

WALNUT CREEK SUPPLY

THE COMPLETE CARE GUIDE

# Homestead Cattle

*Pasture, fencing, minerals and a plan for the whole animal's life*



Family-owned in Christiana, Lancaster County, Pennsylvania

**10% of every purchase supports no-kill animal shelters nationwide**

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*New owner? Go straight to Section 1. It is written so you can set up a safe, correct home and get through the first 48 hours without reading anything else first.*

*There is something about standing at a pasture gate at dusk, watching a cow lift her head from the grass and look right at you, that makes a person want a few acres and a bucket. Families come to cattle for all kinds of good reasons: fresh milk and butter, a freezer full of beef from animals they knew by name, manure for the vegetable garden, or simply the old, quiet pleasure of a working pasture. We are a family business in Lancaster County, Pennsylvania. We grow our own food, we keep our own animals, and we respect cattle enough to tell you the whole truth before you bring one home. A cow is not a large dog. She weighs half a ton or more, she lives for many years, she needs a fence that actually holds, a veterinarian who works on large animals, and a plan for her whole life, including how it ends. None of that is a reason to skip it. It is a reason to prepare.*

This guide is written for families starting with one to a handful of beef or dairy cattle on a small acreage. We do not sell cattle, and we have not written about them before, so we are being especially careful and conservative here. Where a number depends on your region, the season, the breed or the individual animal, we give a range and say so. Where we are not certain, we send you to the experts who are: a large-animal veterinarian and an experienced local cattle keeper who can walk your actual ground. Please find both before you buy a single animal. Read the Quick Start first, then come back for the rest.

## SECTION 1

# Quick Start: Your First 48 Hours

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1. **Do the planning before the purchase.** Before any animal is bought, talk to a large-animal veterinarian, an experienced cattle keeper nearby, and your local zoning office. Ask the vet whether they take new small-herd clients and what the farm-call fee is. Ask the mentor to walk your pasture with you. This single step prevents most first-year heartbreak.
2. **Confirm you are allowed to keep cattle.** Zoning, township, homeowner association and deed rules vary widely, and some set minimum acreage, setback distances from neighbors and wells, or limits on animal numbers. Call and ask before you build anything. Do not rely on a neighbor's memory of the rules.
3. **Never plan for just one.** Cattle are herd animals and a lone cow is a stressed, noisy, fence-testing cow. Plan for at least two, ideally of similar size and age. A beef steer paired with a second steer, or a milk cow with a calf or a companion, is the usual starting point.
4. **Build and test the fence first.** The fence and gate must be finished, energized (if electric) and checked before the animals arrive. A new animal in a new place is at its most likely to bolt. Walk the entire perimeter and look for gaps, loose wire, sagging gates and anything sharp.
5. **Set up water and mineral.** A clean trough or tank that holds enough for the whole group, filled and tested for leaks, plus a covered feeder of loose, free-choice cattle mineral with salt. Cattle can drink a startling amount, so check the refill rate before animals arrive.
6. **Stock hay and walk the pasture.** Have good, mold-free hay on hand even in summer, because a new diet or stressful move can interrupt grazing. Walk every foot of the pasture and remove anything toxic, sharp or dangerous: scrap metal, baling wire, old fence pieces, wilted cuttings from trees and shrubs, and any plant on the toxic list later in this guide.
7. **Arrange a safe handling area.** Even a simple pen with a sturdy gate and a way to restrain an animal safely will make the first vet visit calmer. If you cannot restrain an animal, the vet cannot work safely, and neither can you.
8. **Bring the animals home calmly, in the morning.** Arrive early in the day so you have daylight to settle them. Unload into a small, secure pen with water, hay and mineral rather than directly onto the full pasture. Keep voices low and movements slow.
9. **Watch, then watch again.** For the first 48 hours, check them at least three times a day. You are looking for animals that are eating, drinking, chewing cud (the slow, circular chewing of a relaxed, healthy cow), and standing up readily. Anything off is worth a phone call. Write down what you see.

10. **Know your end-of-life plan.** If these animals are beef, decide now where they will be processed and book it. If they are dairy, decide what happens to calves and to a cow that stops producing. Cattle keeping goes much better when this is settled on day one.

## First-Time Starter Bundle

What needs to be on the farm before the animals arrive, and what to look for in each category.

### Essentials

- **A perimeter fence and a gate that closes and latches securely** - sturdy posts, a reliable energizer if you use electric, tight wire, and a gate latch that cattle cannot lift or bump open.
- **An electric fence energizer (charger), insulators, wire or tape, ground rods and a fence tester** - sized for the length of fence you are running and rated for livestock use. A tester is how you know the fence is actually hot.
- **A large water tank or trough with a float valve** - big enough that the whole group can drink without competing, with a drain so it can be scrubbed, and a plan for keeping it from freezing in winter.
- **A covered, free-choice mineral feeder and loose cattle mineral with salt** - a feeder with a lid or roof keeps the mineral dry and usable.
- **Good-quality grass hay and a hay feeder or ring** - a feeder reduces trampling and waste. Buy hay that is bright, clean, dry and free of mold, dust and weeds.
- **A three-sided shelter or windbreak** - dry footing, good airflow, and a roof high enough that animals cannot hit their heads.
- **A handling pen with a headgate or squeeze chute** - a way to hold an animal still and safe for vaccinations, hoof checks, ear tags and vet exams.
- **Livestock-grade ear tags, a tag applicator and a notebook or binder for records** - for identification and tracking treatments.
- **A basic large-animal first-aid kit** - a digital thermometer made for animals, clean towels, disposable gloves, wound rinse, a flashlight or headlamp, and your vet's number on the cover. Ask your vet what else to add, and what not to.

*Ready to set up? Browse the essentials in our collections: Homestead Supplies.*

### Enrichment

- **A cattle brush or rubbing post** - cattle love to scratch, and a sturdy post or mounted brush keeps them off fences and shelters.
- **Rotational paddock supplies** - extra polywire or tape, step-in posts and a second gate, so you can rest pasture and give the herd new grass.
- **Shade trees or a constructed shade structure** - a place to get out of summer sun.

