

## Basic Farm Animal Husbandry Skills

**Being a responsible livestock owner means learning to recognize and care for illness in your herd. Here are some key ingredients to keeping your animals healthy and your vet bills down.**

By Dr. Lyle G. McNeal

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When drenching, deposit the medication far back in the mouth near the root of the tongue.

Over the years I have learned that many folks who take on a farm are not always well informed or skilled in the basics of general animal husbandry.

Though we have many outstanding veterinary practitioners in America, many are either not accessible, unaffordable, or ill-trained in the care of large farm animals and exotic quadrupeds.

I've always felt strongly that when we take on the responsibility of raising and rearing any specie of farm animal, we take on burdens similar to having children.

Most families know how to monitor the general health and well-being of their children, monitoring behavior observation, eating and drinking habits, temperature, respiratory or digestive disorders, cuts, abrasions, and other forms of major and minor trauma.

### Some General Rules for Administration of

Veterinary Biologics Read and follow label recommendations. Use sanitary procedures and avoid contamination. Carefully cleanse and disinfect the site of injection. Sterilize instruments by boiling at least 5 minutes, or use another approved veterinary cold disinfectant. Administer the full recommended dose. Mix biologics only if the instructions specify to do so. Do not save unused contents of multi-dose containers. Check for expiration dates.

Top

Most families also provide preventative vaccinations for protection from childhood diseases.

Top

Guess what? Domestic farm animals are not much different than us!

However, certain skills are required of the animal caretaker that may require further education--the best is hands-on experience coupled with book or semi-technical learning.

My grandfather always taught me an important practice that I still follow: "If you take care of your animals, they will take care of you." I can honestly attest to the truthfulness of this statement through my many decades of experiences.

Certain basic skills are necessary for any livestock owner to properly care for his herd, understand animal vital signs and prevent disease. By learning these basic skills, you will not only save animals, but reduce veterinary costs. The following skills will make you a better livestock husbandman: Observation

Animal restraint

Taking and evaluating vital signs

Basic wound care

Ruminant hoof care

Administration of oral medicines

Administration of injectible vaccines, antibiotics, etc.

Top

Observation

In today's world of corporate, large-scale livestock operations and in confinement facilities, employees do not really observe the animals under their care.

They may look at them periodically, but to observe is more than a simple walk-by in a barn, pasture, dry lot or paddock.

Far too often, hired help just throws out the hay, puts grain in the feeders and checks the waterers without looking at each individual animal.

A good husbandman must have a sincere and desirous interest to care for his animals. For this reason, it is important to have the same person or persons oversee certain animals, flocks, pens, corrals or herds and spend time each day strictly observing their behavior.

If the caretaker knows his or her animals normal behavior, then the early stages of a health problem will be recognized and can be treated earlier, saving the possible loss of one or more animals, significant veterinary costs and a reduction in the earning ability of your herd.

Important animal characteristics to monitor on a daily basis are: abnormal behavior stance, movement, back and ear posture nasal discharge rubbing fecal consistency (i.e. scours, blood in feces or internal parasite body parts) tail carriage body condition hair quantity and quality lameness and localized swelling.

Any abnormal conditions should direct the caretaker to take the vital signs of the abnormally behaving animal.

Livestock owners should also be familiar with common regional and local diseases and parasites that may affect their animals and monitor the various portals of entry such as nose, eyes, anus, udder, or injuries such as shearing cuts or tail-docking wounds.

Top

Animal Restraint

To successfully manage livestock on any level, you must have a basic knowledge of animal psychology and behavior.

When catching and restraining animals for examination and treatment, stress must be minimized to the animal as well as to the handler.

Undue stress imposed on an animal can reduce the efficacy of health care and slow the healing process. If an animal has an unpleasant initial experience, additional treatments may be more difficult to carry out.

In general, when handling an animal, avoid excessive noise, rapid and jerky movements, hot shots or electric prods and night-time hours. Reducing the presence of unknown people and unfamiliar handling protocols will also minimize animal stress.

Most farm animals can be treated standing on their feet, but occasionally an animal may need to be cast (laid on its side) for treatment. If extra help is required, provide individuals with basic instructions on what you're wanting to do and how you want them to respond and conduct themselves during that time.

Each of the large-animal domestic species has unique restraint tools and recommendations--become familiar with proper handling techniques and equipment.

Top

#### Taking Vital Signs

Vital signs include the animal's temperature, pulse and respiration rate.

#### Temperature

An animal's temperature should always be taken via the rectum. (Novices occasionally insert the thermometer into the vaginal area in females, which is ineffective.) The rectum on females is always above the vulva and closest to the tail or dock of the animal.

