saw through and remove the horn from the animal's head.
- It is suggested that this method be used for tipping (removal of sharp points on horns) instead of dehorning on older livestock.
- Wire is also used to dehorn goats and sheep.

(Wire is labeled as OB wire, as it is also used in situations where a non-living fetus must be removed from the uterus in pieces.)



OB or
dehorning wire



OB or dehorning
saw handles

General Management

Calf Weaner

- A plastic nose piece that prevents calves from nursing without interfering with grazing.
- Farmers may allow the calves to stay with mothers to reduce stress associated with weaning
- There are many variations of calf weaners available.



General Management

Teat Slitter

- An incision is made on the teat to extend the sphincter muscle for better milk flow.
- Slitters are used for follow up surgeries regarding the udder.



General Management

Hoof Blocks and Cowslips

- Both blocks and cowslips elevate the healthy hoof allowing the animal to put less pressure on the infected hoof.
- Blocks are usually made of wood but can be rubber. They are commonly used to treat toe, heel and sole ulcer related lameness.
- Cowslips are orthopedic shoes.



Cowslips



Hoof blocks

General Management

Hoof Trimmer

- Hoof trimmers trim excess claw and shape the sole of the hoof.



Hoof trimmer

General Management

Scotch Comb

- A comb with long teeth used to groom cattle.
- Scotch combs are designed to comb hair up and forward making cattle appear larger than normal.
- These combs are primarily used when showing cattle.



Valleyvet.com

General Management

Curry Comb

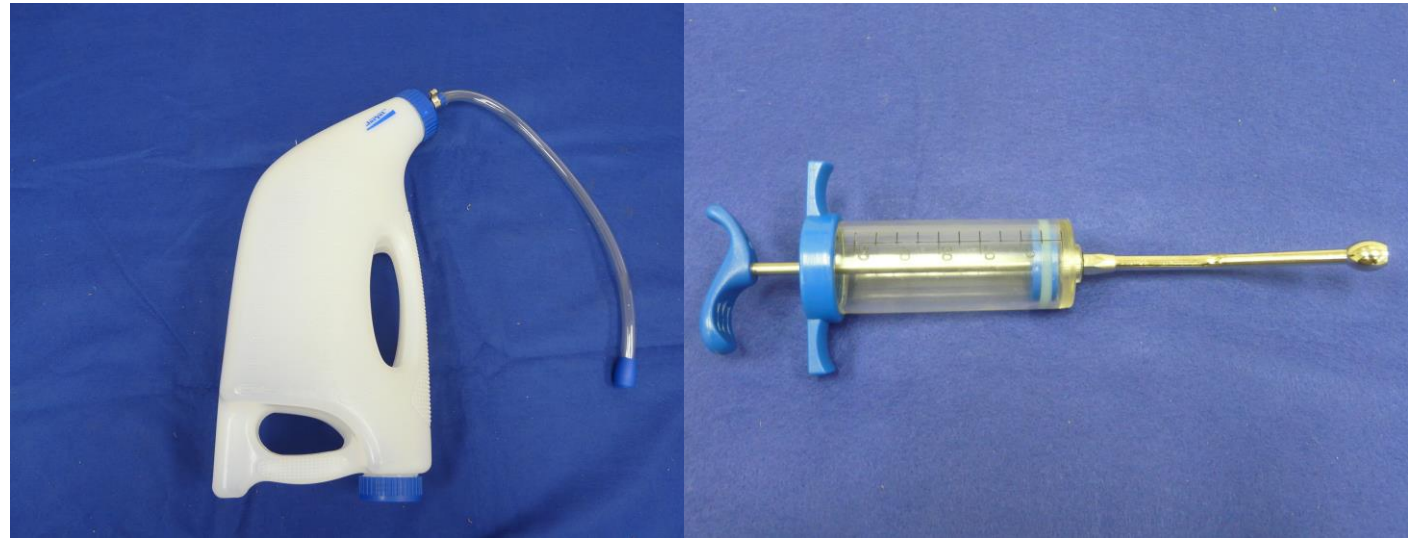
- A brush with serrated ridges used for removing dirt from an animal's coat.
- Curry combs can be used to remove debris from other grooming brushes.
- These tools are also commonly used to groom sheep and horses.



Medication

Oral Calf Drencher & Dose Syringe

- Both tools are used to rehydrate and administer oral liquids, including colostrum electrolytes, and some medications, such as dewormers.
- Dose syringes are also commonly used in sheep and goats.



Calf drencher

Dose syringe

Medication

Cattle Speculum

- Speculums are used to extend the cervix for vaginal exams in cattle.
- Frick speculums are used to pass stomach tubes down an animal's throat to administer fluids.



Cattle speculum

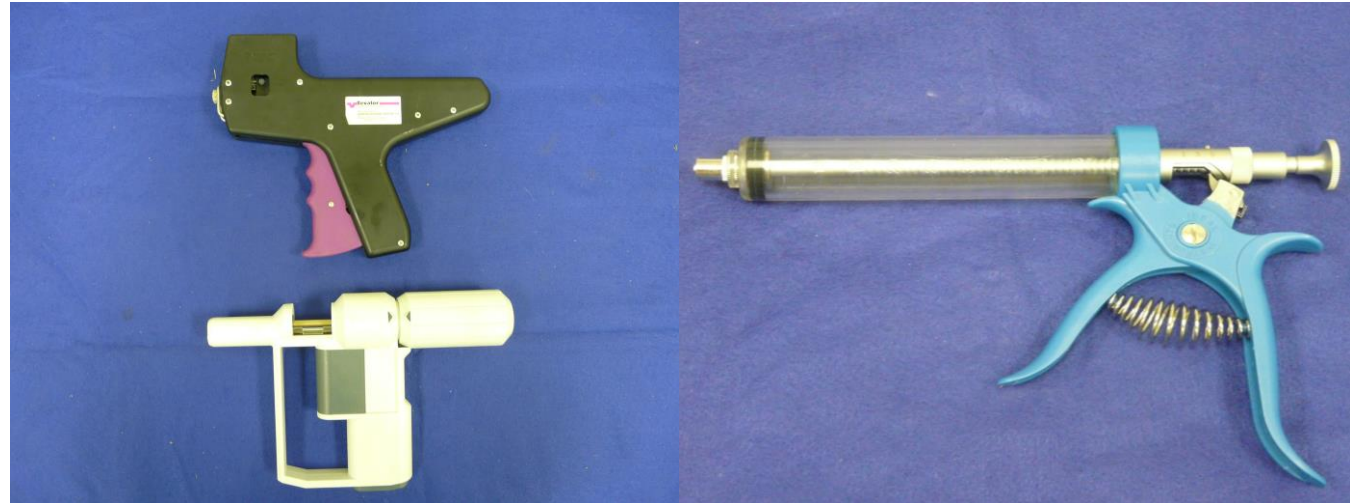


Frick speculum

Medication

Automatic Dose Syringe and Implant Guns

- Dose syringes administer IM or SubQ injections to a group of animals without reloading the syringe.
- Varied versions of syringes are available— bottle top, pistol grip, etc.
- Implant guns pierce the skin to administer an implant in the ear, without causing significant trauma.



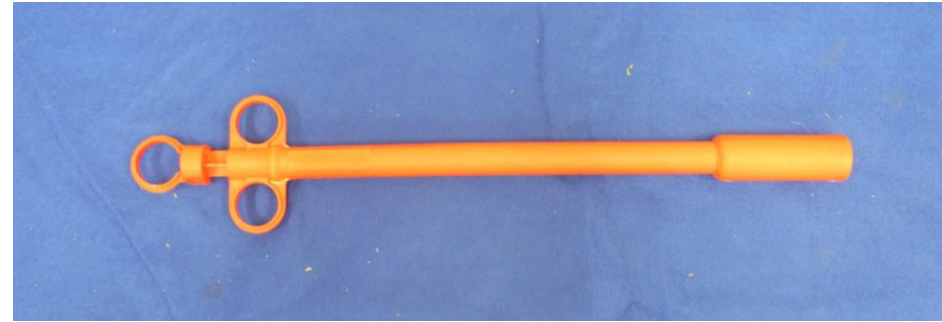
Implant guns

Automatic dose syringe

Medication

Balling Gun

- A method of administering bolus medication orally to larger animals.
- Available in plastic or metal.