## SECTION 2

# Meet Your Cattle

Domestic cattle (*Bos taurus*, and in some regions *Bos indicus* crosses) are among the oldest partners humans have. They are **ruminants**, which means they have a four-part stomach and digest tough grass and hay with the help of billions of microbes. They spend much of the day eating and then lie down to "chew their cud," bringing food back up to chew it again. That slow rhythm is one of the most reassuring things on a farm. A cow that is not chewing cud is a cow worth a second look.

## Words you will hear

New keepers run into a lot of cattle vocabulary. Here is the short version.

| Term          | What it means                                                                                      |
|---------------|----------------------------------------------------------------------------------------------------|
| Calf          | A young animal, up to roughly six to eight months, often until weaned                              |
| Heifer        | A young female that has not yet had a calf                                                         |
| Cow           | A female that has had at least one calf                                                            |
| Steer         | A male that has been castrated, the usual beef animal for a family                                 |
| Bull          | An intact male, which can be dangerous and is not recommended for first-timers                     |
| Cow-calf pair | A cow with her nursing calf, the unit commonly used for stocking rates                             |
| Freshening    | When a dairy cow calves and begins giving milk                                                     |
| Dry cow       | A dairy cow resting between lactations, usually in the weeks before calving                        |
| Weaning       | Separating a calf from its mother's milk, typically at roughly six to eight months for beef calves |

## Common breeds

Breeds differ in size, temperament, milk, meat and how well they handle your climate. This is a starting list, not a recommendation. Your local mentor will tell you what thrives in your area.

| Breed             | Typical use  | Size            | What keepers like                                       | Honest notes                                                          |
|-------------------|--------------|-----------------|---------------------------------------------------------|-----------------------------------------------------------------------|
| Jersey            | Milk         | Small to medium | Rich, high-butterfat milk; gentle; efficient on pasture | Bull calves have little beef value; Jersey bulls can be unpredictable |
| Holstein          | Milk         | Large           | Highest milk volume                                     | Needs more feed and skilled management; a lot of cow for a beginner   |
| Dexter            | Dual-purpose | Small           | Hardy, small footprint, milk and beef from one animal   | Some carry a genetic condition, so ask about testing                  |
| Milking Shorthorn | Dual-purpose | Medium to large | Good milk, good beef carcass, calm                      | Less common; harder to find                                           |
| Angus             | Beef         | Medium          | Well-marbled beef, hardy, widely available              | Can be skittish with poor handling                                    |

| Breed    | Typical use | Size   | What keepers like                                          | Honest notes                                             |
|----------|-------------|--------|------------------------------------------------------------|----------------------------------------------------------|
| Hereford | Beef        | Medium | Docile, efficient grazers, widely available                | Light skin around eyes can mean more pinkeye and sunburn |
| Highland | Beef        | Medium | Very hardy, lean beef, thrives on rough forage and in cold | Long horns demand extra care in handling and shelter     |
| Galloway | Beef        | Medium | Hardy, thick coat, good on forage                          | Less common; slower finishing                            |

A few practical points about breeds. Smaller animals such as Dexters and Jerseys often suit small acreage better. Horned animals, such as Highlands, need alleys and gates wide enough for horns. Dairy animals are for people who can commit to milking twice a day, every day, with few exceptions. Beef animals are far more forgiving on schedule.

### Lifespan and what "forever" means

Cattle can live roughly **15 to 20 years**, and a well-kept milk cow may keep producing for a good portion of that. Beef animals are usually harvested much younger, often somewhere between about 16 and 30 months depending on breed, feeding and goals. If your plan is to eat the animals you raise, that is a legitimate and honorable choice, but it needs to be a plan made in advance, not a decision reached in a hurry. Families who feel unsure should consider whether a beef steer is right for them, and whether buying beef from a trusted local farmer might be a better fit.

### Herd animals: never just one

Cattle form social bonds and feel safest with company. A single animal alone will pace, bawl, test fences and may become aggressive or depressed. **Plan for at least two cattle.** A bonded pair is easier on you and on the animals. Some families keep a dairy cow with a calf, a steer with a second steer, or a small mixed group. Ask your mentor what works in your area.

### Costs and time: an honest look

Costs vary widely by region, year and how much you do yourself, so treat the categories here as a checklist rather than a budget.

| Category             | What to expect                                                                                                                                                                 |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purchase             | Varies with breed, age, registration and market; ask several local sellers                                                                                                     |
| Fencing and handling | Often the largest up-front cost; a good fence and chute pay for themselves                                                                                                     |
| Hay                  | A 1,000-pound adult can eat roughly 25-30 pounds of hay a day when there is no pasture, which can add up to a couple of tons or more per animal over a long winter, plus waste |
| Mineral and salt     | Modest but ongoing                                                                                                                                                             |
| Veterinary care      | Vaccines, parasite checks, farm-call fees and the occasional emergency; budget a cushion for the unexpected                                                                    |
| Processing (beef)    | Kill fee, cutting and wrapping fees, often charged per animal and per pound; ask your processor                                                                                |
| Time                 | Daily chores of roughly 20-45 minutes for a small beef group, more for milking (typically two sessions a day)                                                                  |

### Rules, mentors and the whole animal's life

Zoning, health and nuisance rules differ almost everywhere, and some states require identification or premises registration. Check with your zoning office, county extension office and state department of agriculture. Then find a mentor who has kept cattle on ground like yours, pair them with a large-animal vet, and write down a plan for the animal's whole life: grazing, vaccines, calving and, for beef, where and when it will be processed.

## SECTION 3

## Pasture, Fencing & Handling

Good grass is the heart of a cattle operation. It is also the cheapest feed you will ever buy, if you manage it well.