Prior to inserting the thermometer into the animal, disinfect it with either isopropyl alcohol or Novalsan (a veterinary antiseptic agent) and coat with plenty of lubricant. The tissue in the rectum can be torn or perforated easily if lubricant isn't used.

#### Normal Vital Signs for Common Farm Animals

Temperature  
(± 1F)

Pulse  
(Heart Rate) (rate/min)

Respiratory Rate,  
Resting  
(breaths/min)

#### Cattle

101.5 (100.4-102.8)

50 (40-70)

30

#### Horse

100.0 (99.1-100.8)

45 (25-70)

12

#### Sheep

102.3 (100.9-103.8)

75 (60-120)

19

#### Goat

102.3 (101.3-103.5)

90 (70-135)

15

Swine

102.5 (101.6-103.6)

60 (55-85)

16

Various types of veterinary thermometers are available in a range of prices.

The traditional, older-style thermometer contains mercury at one end of a sealed glass tube; with the increase in temperature, the mercury expands along the column and readings are taken from the height of the column.

Using this type of thermometer has its risks, particularly with animals not used to being handled or restrained.

If an animal moves abruptly and inadequate lubricant was used, the thermometer can break and shattered glass and mercury can cause rectal trauma and damage.

A safer option is the smaller, less expensive, digital-probe veterinary thermometer. Always tie your thermometer to a string with a clip attached to the end so as not to lose it inside the rectum should the animal startle or move away.

Top

Pulse or Heart Rate

To take the pulse or heart rate of animal, locate the pulse at the angle of the lower jaw bone, where it can be felt by pressing the artery against the bone. To calculate beats per minute, count the beats for 15 seconds and multiply by four.

Respiration

To take the respiration rate of an animal, count its number of breaths per minute by watching the flanks or by watching for nostril movements or flares. For normal temperature, pulse and respiration rates, see "Normal Values" sidebar. If your animal's values are found to be higher or faster than normal, you have an indication that it is most likely ill.

Basic Wound Care

Despite even the most preventative and conscientious animal husbandry, wounds happen. Common wounds include lacerations, punctures, abrasions, bruises (contusions), burns or ruptured abscesses.

Lacerations

Lacerations are torn or ragged wounds generally caused by sharp objects such as metallic objects, glass, barbed wire fences, protruding fencing wire, baling type wire, etc. Lacerations often can be stitched by your veterinarian if found within 24 hours of the injury.

Punctures

Puncture wounds are holes or perforations due to piercing from nails, fence staples, wood splinters, etc. Puncture wounds can penetrate tissue more deeply than lacerations and debris deep within a wound is a concern. All internal dirt must be removed or infection may result. Puncture wounds may not bleed excessively but are very serious injuries.

Abrasions

Abrasions affect only the surface layers of the skin and are the result of rough surfaces, such as that of working corrals, stalls, trailers, halters, ropes, general tack, straps, etc., coming into contact with skin. Abrasions can be deep and require additional medical attention.

Bruises

A bruise is skin discoloration due to the release of blood from ruptured vessels following a traumatic injury or improper handling. The hair on domestic animals generally conceals bruising, but swelling can occur at the bruise site.

Burns

Livestock burns are commonly cause by chemicals, electricity, sunlight (with light-skinned animals) and heat. The

magnitude of the burn can vary from mild redness to blistering, or actual destruction of the skin. Burns vary in severity and their treatment requirements.

#### Abscesses

An abscess is a localized accumulation of pus surrounded by a fibrous capsule and can occur nearly anywhere on the body. Abscesses and their origins can be very complicated, but many are caused by bacteria that spread to other areas of the body. When external, abscesses are more susceptible to rupturing; a ruptured abscess usually discharges its pus and heals. However, the wound may continue to release pus that can spread infection to other animals.

When treating a wound, proper restraint is critical in administering care, medications or the application of bandages.

[Top](#)

#### Treating the Wound

The most important tool to treating animal injuries or wounds is the first-aid kit. When injury strikes and veterinary care isn't feasible, you must be prepared to provide emergency veterinary medical care.

One way to prepare for these circumstances is to meet with your local large-animal veterinarian and get his or her recommendations for the development of an essential on-farm first-aid kit.