Reproduction

Paint Sticks/ Chalk

- Paint and chalk are used to identify and sort animals for a variety of reasons. In regard to reproduction, it may be used to identify which cows have entered estrus and/or which cow's have been serviced.
- Paint and chalk come in a variety of colors and degrees of softness to ensure functionality in a variety of temperatures.
- Chalks are also commonly used in sheep and goats.



Reproduction

Heatmount Detector

Heat Detection

- A strip is placed above the tail head of an open cow that changes color when the animal is mounted helping those ready to be serviced.
- Patches are designed to change color when the mounting animal presses against it.



Reproduction

Chin Ball Marker

Heat Detection

- A harness with a steel ball attached near the chin area that leaves a colored mark on the back of cows that have been serviced.
- Marking paint is available in a variety of colors.
- Chin ball markers have decreased in popularity with greater use of estrus synchronization programs.



Reproduction

Scrotal Tape

- The tape is used to measure a bull's scrotal size which provides an indication of sperm production.
- A yearling bull's testes should exceed 30 cm scrotal circumference to meet productivity and breeding standards.

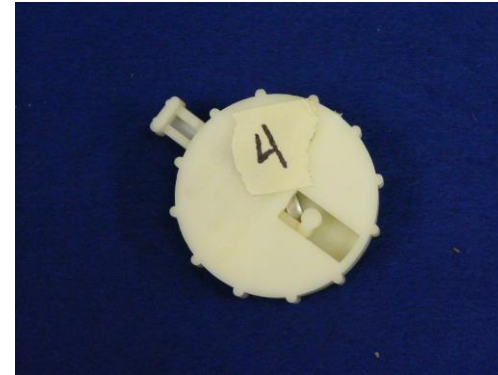


Reproduction

Straws, Ampules and Straw Cutters

Artificial Insemination (AI)

- Straws and ampules are a method of long-term storage for semen.
- Ampules are small bottle shaped glass containers that were the primary mode of semen storage before straws.
- Straws have become the predominant packaging method for semen due to its plastic material and smaller size allowing more semen to be stored in tanks.
- Cutters are used to cut straws in preparation for insemination



Straw cutter



Ampule



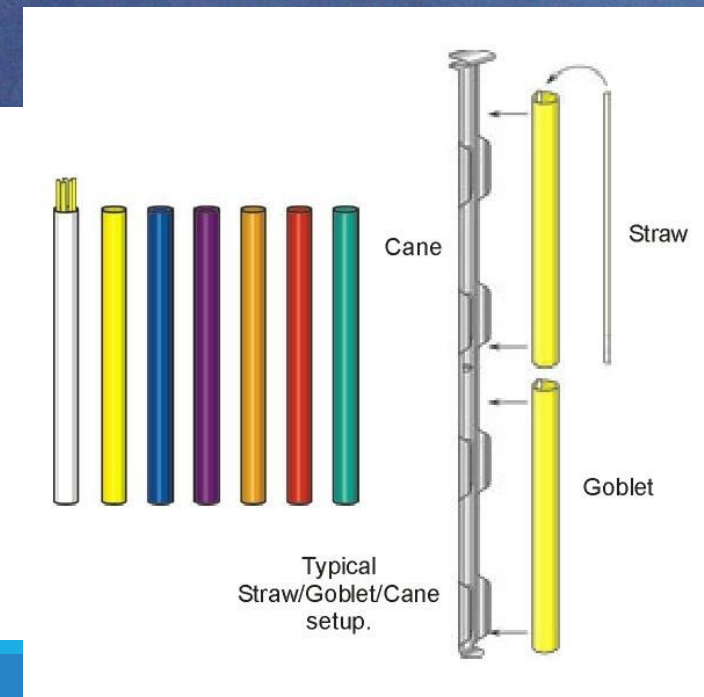
Semen straw

Reproduction

Semen Cane and Goblet

Artificial Insemination (AI)

- A semen cane is an aluminum tool used to hold goblets and allow easy access to semen straws from nitrogen tanks.
- Goblets are round pieces of plastic used to store semen straws.



Reproduction

Thaw Unit

Artificial Insemination (AI)

- A container holding warm water to unthaw semen straws in preparation for insemination.
- Containers can be electric and self heating.



Reproduction

Straws Guns and Breeding Sheaths

Artificial Insemination (AI)

- Straw guns are metal sticks that hold semen and inseminate cattle during AI.
- There are several types of straws guns including French, o-ring, spiral and kombicolor.
- Breeding sheaths are disposable plastic sticks used to protect the semen gun and prevent the spread of disease within a herd.



