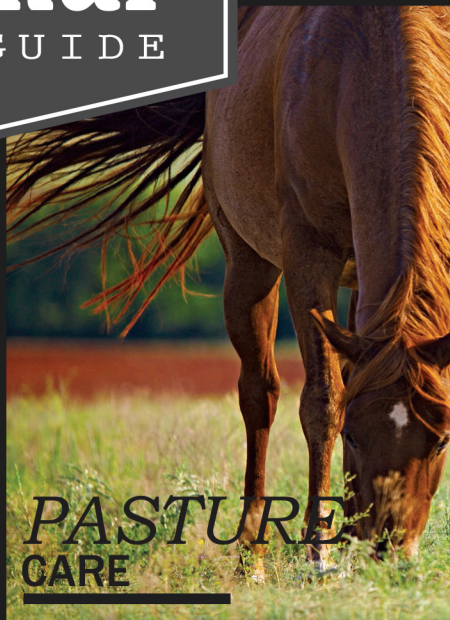
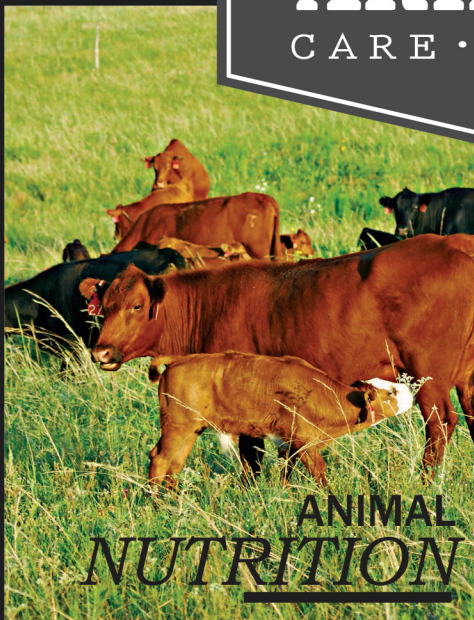


# Animal

CARE • GUIDE



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**FROM THE EDITOR** GENE JOHNSTON

## FOR YOU FANATICS!



**P**eople can get a little fanatical about their animals. Did you know that? Take my brother, Denny. I like animals of all kinds,

but I don't hold a candle to him.

A former pig farmer, Denny now has a stressful job away from his country place. But he can't kick his craving for animal chores. He went through a goat phase (*the best homemade ice cream*), then a pigeon phase. (*Who knew there were so many breeds?*)

Now, the pigeon shed is full of chickens. His favorite is an obscure breed called the Iowa Blue. They're making a comeback, he insists. You can read a little about them at [www.iowabluechickenclub.com](http://www.iowabluechickenclub.com). (*Don't miss the legend of the pheasant!*)

The chickens are a stress-relief to Denny, and two things give him special pleasure. One is the eggs. He gets 50 a day, saves them up, and takes shoeboxes of them to his church to give away. (*Crazy guy.*) "We have families that live on them," he says.

The other pleasure: Before Christmas, he sets eggs in an incubator to hatch while his grandkids are visiting. Together, they stay up all night waiting on the little miracle of chicks pecking their way into the world. Some of

the kids have started their own Iowa Blue flocks.

There are a couple of simple lessons here. Our small herds and flocks provide a great escape from work stress. And they're a really good way to bond with the kids in our lives.

I know you treasure your animals, and actually enjoy the chores. Me, too. You're going to find things in this publication that add to the enjoyment. Thanks to Purina Animal Nutrition for sponsoring it. ■

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**N**othing's better than seeing healthy newborn calves scamper around green pastures in the springtime. Longtime cattle producers never tire of that scene.

Nothing's worse than losing one of them to a sickness like baby calf scours (diarrhea), the leading cause of calf mortality. Here are some tips for avoiding that bad day.

**CLEAN GROUND**

Calf scours are contagious. Newborns get the disease organism, be it a bacteria or a virus, by exposure to older calves that shed it in their manure. Those calves may not even be sick, but they are carriers.

University of Nebraska veterinary specialists developed a system that prevents this cycle. They call it the Sandhills Calving System because it was first tested in that western area of Nebraska. It involves having several small calving pastures or pens. All pregnant

cows are put in one pasture, and when calving starts, they stay there for about a week. Then, whichever cows haven't calved move to another clean pasture. After another week of calving, the remaining cows move again.

The result is that cow-calf pairs are bunched by calf age groups; no calves in any pasture are more than a few days apart in age. And, new calves are always born on clean, uncontaminated ground. Some Nebraska ranches have practically eliminated calf scours in the very first year!

After the calves are 4 weeks old, the threat of scours is largely over, and the age groups can be put back together.

**THE POWER OF SUNLIGHT**

Calf sickness is often weather-related. If a calf is cold or wet, his suckling instinct may be diminished. Then his fluid balance and immune system are

*Some Nebraska ranches have practically eliminated calf scours in the very first year!*

Photograph: Kathleen Gordon

compromised. It's a downward spiral.

One solution is to stop calving during the traditional late-winter months when it can be cold and blustery. At the Kansas State University teaching herd, they moved calving season back from February and March to April and May, mostly for the benefit of the mama cows. (See story on page 6.) But it turns out the calves are healthier, too. Sunlight and warm temps reduce the bacteria load in a calving pen. Cows milk better from fresh grass. In the Kansas herd, calving season has switched from hard, cold work to mostly watching healthy calves race each other in warm pasture sunlight.