On-Farm First-Aid Kit  
Veterinary small digital rectal thermometer  
Veterinary lubricant  
Halter and lead ropes or other appropriate animal specie restraint devices  
Hobbles and/or twitch (for horses)  
Pre-moistened towelettes  
Cotton roll  
Sterile saline solution  
Isopropyl alcohol  
Novalsan® disinfectant  
Two empty (generic) spray bottles for possible needs  
Fly spray repellent/wound treatment  
Nutritional and/or anti-scour drench in pump bottle  
Disposable syringes in 3, 6, 12 and 60 ccs  
Six (6), ½" x 18 gauge sterile, disposable needles  
Six (6), ¾" x 18 gauge sterile, disposable needles  
Two (2), ¾" x 16 gauge sterile, disposable needles  
Gauze rolls  
Package of sterile gauze pads  
Two (2) gauze bandages  
Two (2) rolls of elastic tape  
Dose syringe  
Balling gun and/or pill forceps  
Dehorning tools (if applicable)  
Electrolytes for newborns  
Milk replacer for orphaned newborns  
Bottle(s) and appropriate nipples for milk replacer  
Antibiotic ointment or salve  
Optical (eye) antibacterial ointment or dust  
Blood stopper, i.e. hemodust  
Mineral oil  
One (1) propylene glycol  
Udder infusion antibiotic  
Two (2) or more pairs of disposable, sterile surgical gloves  
One (1) pair of stainless steel veterinary surgical scissors  
One (1) each of veterinary forceps and hemostat  
Injectable antibiotics  
Topical antibiotics (aerosol)  
Obstetrical pullers  
Stomach tubes  
Bloat medicine  
Foot trimming shears  
Hoof knife and hoof pick (for horses)  
Hair and/or wool trimming shears (electrical and/or manual)  
Adequate supply of OB (obstetrical) gloves for the birthing season  
Tincture of Iodine (7%)  
Iodine spray (1%)  
Heat lamp (for lambs, goat kids, and piglets)  
Notebook and ballpoint pen

[Top](#)

Another source for this information is your local Cooperative Extension County Agent, who usually has access to the expertise of the State Extension Veterinarian. For our recommendations, see "On-Farm First-Aid Kit" sidebar.

Once the animal is restrained, your primary objective should be to halt blood loss.

Blood-stop powder, or hemodust, will help stop blood loss in most minor wounds. Some wounds will need to be wrapped with absorbent material, such as gauze pads, and have pressure applied directly to it. It is important to stop blood loss as soon as possible.

#### Making Meds Easy

Getting your livestock to take medicines, either pill form or liquid, can be a bit tricky—especially if they are picky eaters!

Here are some hints to get your animals to take their medicine a bit easier: Put smaller pills in treats such as carrots, shredded wheat cereal or animal crackers.

If you are administering a small amount of liquid, a marshmallow is great at disguising the medicinal taste.

If you need to feed multiple pills to larger livestock, place them in a large syringe with some water, wait for them to

dissolve, and administer the meds as you would a liquid. The water can be flavored with a powdered drink mix or juice, or you can use applesauce instead of water (the thicker sauce mixes with and disguises the medicine better).

Mix medicines with mint-flavored Maalox for easy administration of pills and powders to horses. An added benefit? The Maalox will coat the stomach, helping to prevent possible upset.

Fruits such as bananas and oranges are often used to mix with medicines to disguise their flavoring and to encourage the animal to ingest the meds. -- HF editors

Top

The next step is to clean the wound location.

It's best to trim or clip any hair surrounding the wound.

The wound should be cleansed and free of debris, foreign materials and feces. Irrigate the wound with a clean, disposable syringe (without a needle) with saline solution, isopropyl alcohol or clean water.

Saline is the preferred solution for cleaning wounds since it will not interfere with other cell and tissue functions.

Once the wound is clean, evaluate it and classify it as a laceration, puncture or abrasion to determine your course of treatment.

You can classify wounds based on their appearance: a laceration is a wound with torn and ragged edges; a puncture wound is a deep wound or hole in the skin, dermal tissue and other layers caused by a sharp object (ie: nail, fence staple, piece of metal); abrasion: a wound in which the skin or other external surface is scraped, scratched, torn or otherwise exposed.

Most livestock supply stores and catalogs have various topical agents in the form of salves, aerosols, powders and injectibles.

Antibacterial products are essential because bacterial infections result from most wounds and post-wound treatment or non-treatment.

During the warmer months when flies are present, it is critical to apply a fly repellent near the wound to prevent flies from laying eggs inside the wound.

Once the wound is treated, apply antibacterial ointment and place clean cotton or a cotton gauze pad onto the wound.

Top with an elastic gauze (like Vetrap) bandage, but be sure not to wrap too tightly. Bandages should be checked at least twice daily and changed every other day.