### How much land do you need?

A rough guideline in the Mid-Atlantic is about **1.5 to 2 acres of good pasture per cow-calf pair**. That is a starting point, not a promise. You will need more acreage on thin, rocky, wet or drought-prone ground, and you will still need to feed hay through winter and during dry spells. Smaller breeds such as Dexters can often manage on somewhat less, while large dairy breeds may need more feed. Your county extension office and your mentor can help you estimate the carrying capacity of your actual soil.

| Pasture condition  | What you will likely see                    | What it means for your herd                              |
|--------------------|---------------------------------------------|----------------------------------------------------------|
| Lush spring growth | Fast, tender, high-protein grass            | Bloat and grass tetany risk; introduce animals gradually |
| Early summer       | Strong, dense growth                        | Often the best grazing of the year                       |
| Midsummer          | Slower, tougher growth, less in dry weather | May need hay supplement and shade                        |
| Late summer        | Dry, stalky, low-quality in a drought       | Reduce pressure; supplement as needed                    |
| Fall               | Regrowth with cooler weather                | Good for stockpiling grass for winter                    |
| Winter             | Dormant, little nutrition                   | Hay becomes the main feed                                |

### Rotational grazing basics

Rotational grazing means dividing the pasture into smaller sections (paddocks) and moving the herd from one to the next, letting grazed areas rest and regrow. It is not complicated. A simple version uses portable electric fence to move cattle every few days. The benefits are well-known to grass farmers: better grass regrowth, fewer weeds, less parasite pressure and more even manure distribution. A common rule of thumb is to move animals before they graze grass down to about three or four inches, and to give grass time to recover before it is grazed again. Recovery time varies with season and moisture, so ask a local grazing specialist what to expect.

### Fencing

A fence is a promise to your neighbors, your animals and the road. It needs to hold on the worst day of the year, not just the best.

**Electric fencing** is the favorite of many small cattle keepers because it is affordable, flexible and effective. It works because cattle learn to respect a short, memorable shock, not because the wire is strong. A typical setup uses a quality **charger** (also called an energizer), good grounding, proper insulators and **two to three strands** of wire or polywire, set at about nose height of your cattle. Exact heights depend on breed and the age of the animals, so ask your mentor. Keep vegetation off the wire, because weeds can drain the charge.

**Training animals to respect electric fence** matters. Before turning cattle out on a new fence, put them in a small, well-built pen with a hot wire along one side so they can learn that the wire stings. Bait the wire with a little hay on the other side if needed. Cattle are smart and learn quickly, and once they respect the fence, a single strand is often enough to hold them. A calf that has never met a hot wire will walk straight through it, so train calves with care.

**Woven wire and high-tensile fencing** are sturdier, longer-lasting options. High-tensile wire, under proper tension and with good bracing, makes a strong permanent perimeter. Woven wire fence works well where you need to keep calves in and predators or neighbors' dogs out. Many keepers combine permanent perimeter fence with portable electric interior fence for grazing.

**Barbed wire** is common on older farms, but it can injure animals and is not always the best choice around young calves or a new group. Ask your vet and mentor what they use and why.

| Fence type                           | Best use                    | Pros                           | Cons                                  |
|--------------------------------------|-----------------------------|--------------------------------|---------------------------------------|
| Portable electric (polywire or tape) | Interior paddocks, rotation | Cheap, fast to move            | Needs training and regular testing    |
| Permanent electric (2-3 strands)     | Perimeter or interior       | Affordable, effective          | Needs good grounding and maintenance  |
| High-tensile                         | Permanent perimeter         | Strong, long-lasting           | Installation skill and bracing matter |
| Woven wire                           | Small paddocks, calves      | Sturdy, keeps small animals in | More costly, harder to install        |
| Board or rail                        | Handling areas, front yard  | Attractive, visible            | Expensive, high maintenance           |

## Gates, shade and shelter

Choose wide gates on strong posts with latches cattle cannot lift or bump open, and keep gateways graveled and well drained.

Cattle need shade in summer and a dry, wind-protected place in winter. A **three-sided shelter** that opens away from the prevailing wind is usually enough for hardy adult cattle. Make sure the shelter is tall enough, well drained, and big enough that lower-ranking animals are not trapped by more dominant ones. Good airflow matters more than heat: damp, stuffy barns invite respiratory problems. Calving and milking may call for a more enclosed, dry area, which we cover later.

## A handling setup for safe vet work

Every cattle keeper eventually needs to hold an animal still. A simple handling system is a safety investment and a kindness to the animal. A basic layout includes a **holding pen**, a narrow single-file **alley** (sometimes called a race) and a **headgate or squeeze chute** that restrains the animal for vaccinations, hoof work, health checks and calving help.

Here is a simple labeled layout.

| Step (in the order cattle move through) | Part of the setup                  | What it does                                         |
|-----------------------------------------|------------------------------------|------------------------------------------------------|
| 1                                       | Pasture gate                       | Lets animals come in from the field                  |
| 2                                       | Holding pen (the gathering corral) | A roomy pen where the group settles before work      |
| 3                                       | Sorting gate                       | Lets you split off the animal you need               |
| 4                                       | Alley (a narrow single-file lane)  | Moves one animal at a time toward the chute          |
| 5                                       | Squeeze chute with headgate        | Holds one animal safely for the vet or for treatment |
| 6                                       | Exit gate                          | Releases the animal back to the pasture              |

| Part of the layout | What it does                                                                       |
|--------------------|------------------------------------------------------------------------------------|
| Holding pen        | Gathers the herd calmly before work begins                                         |
| Sorting gate       | Lets you separate animals one at a time                                            |
| Alley              | A narrow lane that moves animals in single file and keeps them from turning around |
| Squeeze chute      | Holds the animal still from the sides for safe handling                            |
| Headgate           | Catches the neck so the head can be held for treatment                             |
| Exit gate          | Lets the animal out the far side once finished                                     |

You do not need a custom-built system to begin. Many families buy a sturdy used portable chute, or use a pen, a rope halter and a headgate built into a corner. Your vet will tell you what they need to work safely on your farm.

### Safety around cattle

Cattle are gentle most days and can be dangerous in a second. Please read this list carefully.