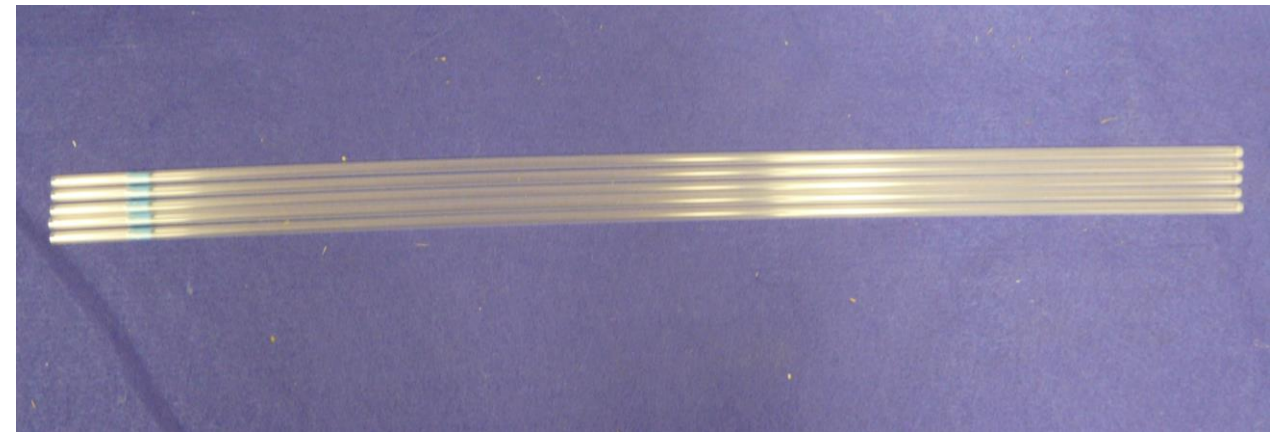
French



Spiral



Kombicolor



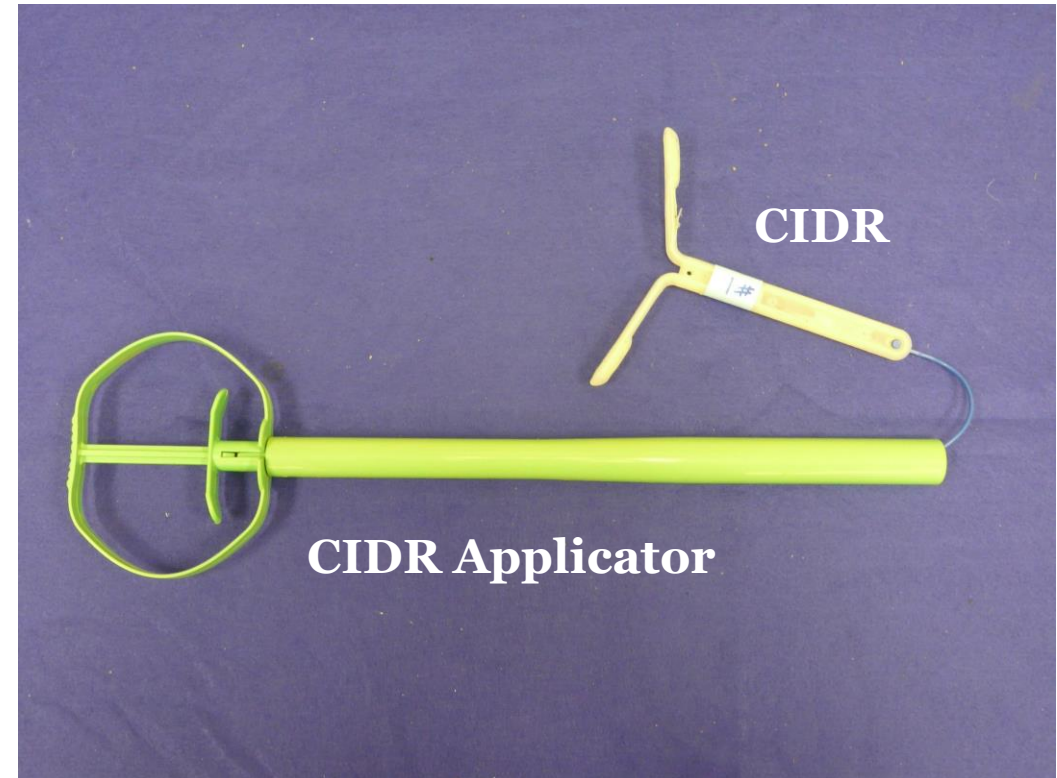
Breeding Sheaths

Reproduction

CIDR and CIDR Applicator

Artificial Insemination (AI)

- CIDRs are “T-shaped” vaginal insertions of progesterone used for estrus synchronization in beef cattle.
- A CIDR applicator inserts CIDRs inside of an open cow’s vagina.
- CIDR stands for controlled internal drug release.
- Smaller versions are also available to be used with sheep.



Reproduction

Nitrogen Tank

Artificial Insemination (AI)

- A container that freezes and stores semen for artificial insemination.
- It is recommended that tanks be kept at -195°C .



Reproduction

Artificial Vagina (AV)

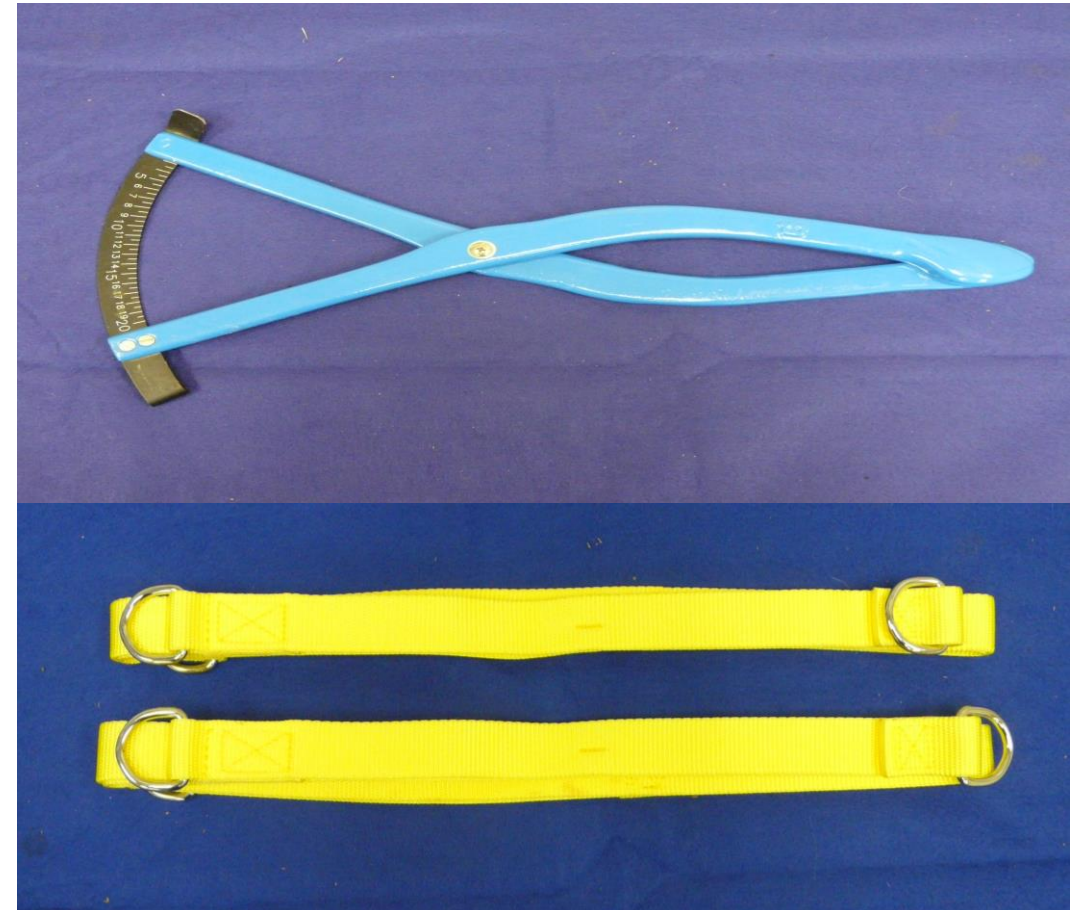
- A method of semen collection in which a bull mounts a dummy or teaser animal and ejaculates into a collection tube.
- The inner lining is filled with warm water (42°C- 48°C) for favorable temperature and pressure to stimulate ejaculation.



Reproduction

Rice Pelvimeter and Calf Straps

- A measuring device developed to predict dystocia in heifers based on the size of their pelvis.
- Calf straps assist with dystocia by grasping and pulling the calf out of the cow's womb.



Restraint

Squeeze Chute

- A small stall that restrains the animal by applying pressure to the barrel and trapping the head or neck.
- Chutes are commonly used for management practices and examinations of cattle.



Restraint & Controlled Movement

Rope Halter

- A rope usually tied around the muzzle and behind the ears that is used to lead or tie an animal down.



Photo by Freedom Farm Dexters

Controlled Movement

Nose Tongs/ Bull Leader

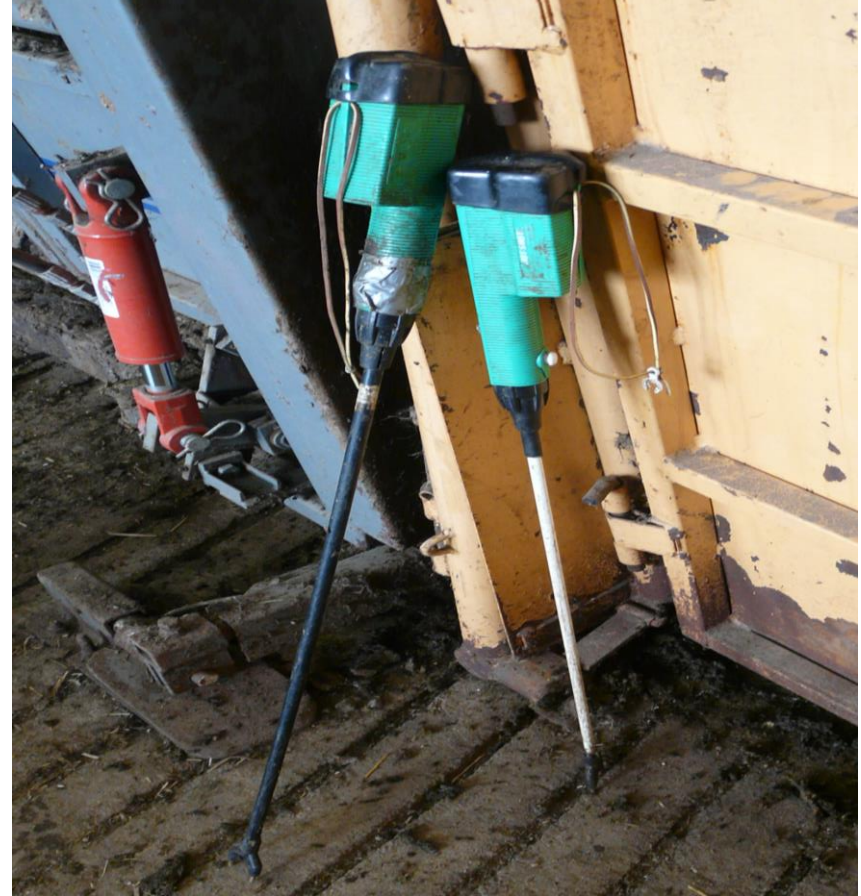
- A metal tool with large ball shaped ends that attach to the animal's nostrils and apply pressure when pulled.
- Some bulls are permanently ringed if they show signs of repeated aggression before the age of 2 for more control during handling.