Once the wound starts to heal, bandages can be changed less frequently, every two to three days.

Other treatments for the various wound types may involve administering a tetanus shot.

Systemic treatment with injectable antibiotics, such as penicillin, oxytetracycline and terramycin, may also be necessary based on your vets assessment that the wound is (or could become) infected.

Your vet will check for infection by taking your animal's temperature, checking to see if the site of the injury is sore and hot, and monitoring breathing and respiration rates.

If an infection is present, an animal normally has an elevated temperature and heart rate, as well as heat and soreness at the injury site. If you and your vet determine antibiotics are necessary, discuss proper dosage and length of treatment. If you are using a product from a previous incident, be sure it has not expired.

Top

#### Hoof Care

Hoof care is one of the most important animal husbandry skills to learn and master.

Hoof injuries and improper hoof care can lead to early culling of farm animals, lameness, hoof injury and poor foot paring by the caretaker. It can also lead to a host of other health problems. Owners should learn basic foot and hoof structure of the animals they manage, as well as what a properly trimmed hoof looks like.

Hooves grow at different rates; this rate is determined largely by the environment in which the animal resides.

Animals in the West that are herded and moved over rock and sand, and that travel distances for forage and water, generally do not need much hoof care because of the constant wear on the feet. However, animals confined to barns, corrals or forage pastures will need more attention and more frequent trimming due to a lack of wear and tear from hard surfaces.

The most common hoofcare problem is simply lack of attention by livestock owners.

Without regular trimming, hooves grow excessively long and the toes curl up, making it difficult and uncomfortable for the animal to walk.

In some parts of the United States, professional hoof trimmers can be hired, but in areas where animal density and demand for such services are limited, the owner will have to do his/her own foot paring. Owners should develop a hoof-trimming calendar and schedule regular trimmings based on your animal's needs—a rough estimate for ruminants is once every four weeks. However, in between trimmings, any sign of lameness should be examined closely.

Foot injuries caused by rock bruising, nail or wire punctures, or paring off too much of the foot are not serious. However, foot abscesses and contagious foot rot, evidenced by a foul odor, cheese-like substance and lameness, are conditions that require proper attention and quarantining of affected animals, as well as professional veterinary care.

All hoof wounds, whether caused by environmental conditions or by improper foot paring, should be treated with antibacterial and antifungal hoof dressings such as Koppertox, available at livestock supply stores. These dressings also provide a sealant for the hoof wound or trauma.

Top

#### Oral Medicines

The administration of liquids, boluses (pills or oblets; large pills) or pastes must be done properly, or illness and even death can occur.

Before these can be given safely, the animal must be restrained adequately.

Both liquid drenches and boluses must be administered with the animal's mouth opened and the drench gun or dose syringe placed over the top of the tongue while the head is level, not lifted or tipped. To open the mouth, stand alongside the animal and use your thumb and fingers on one hand to open it while you hold the instrument in the other hand.

To give oral products successfully, it's best to deposit them far back in the mouth near the root of the tongue, where the swallowing reflex nerves are located.

#### Drenching

Drenching is the oral administration of a liquid medication. Regular drenching with anthelmintics (dewormers), bloat treatment agents and some anti-scour products are commonly performed with a drench gun or dose syringe. Automatic drenching guns with a reservoir back pack are available for those who dose a large number of animals.

#### Boluses

Boluses (pills or oblets) are more convenient than liquid products because they tend to have a longer storage life. Common bolus medications include Phenylbutazone (Bute) and sulfamethoxazole (SMZ).

Balling guns or pill forceps can be used to administer boluses. Because boluses are dry and more difficult for the animal to swallow, dip both the balling gun or pill forceps and the bolus into mineral oil, which acts as a lubricant, to ease administration and reduce the possibility of the animal spitting the bolus out or injuring its mouth with the dry bolus.

### Pastes

Pastes are usually deworming agents given to the animal with a caulking-type gun. As with the other oral medical products, pastes must be administered on top of the tongue. Be sure to hold the animal securely until all of the paste has been swallowed.

[Top](#)

### Injectables

Before giving your animal any injectable product, you must receive training by your veterinarian or by a neighbor who is experienced and competent in administering injections.

### Needle Size by Injection Type

**Intramuscular Injection**  
1" to 1 ½" 18 – 20 gauge

**Subcutaneous Injection**  
½" to ¾" 18 - 20 gauge

**Intravenous Injection**  
1" to 1 ½" 18 - 20 gauge

Multiple-injection, gun-type syringes single-use, disposable syringes can be used, depending on your needs. Both are available at livestock and veterinary supply retailers.