- **Cows with calves are protective.** A mother who is calm every other day may charge when you approach a newborn. Respect the calf-and-cow bond, and have a barrier between you and them when working.
- **Bulls can be dangerous.** Even bulls that seem docile can injure or kill. For a first-time keeper, a steer, a heifer or **artificial insemination** (arranged through your vet or a breeding technician) is the wiser choice.
- **Never turn your back** on a large animal, especially one with a calf, in heat or newly arrived.
- **Always have an escape route.** Know how you will get out of a pen if an animal charges. Stand near a gate, a post or a fence you can slip through.
- **Keep children out of the pens.** Children are small, quick to startle animals and easily hurt. Teach them to enjoy cattle from the other side of a fence.
- **Work quietly.** Slow movements, low voices and predictable behavior keep cattle calm. A rushed, noisy handler gets a rushed, nervous herd.

## SECTION 4

## Bedding, Footing & Manure Management

A 1,000-pound cow produces a great deal of manure every day, so you are in the manure business whether you plan to be or not. The good news is that cattle manure is mild, valuable and, handled well, a gift to your garden.

### Bedding and footing

Cattle on pasture in good weather need little or no bedding. Bedding matters during calving, in winter shelters, in sick pens and in barns. Pick what is available and affordable where you live.

| Bedding       | Pros                            | Cons                                                                       |
|---------------|---------------------------------|----------------------------------------------------------------------------|
| Straw         | Absorbent, warm, composts well  | Cost varies; can be dusty; keep dry and free of mold                       |
| Wood shavings | Very absorbent, low dust        | Use only clean, untreated shavings; <b>never use black walnut shavings</b> |
| Hay waste     | Free if you have it             | Can be damp, moldy or full of weed seed; fine for a pad, not for calving   |
| Sand          | Clean, drains well, comfortable | Only for managed dairy systems; handling is a project                      |

Remember that bedding must stay dry. Wet bedding becomes a bacterial soup that invites mastitis in milking cows, foot problems and respiratory trouble. If bedding is damp, remove it, not just add more on top.

### Avoiding mud in gateways

Mud is the quiet enemy of cattle farms. It causes foot rot, hoof problems, cracked skin and general misery. Heavy-use areas such as gateways, water troughs, feeders and shelter entrances are the first to turn into mud pits. Build them up with geotextile fabric and compacted gravel or stone, or move the feeder and trough around so no one place takes all the traffic. Slope ground so water runs away from where animals stand. A well-drained gateway is cheaper than a vet bill.

### Composting manure

Composting turns manure and bedding into a stable, earthy soil amendment. A basic pile is simple: layer manure with carbon-rich material such as straw or leaves, keep it as damp as a wrung-out sponge, and turn it occasionally. A hot compost pile reaches temperatures that help reduce pathogens and weed seeds, but the right management matters, and a pile that never heats is just aged manure. Keep compost piles well away from wells, streams and drainage paths. Your county conservation district or extension office can tell you about local rules on manure storage and runoff.

### Using manure in your garden

Cattle manure is gentle compared with some other manures and tends to be lower in nitrogen. For vegetable beds, **compost it or age it for roughly 6 to 12 months** before use. Aging reduces pathogens and the risk of burning plants.

**Raw manure and food crops.** Organic growers commonly use a simple timing rule: apply raw manure at least **90 days** before harvest for crops whose edible part does not touch the soil, and at least **120 days** before harvest for crops that do (such as carrots, lettuce and strawberries). Rules vary by certifier and program, so check your own standards, and when in doubt, compost it.

**Persistent herbicides: a serious warning.** Some herbicides used on hay fields and pastures can survive the digestive system of an animal and the compost pile, and then show up in your garden, where they can curl, stunt or kill tomatoes, beans, peppers and other broadleaf plants. This is known as persistent herbicide contamination. It can affect hay you buy, pasture you rent and manure you bring in. **Ask every hay seller and every manure source about their spraying history**, and do not guess. If you are unsure, test a small area first by growing a sensitive plant such as a bean in a pot of the compost and watching the leaves.

## SECTION 5

## Forage, Water & Minerals: The 3 Numbers

For cattle, health starts with three simple numbers. Get these right and many other problems never appear.

| The 3 numbers | Rough target for an adult                                     | What changes it                           |
|---------------|---------------------------------------------------------------|-------------------------------------------|
| Forage intake | About 2 to 3 percent of body weight in dry matter per day     | Season, quality, lactation, cold, growth  |
| Water         | Roughly 8 to 15 gallons per day in moderate weather           | Heat, lactation, diet, water quality      |
| Minerals      | Loose, free-choice cattle mineral with salt, always available | Region, forage, soil, species, vet advice |

### Number 1: Forage

A 1,000-pound cow needs roughly **20 to 30 pounds of dry matter per day**. Dry matter is the feed with the water taken out, so fresh, lush grass (which can be 75 to 85 percent water) takes more pounds on the scale to supply the same nutrition as hay (about 85 to 90 percent dry matter). Lactating dairy cows and growing animals eat more. Cold weather raises the need for energy as well. In practice, you will watch your animals' body condition, how much grass is left in the pasture, and how much hay they clean up, and you will adjust.

### Number 2: Water

A mature cow generally drinks about **8 to 15 gallons a day** in moderate weather. In hot weather it can be much more, and **lactating cows can drink 20 gallons or more**, often considerably more at peak production. Dairy cows drink big amounts right after milking. Cattle should always have access to fresh, clean water. Dirty, frozen or empty tanks cause problems fast, because cattle that drink less also eat less and produce less. Check water twice a day. Scrub the trough regularly and keep it shaded when possible.

### Number 3: Minerals

Pasture and hay rarely provide perfect mineral balance. Most keepers offer a **loose, free-choice cattle mineral with salt** in a covered feeder. Loose mineral tends to be eaten more reliably than blocks. Here is what you need to know.