Controlled Movement

Cattle Prod

- A handheld device used to promote movement in cattle.
- Electric prods are available in a variety of voltages.
- Use of prods should be kept to a minimum.



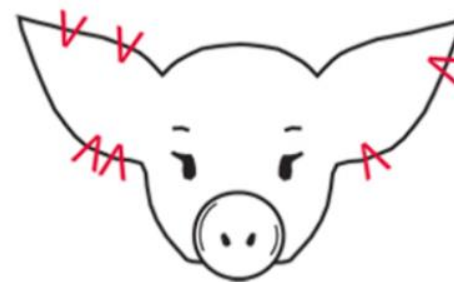


Swine

Identification

Ear Notchers

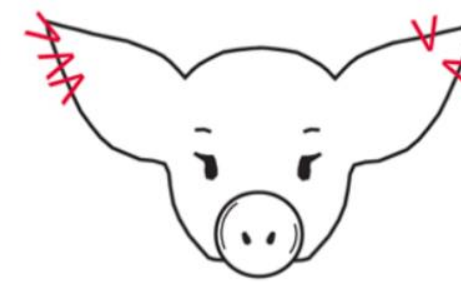
- Parts of a newborn piglet's ear is removed in specific areas according to the universal ear notching system that determines its personal identification and which litter it belongs to.
- To determine the litter number of a pig, you add the numerical values of each notch on the right ear. There are 5 points for notches.
- There are 3 notch points for the left ear which is added to determine the pig's personal identification number.



Litter No. $1 + 1 + 9 + 27 = 38$ (pig's right ear)

Pig No. $1 + 3 = 4$ (pig's left ear)

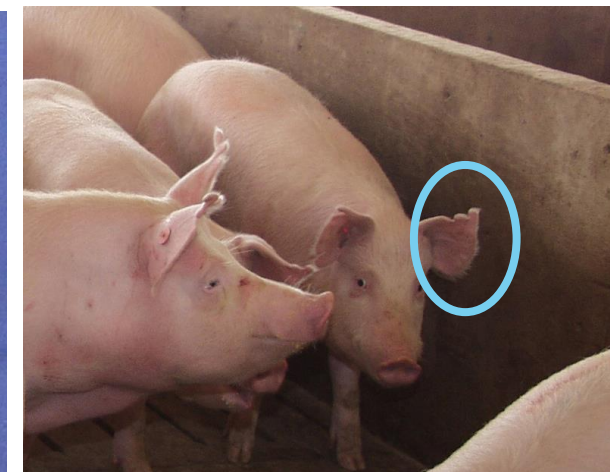
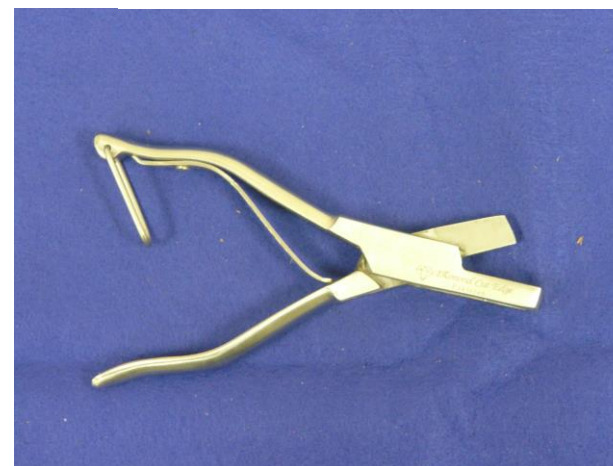
This pig's identity is 38-4.



Litter No. $3 + 3 + 81 = 87$

Pig No. $3 + 9 = 12$

This pig's identity is 87-12



Identification

Ear Tattoo

Permanent

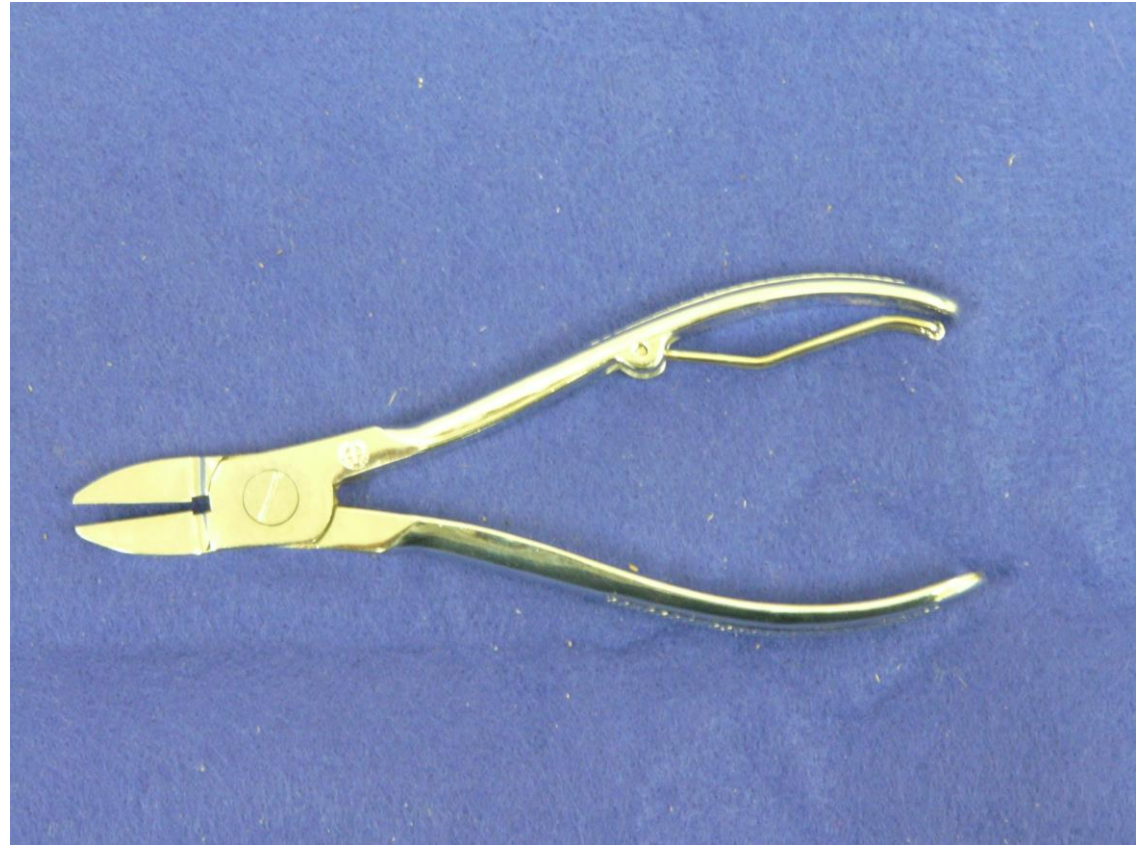
- Ink is placed on the back of the ear and then, pierced by the tattoo needle. This method of identification is used for piglets.
- Ear notching is preferred by swine producers over ear tattooing because the tattooing equipment tends to be more expensive and harder to read.
- Tattooing is used white herds in commercial settings.
- Similar equipment is used for tattooing cattle for identification.