Multiple-injection type guns are preferred where large numbers of livestock are involved and repeated vaccinations or boosters must be given.

Syringes may be boiled for cleaning or sterilized using one of the cold veterinary disinfectants such as Novalsan.

Disposable syringes should be used once and discarded.

Needle size depends upon the type of injection and the location where it will be given. The two most common injection types are intramuscular (IM) and subcutaneous (SQ or SC), though knowledge of intravenous (IV) injections is also helpful.

Vaccines or other injections should always be given via the recommended method—an improper route can result in failure of the agent and a localized reaction. Needle length and gauge (diameter) are also important factors for successful vaccination. See "Needle Size by Injection" sidebar for general recommendations for large animals.

### Intramuscular (IM)

Intramuscular injections are picked up by the blood supply and spread to all body tissues fairly rapidly.

Needles at least 1 to 1 ½ inches in length and 16 to 20 gauge in diameter are generally recommended.

The best site to administer IM shots is in and around the heavy muscles of the animal's neck. This site reduces potential muscular damage to the carcass (if for meat purposes) and minimizes possible nerve damage. Animals that are not destined for the meat market can be given IM injections in the rear quarters.

No more than 15 ccs should be given at any one site on the animal.

To avoid unintentional intravenous (IV) injection, pull back on the syringe plunger after you have inserted the needle to be sure no blood flows into the syringe. If blood appears, you have accidentally hit a vein. Pull the needle out completely and re-insert the needle in a new, clean site. You do not need to use a new needle.

[Top](#)

### Subcutaneous (SQ or SC)

With subcutaneous injections, a 3/4 or 1 inch needle of 18 to 20 gauge in diameter is advised. The loose skin located on the side of the neck, behind the elbow or in the armpit are good locations for subcutaneous injections.

These injections are given just under the skin by forming a tent or tepee of loose tissue, but not into the muscle tissue.

Subcutaneous-administered agents are not picked up by the blood supply as quickly as IM injections. As with the IM injection, pull back on the syringe plunger to make sure no blood appears in the syringe when administering a SQ shot. If blood appears, pull the needle out completely and re-insert it into a new site.

### Intravenous (IV)

It is recommended that you learn how to administer an IV injection from a veterinarian or experienced livestock owner. The rapid injection of any medication can be lethal; all IV injections should be given slowly.

Intravenous injections are quickly spread to all body tissues.

This is critical in instances where an animal may need medications or fluids immediately because of sickness or dehydration. Cases of scours, milk fever (hypocalcemia), grass tetany (hypomagnesemia) and pregnancy toxemia (ketosis) usually require immediate IV fluids. When giving IV injections or medicinals, generally a 1 to 1½ inch, 16 to 18 gauge needle is recommended.

The best location to give large volume IV injections is in the jugular vein, located in the neck.

### Intramammary Infusion

An intramammary infusion is an antibiotic used to treat mastitis in cows, goats, ewes and other animals. Infusions are sold in plastic tubes with smooth, plastic needles for insertion into the udder of the infected animal.

Teats should be cleaned and dipped in a germicidal product before and after treatment to avoid introducing more harmful organisms back into the udder.

### Top

### Needle Choice

It's important to use the correct gauge of needle.

Too large of needle diameter (the smaller number gauge, the larger the diameter) may result in a large wound that allows leakage of the medication, whereas too small a diameter slows down the administration of the injection.

If a needle is too long, it may bend or break inside the animal; too-short a needle will not get deep enough into the muscle tissue for intramuscular injections.

If any needles are bent or dropped on the ground, do not use them. The most commonly used needles and syringes are disposable; all discarded disposable syringes and needles should be placed securely in a sharps container rather than the trash can.

Contact your local veterinarian for recommended disposal of your sharps. Sometimes local human hospitals or veterinary clinics will take and discard them for you.

Finally, the use of animal drugs in farm and food animal production must be accepted as a responsibility rather than a right when trying to improve animal health.

Drugs should be used to enhance a health program, not as a substitute for good management. Disease prevention is based on good nutritional and environmental factors, sanitation and the use of a balanced herd or flock health program.

Use vaccines to prevent common diseases and occasionally segregate or cull infected animals.

Good husbandry practices improves the animal's environment, prevents animal stress that leads to disease and generally reduces the need for drugs. Medications used as a supplement to good management must be chosen carefully with regard for the specific disease problem (causes, diagnosis and prevention). After medication selection, correct dosage and method of administration is key to animal health.

\*This article is not a substitute for veterinary treatment by a licensed veterinarian.

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[Top](#)

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