- **Ask your vet about your region.** Selenium and copper needs vary widely by region, soil and forage. Some areas are deficient, and over-supplementing some minerals is also a problem. Your vet and your local extension service can tell you what is typical where you live.
- **Do not feed sheep or goat mineral to cattle.** Those formulations differ in copper and other nutrients. Cattle can end up deficient on them, and the reverse is dangerous for sheep.
- **Do not feed products meant for other species without checking.** Some feeds and mineral mixes for other animals contain additives that are unsafe for cattle, or the wrong balance. Always read the label, and ask your vet or mentor if you are unsure.
- **Salt matters.** Cattle need salt. Many cattle minerals include it, and some keepers add plain salt in addition. Ask your vet.

## SECTION 6

## Diet & Nutrition



*Pasture and hay are the foundation. Loose mineral and clean water are always available, and grain is the exception, not the rule.*

Cattle are built to turn grass into milk and meat. The best diet for most small-farm cattle is the simplest one: good pasture and good hay, plus water and minerals. Everything else is a refinement for a particular need, and every change should come with your vet's blessing.

### Grass and hay are the base

Fresh pasture in the growing season and hay through winter and dry spells make up nearly all of the diet for most healthy adult cattle. Their rumens (the first and largest stomach chamber) are designed for fiber. Chewing fiber makes saliva, which keeps the rumen's chemistry steady. A diet short on fiber can upset that chemistry quickly.

### Hay quality

Hay is where beginners spend the most money and make the most mistakes. Good hay is:

- **Bright and green-tinged**, not bleached or brown.
- **Fresh-smelling**, never musty, sour or moldy.
- **Dry**, with no heat in the center of the bale.

■ **Leafy and fine-stemmed**, with seed heads that are not overripe.

■ **Free of weeds, trash and dead animals.**

Hay made late in the season from mature grass is lower in protein and energy than early-cut hay. A **forage test** from a lab can tell you the actual protein and energy content, and your extension office can help you take a sample. Cattle that are growing, lactating, or kept in cold weather often need better hay than dry cows or maintenance steers.

**Moldy hay** is a real hazard. It can cause respiratory trouble and, in pregnant cows, abortion. Do not feed it. Store hay off the ground and under cover if you can.

### Grain: limited, specific, and vet-guided

Most small-farm cattle do well without grain. A little may be useful in particular cases: a lactating dairy cow, a thin animal, or a steer in a finishing program. Grain also carries risk. Too much, introduced too fast, can cause acidosis (a dangerous drop in rumen pH), founder and death. If you decide to feed grain, start with very small amounts, increase over weeks, and ask your vet or a nutritionist what to feed. Never let a cow gorge on a feed bin. If cattle break into the grain, call your vet right away rather than waiting to see what happens.

### Diet changes: slow and steady

Rumen microbes adapt to the feed they are given. A sudden change, especially onto lush spring grass or a new grain, can upset the whole system. **Make every change gradually**, over days to weeks. Introduce spring pasture gradually, a short grazing session at first, preferably after the animals have eaten some hay.

### Feeding dangers to know about

| Danger                 | What it is                                                                                                        | How to lower the risk                                                                |
|------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Bloat                  | Gas trapped in the rumen, most often from lush legumes such as clover or alfalfa, or sudden diet changes          | Introduce lush pasture gradually, feed hay first, and ask your vet about prevention  |
| Grass tetany           | Low blood magnesium, often in early spring on fast-growing grass, especially in lactating cows                    | Provide appropriate mineral, ask your vet about magnesium, and watch animals closely |
| Hardware disease       | Metal such as nails or wire swallowed with feed and lodged in the reticulum                                       | Remove metal from pasture and hay; ask your vet whether a magnet is appropriate      |
| Nitrate poisoning      | Nitrate buildup in drought-stressed or heavily fertilized plants                                                  | Test suspect forage; ask your vet or extension office                                |
| Prussic acid (cyanide) | Released by some plants, such as sorghum family forages and wilted wild cherry, especially after frost or drought | Do not graze suspect plants at risky times; ask about local forages                  |
| Moldy hay              | Mold and toxins from damp storage                                                                                 | Inspect every bale and discard questionable hay                                      |
| Acidosis               | Rapid rumen acid build-up from too much grain or sudden diet changes                                              | Limit grain and increase it slowly                                                   |

### Toxic plants

Cattle are generally careful about what they eat, but hungry cattle, new animals and drought conditions push them toward plants they would normally avoid. Walk your pasture and fence lines, and remove problem plants. Wilted leaves and trimmings from trees are especially dangerous, because wilting can make some plants more toxic and more appealing.

| Plant                              | Where it grows                 | Why it matters                                                                         |
|------------------------------------|--------------------------------|----------------------------------------------------------------------------------------|
| Wild cherry (wilted leaves)        | Fence rows, woodland edges     | Wilting releases cyanide-forming compounds; storm-fallen branches are a classic hazard |
| Yew                                | Landscaping, ornamental hedges | Extremely toxic; a small amount can kill; never dump clippings in a pasture            |
| Milkweed                           | Fields, roadsides              | Toxic to cattle in quantity; dangerous in hay                                          |
| Poison hemlock                     | Ditches, damp fields           | Highly toxic; sometimes mistaken for wild carrot                                       |
| Nightshade                         | Fence rows, disturbed ground   | Toxic in quantity                                                                      |
| Black walnut (shavings in bedding) | Trees and wood shavings        | Better known for harming horses, but avoid any walnut shavings in bedding              |
| Rhododendron and azalea            | Landscaping                    | Toxic; never feed or leave clippings                                                   |
| Bracken fern                       | Woods, open ground             | Toxic over time and in quantity                                                        |

This list is not complete, and plants vary by region. Ask your extension office or a local cattle keeper what to watch for, and take unfamiliar plants seriously. If you suspect poisoning, call your vet right away and keep the plant sample. For help identifying a toxin, the ASPCA Animal Poison Control Center is at (888) 426-4435 and the Pet Poison Helpline is at (855) 764-7661; both can advise on animal poisonings, though your large-animal vet remains your first call for livestock.