General Management

Tooth Nippers

- The sharp needle teeth of baby pigs are clipped to prevent injury to the sow's udder or teats.



Health

Pig Resuscitator

- The resuscitator is placed over the nose of a newborn piglet that is not breathing and used to pump oxygen into its lungs to try to resuscitate it.



Facilities

Vanometer and Nipple Waterer

- A vanometer measures air velocity in any building housing livestock with specific temperature requirements.
- Vanometers are useful in maintaining a comfortable temperature for farrowing pigs. Drafts can be deadly for piglets.
- Nipple waterers are metal attachments for watering systems that reduce water leakage.



Vanometer



Nipple waterer



Reproduction

Odor Spray For Gilts, Sows and Boars

- Gilt and sow spray mimics the pheromones excreted from boars which assists in heat detection.
- Boar spray is used to entice and train boars to mount a dummy sow for semen collection.

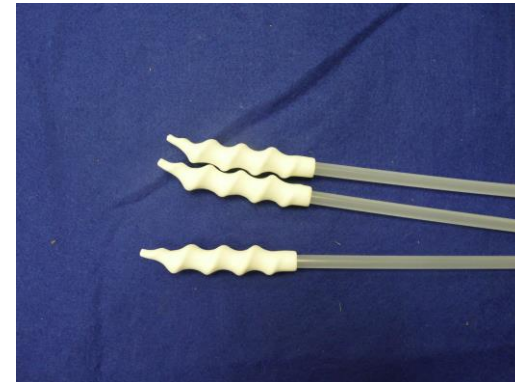


Reproduction

AI Catheters

Artificial Insemination (AI)

- Catheters move and insert semen from a bottle or tube into a sow's reproductive tract.
- There are several types including foam, spiral tip and golden pig.
- Foam catheters are designed to lock the cervix quickly and easily.
- Golden pig catheters are designed to inseminate gilts and skip the "locking in" method.



Spiral tip



Blue foam tip

Reproduction

A.I. Saddle

- A hands-free saddle used to breed multiple sows that holds semen bottles or bags while applying pressure to the sow's back.
- Female pig's stand still when pressure is applied to their rump area while in estrus.



Reproduction

Dummy Sow or Mount

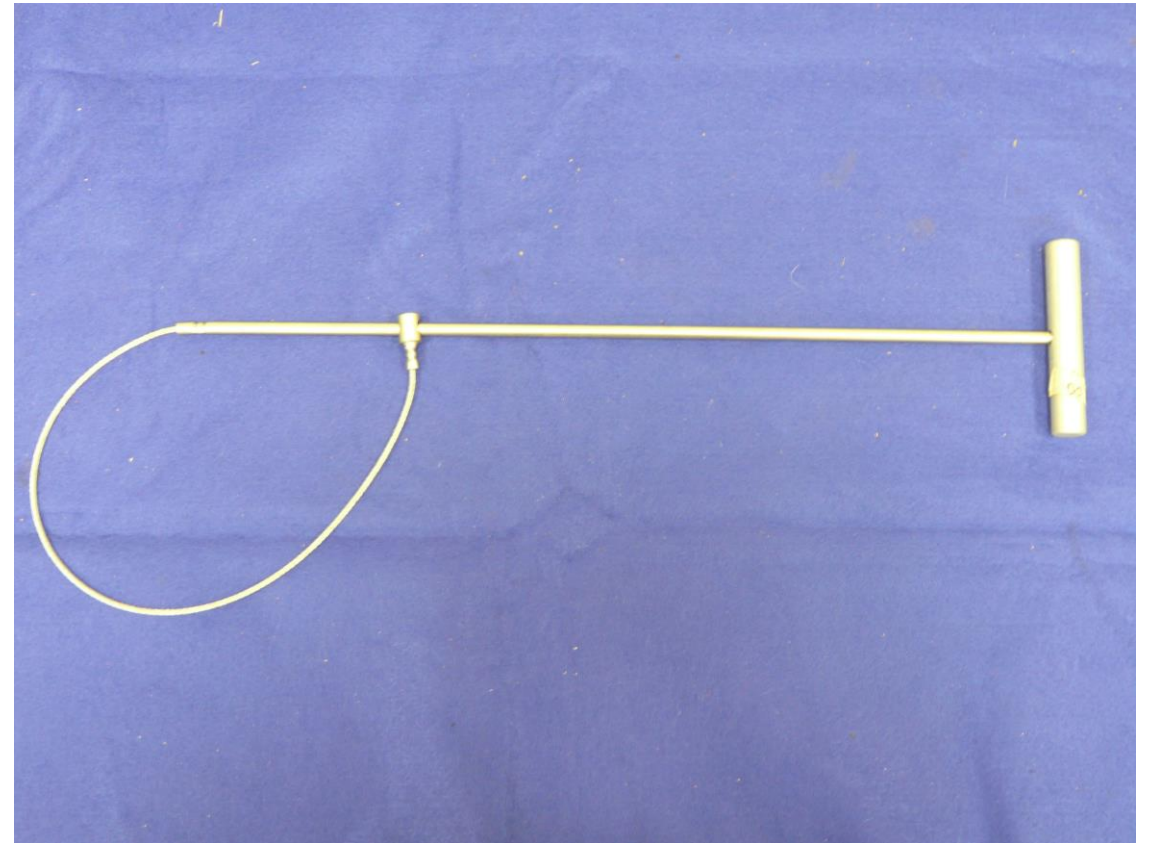
- Used for one method of semen collection in which a boar mounts and ejaculates into a dummy.
- It is recommended that dummies have handles/leg rests on both sides for the boar's comfort.



Reproduction

Obstetrical Snare

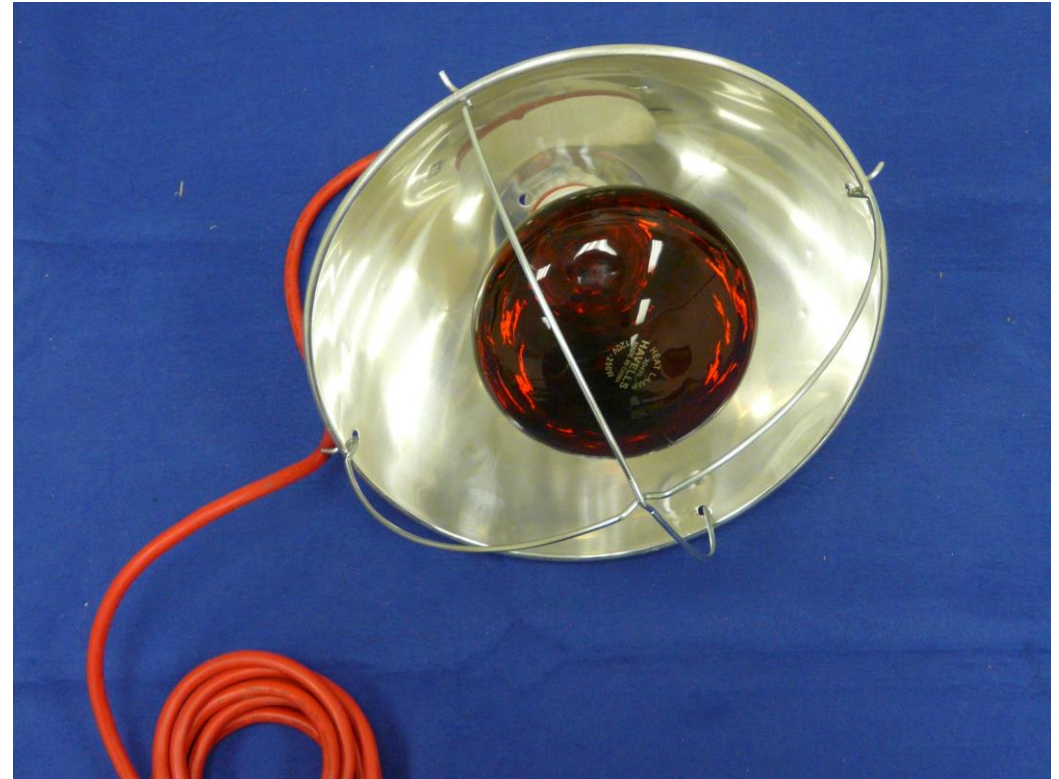
- A metal tool resembling a snare that is used to help with dystocia in pigs by pulling the front or rear legs of offspring oddly positioned in the womb.