### Never feed meat-and-bone meal or banned feeds

Feeding certain animal proteins to cattle is prohibited because of the risk of spreading serious disease. **Never feed meat-and-bone meal, or any product that is not approved for ruminant feed.** Read every feed tag. If the label carries a warning like "Do not feed to cattle or other ruminants," it is not for your herd. When in doubt, ask your vet or your state department of agriculture.

## SECTION 7

## Health, Vaccines & Hoof Care

Healthy cattle are the result of a thousand small habits: good feed, clean water, low stress and a vet who knows your farm. Sick cattle are expensive and heartbreaking, so prevention is the best money you will spend.

### Build a herd health plan with a large-animal vet

Before you buy, find a veterinarian who works on cattle and ask them to help you write a herd health plan. A good plan lists which vaccines to give and when, how to monitor parasites, how to handle calving, which diseases are common in your region, and what to do in an emergency. Keep it in your barn notebook and review it yearly. Ask about after-hours care, because cattle emergencies seldom happen at noon on a weekday.

### Vaccines

Vaccine programs vary by herd, region, age, breeding status and risk, so **your vet should direct yours**. In general, you may hear about:

| Vaccine group                        | What it protects against                             | Notes                                                 |
|--------------------------------------|------------------------------------------------------|-------------------------------------------------------|
| Clostridial ("blackleg" and related) | Sudden, often fatal diseases caused by soil bacteria | Common in many programs                               |
| Respiratory                          | Viral and bacterial causes of pneumonia              | Often given before stress such as weaning or shipping |
| Reproductive                         | Diseases that cause abortion and infertility         | Important for breeding animals                        |
| Leptospirosis                        | A bacterial disease that affects cattle and people   | Ask your vet                                          |
| Others by region                     | Varies widely                                        | Your vet will know what is common nearby              |

Some vaccines require a veterinarian to administer them, or must be given at a particular age, and state rules may apply. Do not guess. Follow the label, handle vaccines as directed, and use clean needles.

### Parasites and fecal egg counts

Cattle carry internal parasites, especially on pasture. Most healthy adults tolerate them well; calves, thin animals and stressed animals do not. Blind, routine deworming has helped create resistant parasites in many herds, so ask your vet about **fecal egg counts**, which are a simple lab test counting parasite eggs in a manure sample. The count helps decide who needs treatment and whether treatment worked. External parasites such as flies and lice matter too, and are covered in the Common Challenges section.

### Hoof care

Hooves grow constantly. On rough, dry ground, wear usually keeps them in shape. On soft, wet ground, or with some breeds and diets, hooves can overgrow, crack or twist. Check feet when you handle your animals. If a cow limps, stands oddly or her hooves look long or misshapen, ask your vet or a professional hoof trimmer. Trimming a standing cow without a proper chute or experience is dangerous, and trimming too much can lame an animal. Treat hoof trimming as a vet or experienced-mentor task.

### Dehorning and castration

Dehorning (removing or preventing horns) and castration (making a bull calf into a steer) are common tasks, but both involve pain, bleeding and risk. They are **vet or experienced-mentor tasks** for beginners. Ask your vet about timing, pain control and

safe methods. Many families buy calves already castrated and disbudded, or choose a naturally polled (hornless) or horned breed on purpose.

### Records, ID tags and premises registration

Keep a simple record for every animal: ID number, birth date, source, vaccines, treatments, weights, breeding and calving dates. Records make vet visits better and protect you at sale or processing time. Ear tags make individual animals easy to identify. Some states require cattle identification or premises registration for certain activities, such as moving animals, selling them or participating in disease programs. **Check with your state department of agriculture** about what applies to you.

### Withdrawal times

Any drug you give a cow, from a dewormer to an antibiotic, comes with a **withdrawal time**: the minimum days that must pass before the animal can be slaughtered for meat, or its milk can be sold or consumed. Read the label every time and write down the date you gave the drug. Ignoring withdrawal times can put unsafe residues in food. If the label is unclear, call your vet. Do not use medications in ways your vet has not approved, and do not give leftover antibiotics from last year without asking.

## SECTION 8

## Calving, Milking & Beef Basics

If you keep a cow, someday she will calve, or she will go through the breeding process that leads there. This is the point where a mentor and a vet matter most.

### Breeding: start simple

For first-timers, **artificial insemination (AI)** is usually safer than keeping a bull, and your vet or a breeding technician can arrange it. If you borrow or board a bull, talk to your mentor about temperament and health testing. Breeding can be tricky: timing, nutrition and health all matter. Cows that do not conceive, or conceive slowly, are common, so ask your vet about breeding soundness checks if trouble arises.

### Gestation and timing

A cow's gestation lasts about **283 days**, a little over nine months, give or take about a week or two depending on breed and the sex of the calf. Mark your calendar with an expected due window rather than a date. Heifers (first-time mothers) are the most likely to have trouble, so extra supervision is smart.

### Signs of labor

Watch for restlessness, separating from the herd, a swelling and loosening around the tail head, a tight and full udder, a clear mucus discharge, repeatedly lying down and getting up, and tail raised or switching. The calf should arrive with two front feet and a nose, in a "diving" position. Labor often progresses in stages, and a healthy cow often needs only a quiet, clean place and your patience.

### A clean calving area

Give her a clean, dry, well-bedded pen or a clean, sheltered paddock, away from wet, muddy ground. Keep other animals away from the area so the cow has privacy. Provide fresh water and avoid crowding. Clean bedding lowers the risk of infection for the calf's navel and the cow's reproductive tract.

### Colostrum: the first meal matters

Newborn calves are born without much immune protection. **Colostrum**, the first milk, is rich in antibodies and must be swallowed in the **first hours** of life, the sooner the better. Calves that miss it are much more likely to get sick. Make sure the calf stands, nurses and swallows. If it does not nurse within the first few hours, call your vet for guidance rather than waiting. The vet can show you safe ways to provide colostrum.