Reproduction

Heat Lamp or Brooder

- A lamp with a red bulb used to keep piglets warm after parturition and during early development.
- Piglets prefer higher temperatures during development. Newborns will prefer temperatures between 85-95°F (this will gradually decrease with growth). However, the sow prefers cooler temperatures (60-65°F) making lamps in farrowing stalls essential.



Restraint

Gestation Stall

- A stall where sows are housed during pregnancy.
- Housing sows in crates allow for individual feeding to meet nutritional needs.
- Stall prevent injury from aggression and fighting between animals.



Restraint

Farrowing Stall

- A stall where sows farrow and are housed typically for the first 3 weeks after birth of a litter of piglets.
- Stalls allow individualized feeding to meet nutritional needs.
- Stalls allow for additional heat for baby piglets through heat pads and lamps, while sows can be cooled with drip coolers.
- Stalls also minimize accidental death of the piglets from crushing.



Restraint

Hog Snare

- A wire loop that can extend and tighten to humanely catch and restrain pigs.
- Pigs are usually restrained by the snout.
- Snaring is intended to restrain animals temporarily and is not recommended for prolonged use.



Controlled Movement

Sorting Panel

- A plastic rectangular board used to sort, move and load pigs.
- Panels can be aluminum or plastic but plastic panels are commonly used by producers.
- Panels come in a variation of sizes including hinged double panels.



Controlled Movement

Hog Flapper and Rattle Cup

- Flappers are plastic accessories that make a loud “crack” sound when slapped against any solid surface promoting movement in swine.
- Rattle cups are filled with steel balls that allow movement of animals using sound alone.



Rattle Cup



Hog flapper

Controlled Movement

Paddle Sticks

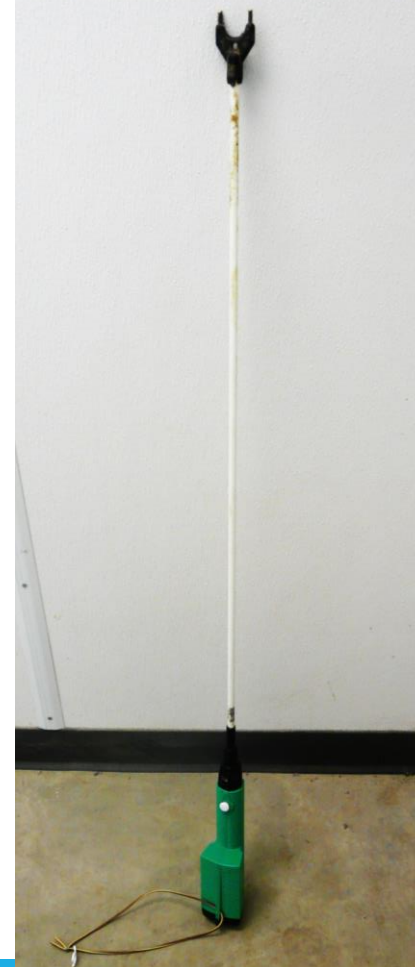
- A plastic paddle used to sort and promote movement of a group of pigs by gently patting their hind quarters.
- Sticks usually have noise rattles inside the paddle helping drive pigs.
- Paddle sticks are used with all species of livestock.



Controlled Movement

Electric Prod

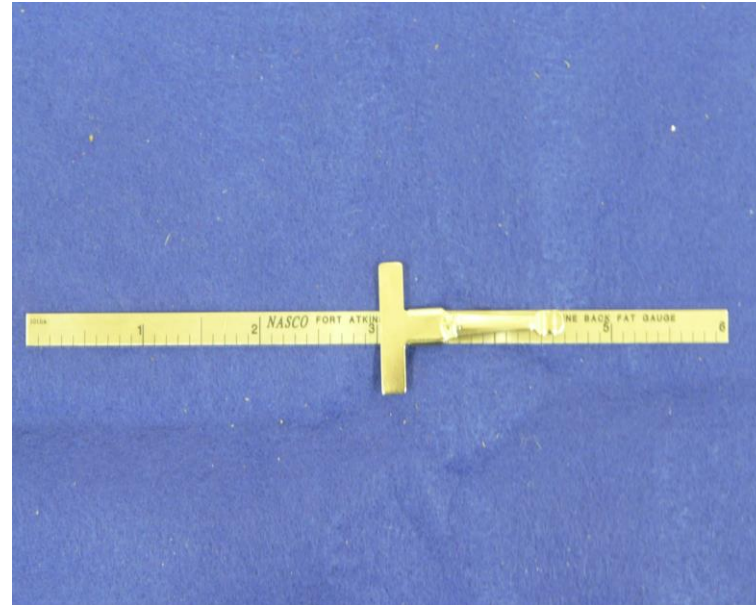
- A handheld device used to drive and promote movement in pigs by striking or poking.
- The use of prods is not recommended unless absolutely necessary.



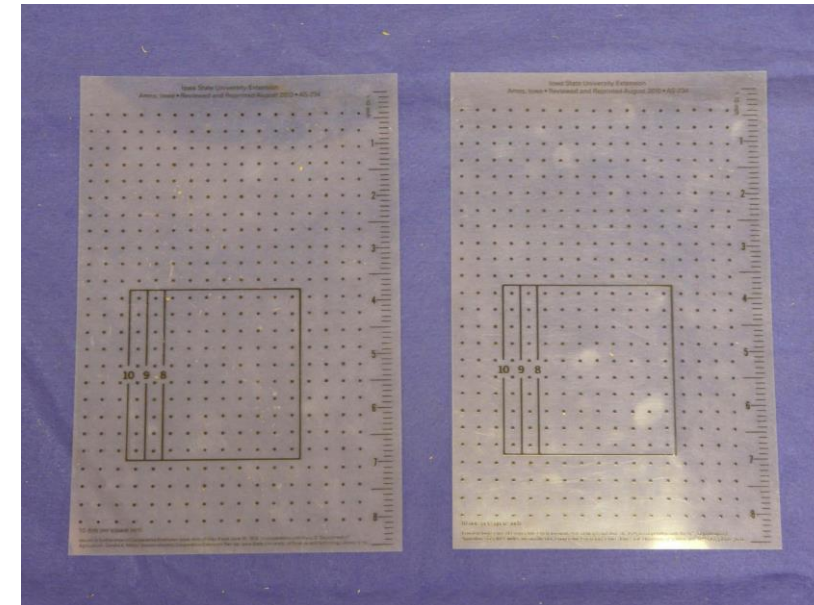
Meat Production

Backfat Ruler and Ribeye Grid

- A ruler is used to measure and predicts the amount of back fat a pig will have after slaughter. Typically used on carcasses, but it can be used on live animals by making a small slit in the skin at the 10th rib location.
- Ribeye grids measure ribeye muscle in swine and are used only on carcasses.