### When to call the vet during calving

Call the vet promptly if:

- The calf is not presented normally (for example, you see only one foot, a tail, or the head with no feet).
- The cow has been in active, strong labor without progress, or labor stalls.
- You can see feet or a nose but nothing moves forward.
- The cow is exhausted, down, or bleeding heavily.
- The calf is born weak, not breathing well, or not up and nursing after a few hours.
- The afterbirth has not passed within roughly 12 hours.

Do not pull hard on a calf unless a vet or mentor has shown you how. Pulling at the wrong angle or time can injure the calf and the cow.

## Milking basics

Milking is a twice-a-day commitment, and some cows can be milked once a day with a calf sharing the milk. It is also a joy. Good routines make milking calm for both of you.

- **Hygiene.** Wash your hands, clean the udder and teats, and discard the first few streams. Use clean, dedicated containers. A clean cow in a clean place is the foundation of safe milk.
- **Routine.** Cows love routine. Milk at the same times, in the same order, and in the same quiet place.
- **Cool the milk quickly,** and keep it cold.
- **Watch the udder.** Heat, hardness, clots, strings or watery milk can mean mastitis.

## Milk safety, raw milk and pasteurization

**Raw milk laws vary a great deal from state to state, and raw milk carries real risk.** It can carry harmful bacteria, even from a healthy, clean cow, and the risk is greatest for children, older adults, pregnant women and anyone with a weak immune system. Many families choose to **pasteurize** milk (heat it to kill harmful organisms) at home. Ask your vet or extension office for safe, approved methods. Check your state rules on selling, sharing or giving away milk, which are often strict.

## Milk fever

Despite the name, **milk fever** is not a fever. It is a drop in blood calcium that can strike a dairy cow around calving. She may become wobbly, cold, weak and unable to stand. It is an emergency. Call your vet at once. Ask your vet in advance about prevention.

## Beef basics

If you are raising beef, your work starts at the end, with the processor.

**Book your butcher early.** Many small processors are booked many months ahead, sometimes a year. Call before you buy a calf, and again as your animal approaches finishing weight.

**USDA-inspected vs. custom-exempt processing.** These are the two main paths in the United States. Meat from **USDA-inspected** facilities can generally be sold to the public as individual cuts. **Custom-exempt** facilities process animals for the owner's own household use, and the meat is typically marked "not for sale." Rules about selling beef by the live animal, a share, a half or a quarter, vary by state, so check with your state department of agriculture before you sell anything. Do not assume that a friend's arrangement is legal in your state.

**Hanging weight vs. take-home.** The **hanging weight** is the weight of the carcass after the animal is slaughtered and dressed, before aging and cutting. It is often roughly 55 to 62 percent of live weight, varying with breed and condition. The **take-home weight** (packaged meat) is typically smaller, often somewhere around 60 to 75 percent of the hanging weight, depending on how much bone and fat is trimmed and how the order is cut. Your processor can give you realistic numbers.

## SECTION 9

## Common Challenges & Solutions

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### Bloat

**What you see:** a swollen left side behind the ribs, discomfort, kicking at the belly, labored breathing, drooling. **Why it happens:** gas trapped in the rumen, often after lush clover or alfalfa, or sudden diet changes. **What to do:** move the animal off the feed and keep it calm; do not wait. **When to call a vet:** immediately. Bloat can kill within hours.

### Scours in calves

**What you see:** watery or pasty diarrhea, a dull calf, sunken eyes, weakness, not nursing. **Why it happens:** infections, dirty or muddy calving ground, missed colostrum, stress. **What to do:** keep the calf warm, dry and nursing, and follow your vet's fluid advice. **When to call a vet:** the same day, because dehydration moves fast.

### Mastitis

**What you see:** a hot, hard or swollen quarter, clots or watery milk, a cow off her feed. **Why it happens:** bacteria entering through the teat, from dirty bedding or poor milking hygiene. **What to do:** strip the quarter, keep bedding clean and call for guidance. **When to call a vet:** at the first sign, and always if the cow is sick or feverish.

### Lameness and foot rot

**What you see:** limping, swelling between the toes, a bad smell, reluctance to walk. **Why it happens:** wet footing, injuries, overgrown hooves. **What to do:** move the animal to dry ground and restrain it safely for a look. **When to call a vet:** if lameness lasts more than a day or two, or swelling and fever appear.

### Pinkeye

**What you see:** squinting, tearing, a cloudy or ulcerated eye, light sensitivity. **Why it happens:** bacteria spread by flies, dust, tall grass and sun. **What to do:** separate the animal into shade, control flies and mow weedy pasture. **When to call a vet:** early. Untreated pinkeye can cause blindness.

### Milk fever

**What you see:** a dairy cow around calving who is wobbly, cold and unable to stand. **Why it happens:** blood calcium falls when milk production begins. **What to do:** keep her comfortable and upright on her chest if she is down. **When to call a vet:** immediately.

### Grass tetany

**What you see:** nervousness, staggering, muscle twitching, collapse, often in early spring. **Why it happens:** low blood magnesium on fast-growing grass, especially in lactating cows. **What to do:** ask your vet about prevention before spring. **When to call a vet:** immediately.

### Escaped cattle

**What you see:** open gates, broken wire, animals on the road or in a neighbor's field. **Why it happens:** weak fence, a dead charger, boredom, hunger or a loose latch. **What to do:** stay calm, do not chase, open a gate to lure them back with feed, and warn nearby drivers. **When to ask for help:** right away if they are near a road. Call local authorities or neighbors.

### Breeding difficulty

**What you see:** a cow or heifer that does not conceive, irregular heats or repeated failed breedings. **Why it happens:** poor body condition, mineral shortages, infection, bad timing or an unhealthy bull. **What to do:** keep records and check nutrition. **When to ask for help:** call your vet for a breeding soundness exam.

## Mud

**What you see:** deep muck at gates, feeders and water, sore feet, dirty udders. **Why it happens:** concentrated traffic and poor drainage. **What to do:** add gravel over fabric, move feeders and grade for runoff. **When to call a vet:** if lameness or skin sores appear.