Backfat Ruler



Ribeye Grid

Sheep & Goats



General Management

Scoop/ Barnes Dehorner

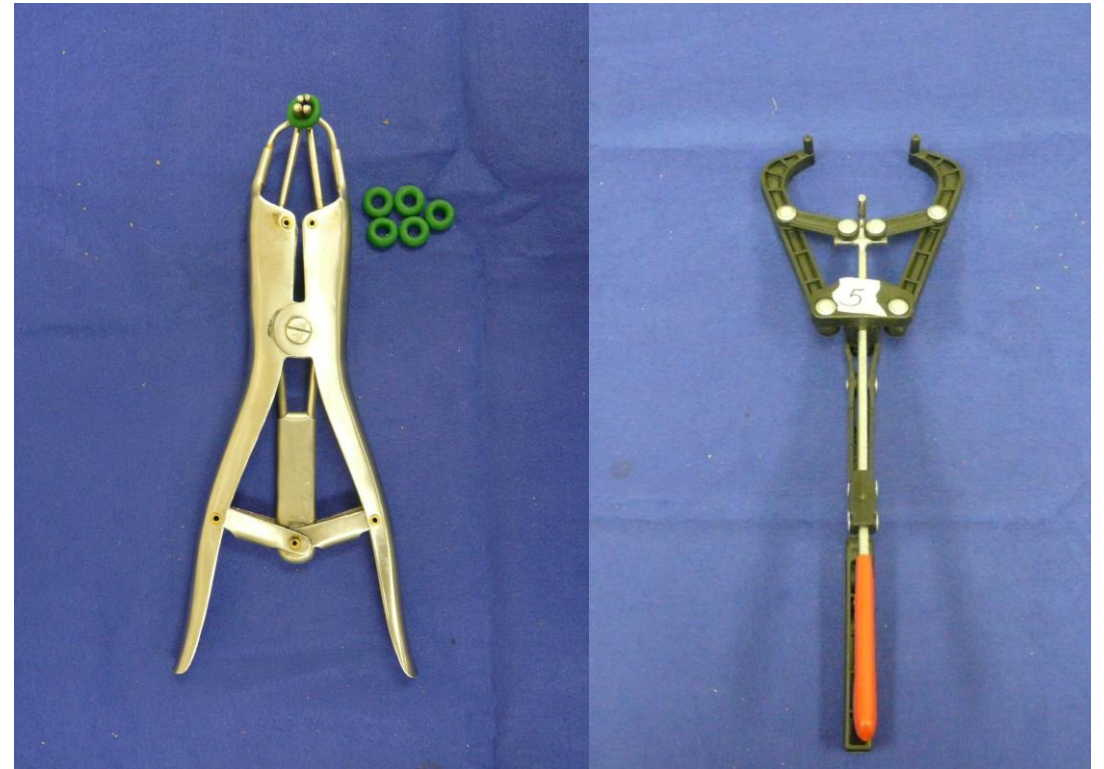
- The horn is pinched until separated from the head.
- Barnes dehorner are designed to remove smaller horns.



General Management

Elastrator

- The scrotum is banded with a rubber ring that cuts off circulation to the testicles resulting in the scrotum falling off.
- Banding doesn't leave an open wound making it ideal for older animals.
- Banding is also a common method of castration in younger calves.



General Management

Emasculatome and Emasculator

- Emasculatome crushes the spermatic cords but doesn't cut the skin or arteries to scrotum. May also be called a burdizzo.
- Emasculatomes can be used on older animals.
- An emasculator is a metal tool that crushes cords and blood vessels then cuts the scrotum.
- Emasculators are also used for tail docking.
- The crushing side should be placed closest to the animal's body, with the cutting side to the outside.



Emasculatome



Emasculator

Reproduction

Marking Harness

- A harness with a crayon pinned to the chest area helping identify which ewes have been bred.
- This method of identification is ideal for purebred sheep farms because it keeps track of which rams have serviced ewes.



Reproduction

Sheep Paint

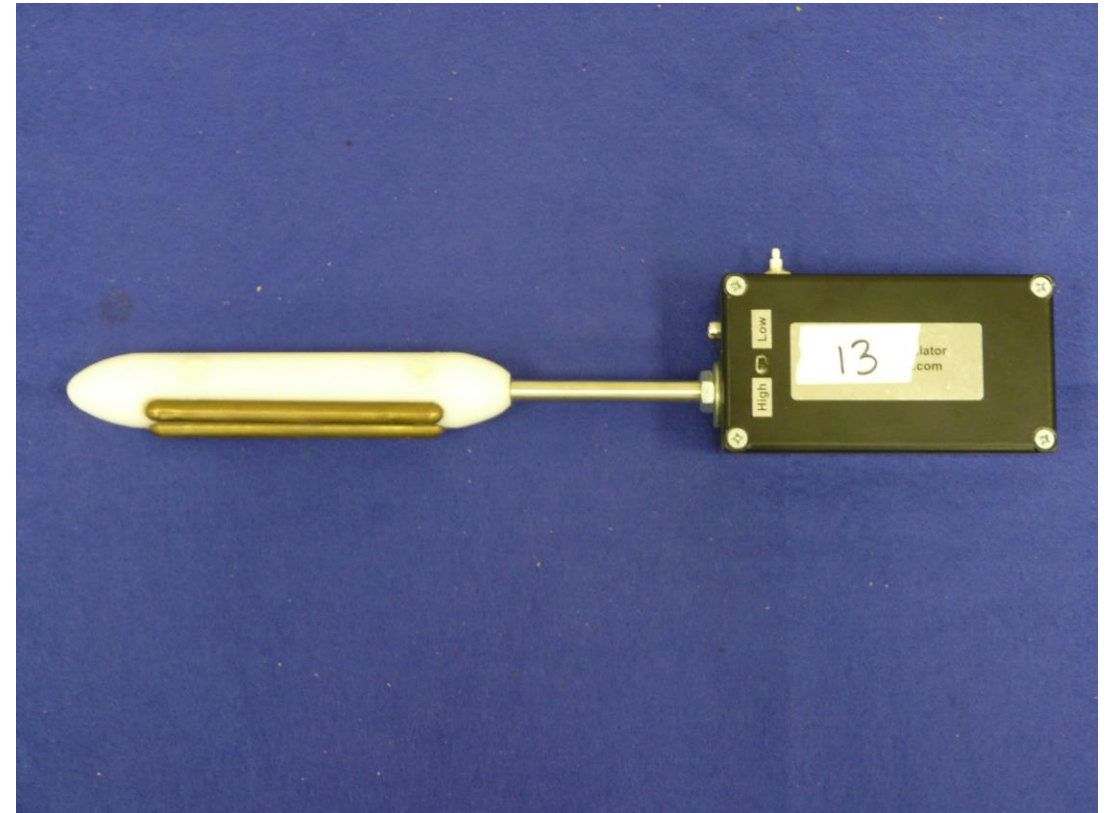
- A special type of paint that is scorable (can be removed from wool) is used to identify sheep for a variety of reasons.
- It is mostly commonly used to sort sheep during breeding season.



Reproduction

Ram Electro-Ejaculator

- A device inserted into the anus that vibrates and stimulates the ram for semen collection.
- Repeated use of electro ejaculation is not recommended.



Reproduction

Artificial Vagina

- A ram or buck mounts a teaser doe/ewe, but his ejaculate is directed into the artificial vagin for sperm collection.
- The inner rubber lining should contain water at 100°F to create the same stimulation as natural breeding.



Reproduction

Lambing Jug

- A pen that holds a ewe and newborn lambs to allow easier suckling and bonding between ewe and lambs.
- The size of a lambing jug should be dependent on the breed of the ewe.



Reproduction

Ewe Spoon and Prolapse Ring

- Spoons and rings are plastic insertions used to prevent and treat prolapses. Spoons treat vaginal prolapses while rings are commonly used for rectal prolapses.
- Rings are cylinder shaped pieces.
- Spoons are “T” shaped with three tying holes to secure it.
- Animals can still give birth and urinate with the spoon inserted.



Ewe Spoon or Prolapse
Retainer

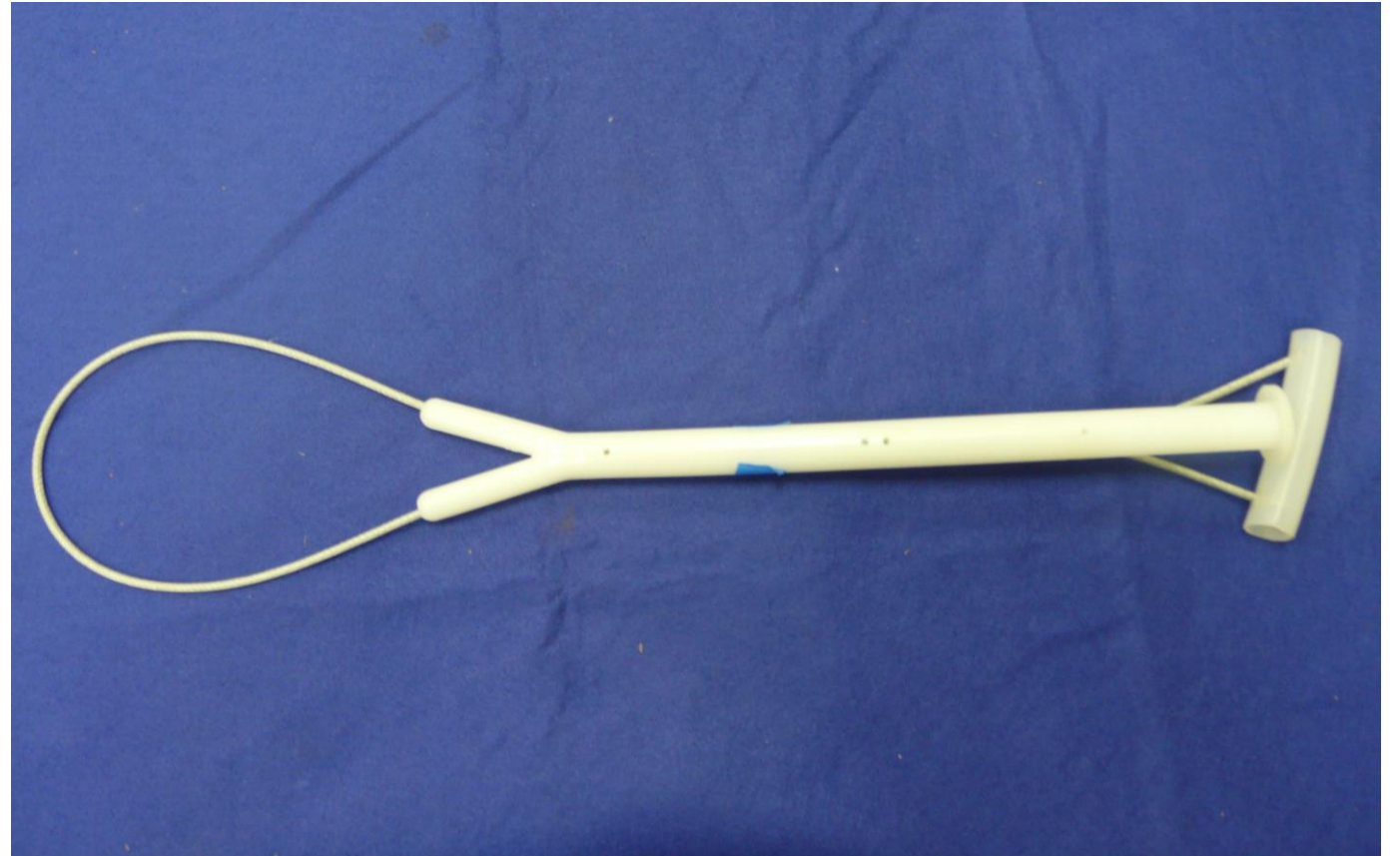


Prolapse Ring

Reproduction

Lamb Puller

- A tool resembling a snare that assists with difficult birthing without causing harm to the lamb or ewe.
- Pullers can be used for dystocia in does also.



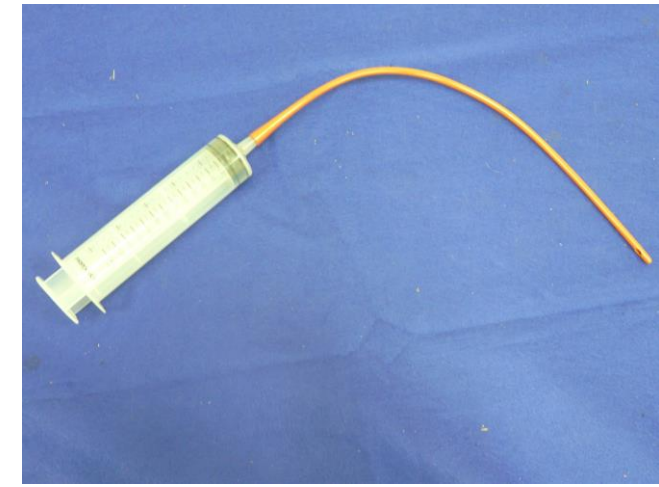
Feeding

Feeding Tube (Esophageal Feeder) and Pritchard Nipple

- Pritchard nipples are artificial nipples designed to help nurse orphaned lambs.
- Pritchard nipples can also be used to nurse goats.
- A feeding tube is inserted into a lamb or kid's esophagus.
- Tubes are typically used to feed weak, newborn offspring.



Pritchard Nipple



Feeding Tube

Grooming

Shears and Shearer Screwdriver

- Hand shears are scissor like tools used to remove wool. They are most commonly used in preparing animals for show.
- Most producers use electric shears to manage their sheep's wool.
- A shearer screwdriver is a device used to help change and secure combs and cutters on electric shears.



Hand Shears



Shearer Screwdriver

Grooming

Hoof Trimmer

- Hoof trimmers are used to cut off the edges of overgrown hooves on sheep and goats.



Hoof Trimmers

Grooming

Wool Card and Wool Rake

- The wool card is designed to separate and straighten sheep wool.
- A wool rake is a grooming brush designed to remove dead undercoat.



Wool Card

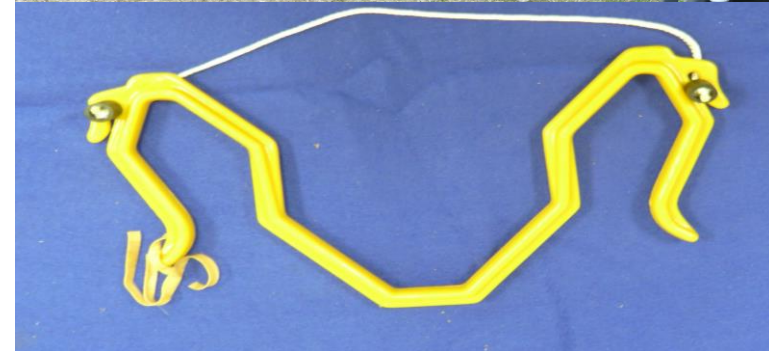


Wool rake

Restraint

Gambrel Restrainer & Trimming Stand

- In the gambrel restrainer, the forelegs and head are restrained for easier foot trimming, lambing and holding in the gambrel restrainer.
- A trimming stand keeps the animal standing by restraining the neck.
- Trimming stands are primarily used for grooming.



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