## Flies

**What you see:** swarms on faces, bellies and legs, tail switching, restlessness. **Why it happens:** manure, wet bedding and warm weather. **What to do:** clean up manure, dry bedding and ask your vet or extension office about safe control. **When to call a vet:** if eyes or skin become infected.

## Heat stress

**What you see:** open-mouth panting, drooling, standing in water, seeking shade, eating less. **Why it happens:** hot, humid weather and little shade. **What to do:** provide shade, plenty of fresh water and airflow, and avoid working animals in midday heat. **When to call a vet:** if an animal collapses or stays down.

## Winter water freezing

**What you see:** a frozen tank, animals standing around it. **Why it happens:** below-freezing temperatures. **What to do:** break ice twice a day, or use a livestock-safe tank heater installed as directed. **When to ask for help:** if water is unavailable for more than a few hours.

## Parasites

**What you see:** thin animals with rough coats, a pot belly, scours, pale gums. **Why it happens:** worms picked up on pasture, especially in calves. **What to do:** use fecal egg counts and rotate pasture. **When to call a vet:** if animals lose condition or the count is high.

## SECTION 10

# Routine Care Calendar

| How often | What to do                                                                    |
|-----------|-------------------------------------------------------------------------------|
| Daily     | Check every animal for appetite, cud chewing, gait and manure                 |
| Daily     | Check water, mineral and fence charge                                         |
| Daily     | Feed hay as needed and clean up waste                                         |
| Daily     | Milk (if dairy) with clean routines, twice a day                              |
| Weekly    | Scrub the water trough and look over gates and latches                        |
| Weekly    | Check hooves, eyes and body condition                                         |
| Weekly    | Move the herd in a rotation, if used                                          |
| Monthly   | Review the mineral supply and mowing needs                                    |
| Monthly   | Update records and walk the whole fence line                                  |
| Spring    | Introduce lush grass slowly; review tetany and bloat prevention with your vet |
| Summer    | Monitor shade, flies and heat; take fecal samples as advised                  |
| Fall      | Test hay, stock winter feed and service tank heaters                          |
| Winter    | Break ice, watch body condition and keep bedding dry                          |
| Yearly    | Herd health visit with your large-animal vet                                  |

## SECTION 11

## When to Call the Vet

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Cattle hide illness. When you are unsure, call. A quick phone call costs far less than a lost animal.

**Call immediately:**

- A swollen left side or labored breathing (bloat)
- A calving cow in hard labor with no progress, or a calf presented wrongly
- A cow that is down and cannot rise
- Staggering, convulsions or sudden collapse
- A suspected poisoning or moldy-feed or grain overload
- Heavy bleeding or a deep wound
- Severe diarrhea in a calf

**Call the same day or the next:**

- A calf that is not nursing or is dull
- A hot, hard or clotted udder
- Cloudy, tearing or squinting eyes
- Limping that lasts more than a day
- Loss of appetite or cud chewing
- A retained afterbirth beyond roughly 12 hours

**Ask at your next visit:**

- Vaccine, parasite and mineral questions
- Hoof trimming and body condition
- Breeding plans

Keep your vet's number in the barn and on your phone.

## SECTION 12

# FAQ

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## How many acres do I need for one cow?

A rough guideline is about 1.5 to 2 acres of good pasture per cow-calf pair in the Mid-Atlantic, and more on poor or dry ground. Remember that one cow should not live alone, and you will still feed hay through winter. Ask your extension office and a local mentor to estimate your land's real carrying capacity.

## How much water does a cow drink?

An adult cow generally drinks about 8 to 15 gallons a day in moderate weather. Hot weather and milk production raise that a lot, and a lactating cow can drink 20 gallons or more. Offer clean, fresh water at all times and check it twice daily.

## What should I feed cattle?

Good pasture and clean hay are the base, with free-choice mineral, salt and fresh water. Grain is only for particular cases and should be directed by your vet. Make every diet change gradually, and never feed moldy hay or anything not approved for ruminants.

## Do cattle need minerals?

Yes. Most keepers offer loose, free-choice cattle mineral with salt in a covered feeder. Selenium and copper needs vary by region, so ask your vet. Do not feed sheep or goat mineral, or products meant for other species, without checking.

## What fence is best for cattle?

Many small keepers use a permanent perimeter of high-tensile or woven wire with portable electric fence inside for rotation. A quality charger and two to three strands of electric wire work well once the animals are trained. The best fence is the one that is well built, tested and maintained.

## How long do cattle live?

Cattle can live roughly 15 to 20 years, though beef animals are usually harvested much younger. Dairy cows often stay productive for many years with good care. Plan for the whole life of any animal you buy.

## What vaccines do cattle need?

It depends on your herd, region and risk, so let your large-animal vet direct it. Programs often include clostridial vaccines and may add respiratory and reproductive vaccines for some herds. Follow label directions and ask about timing.

## Can I keep just one cow?

We strongly advise against it. Cattle are herd animals, and a lone cow is often stressed, noisy and likely to test fences. Plan for at least two animals.

## How much does it cost to keep a cow?

It varies widely by region and how you manage the animal. Plan for fencing, hay, mineral, veterinary care, equipment and, for beef, processing fees. Ask local keepers for their real numbers and keep a cushion for emergencies.

## Is cow manure good for gardens?

Yes. It is mild and valuable, best composted or aged about 6 to 12 months before use on vegetable beds. Ask about spraying history, because persistent herbicides in hay or pasture can pass through manure and harm garden plants.

***Ready to shop?*** Start with Homestead Supplies. 10% of every purchase supports no-kill animal shelters.

## SECTION 13

## Every Purchase Gives Back

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Before we earn a dime, **10% of every purchase at Walnut Creek Supply goes to no-kill animal shelters across the country.** It is not a checkout add-on. It comes off the top of every order, every day, because we believe caring for animals and caring for community are one commitment.

Cattle keeping is a long road, and the families who do it well share a few habits: they ask questions, they find mentors, they call the vet early and they plan for the whole animal's life. If you have read this far, you are one of them. Go and meet your neighbors who raise cattle, walk their fences and listen to their stories.

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