If you want no calves born before April 1, turn the bull out on June 23 (there is a 283-day gestation period).

**REVIVING A WEAK CALF**

Inevitably, you'll have a sick baby calf for some reason. All is not lost. But you need to act quickly before dehydration, acidosis (acid overload in body fluids), and electrolyte loss (fluid balance) completely sap his energy.

University of Nebraska veterinarians say you can buy electrolyte powders from a farm store to mix and administer to a sick calf. Or, you can make a solution from common household items. Here are two recipes:

- Combine 1 can of beef consommé (a concentrated broth available in the soup aisle) with 3 cans of warm water and 1 big tablespoon of baking soda.
- Combine 1 tablespoon of baking

**MORE HEALTH TIPS**

**VACCINES, IODINE, AND RESPECT = PROTECTION**

- Cow vaccines, available from veterinarians, will increase the antibodies in colostrum.
- Dip every calf's umbilical cord stump in a strong iodine solution. Use a cup, and give the cord a thorough drenching.
- Be very careful around a new mama cow. Put her calf in a separate pen for treating or feeding. Even a gentle cow may turn vicious when her calf is threatened. ■

soda, 1 teaspoon of salt, 8 ounces of 50% dextrose or light Karo syrup, and water to total 1 gallon.

Give the weak calf no more than 1 quart of this mixture every three or four hours. It can be the only source of nutrients for one or two days. When he has regained his strength, put him back with his mama.

Getting him to suckle the fluid from a calf bottle is the best approach. If he won't, use a small flexible stomach tube inserted no more than 18 inches into his mouth, and pour in 1 quart with a funnel. Tubing a calf can be tricky because you don't want the liquid to go into his lungs. Get training from a veterinarian or experienced neighbor. ■

# FEEDING COWS & CALVES



PROVIDED BY PURINA ANIMAL NUTRITION

## TAKING CARE OF MAMAS

### BEFORE CALVING

A pregnant cow carries her calf for about nine months, just like her human counterpart. Good nutrition is essential to fetal development. The greatest demand for energy and protein occurs in the final three months when the majority of calf growth takes place. It's important that pregnant cows be at ideal body condition prior to calving. (See facing page: "Know the [Body Condition] Score.") If she is too thin, she may have low energy and experience exhaustion and extended labor. Her calf may be more susceptible to illness because of decreased colostrum quality. And she may take longer to rebreed, especially if it's her first calf.

### AFTER CALVING

The time from calving to rebreeding is crucial. A cow is producing milk and rebuilding her body stores. To calve

on schedule next year, she needs to rebreed within 80 days of calving.

### LACTATION

Prior to calving, the cow already had increased needs for protein, energy, and minerals. Lactation adds to that. The average beef cow produces about one and a half gallons of milk per day, and most of that occurs in the first 60 days after calving. Milk production increases her protein and phosphorus requirements by 70%, and her energy needs by 15%.

### REBREEDING

Research says that a cow in body condition of 6 (on the 1-to-9 scale) at calving rebreeds 18 to 27 days sooner than a thin cow. In addition, the mineral status of a cow is critical to reproduction. ■

## CALF NUTRITION: A GOOD START IN LIFE

As a calf nears three months, the cow's milk production peaks and begins to fall. This is just when the calf needs more protein, energy, and phosphorus.

### CREEP FEEDING

Calves should be fed in a creep feeder or bunk that only they can access. It should be placed near water or mineral feeders. Loose hay may entice calves to enter. The amount eaten will depend on the milk supply and forage quality. At two months, calves might eat one pound of formulated creep feed per day; this doubles in months three and four. According to

### KNOW THE [BODY CONDITION] SCORE

A cow's body condition score ranges from 1 to 9 based on how healthy and well-nourished she looks. A very thin cow earns a 1; an extremely overweight cow a 9. At the ideal, 6, the cow has a smooth appearance with some fat in the chest and at the base of her tail. No ribs are visible. Cows should calve at a 6 and be no lower than a 5 at rebreeding. ■

Purina Animal Nutrition research, creep feeding can add 56 to 86 pounds to calf weaning weights.

### WEANING

Beef calves are weaned at seven to eight months, depending on the condition of the mother and available feed. At weaning, calves may consume up to eight pounds of feed per day. ■

## PURINA ANIMAL NUTRITION: CATTLE LEADER

Purina has a full line of feed products and supplements for cows and calves.

For cows, producers have several choices:

- **4-Square® Brand Breeder Chow Products.** These balanced protein and energy supplements enhance digestion of homegrown forages.
- **Controlled Intake Breeder Systems.** These feeds optimize nutrients to the cow's digestive system by encouraging multiple small meals or snacks per day, which increases forage intake and overall utilization.
- **Accuration®/Cattle Limiter Products.** These are the most energy-dense

brood cow supplements on the market.

As calves move to weaning, their requirements change. Among the choices for this life stage:

- **4-Square®**
- **Accuration®**
- **Great Starts®**

Purina also sells mineral products for cattle with mineral deficiency, forage limitations and pests (such as flies), and offers several products for natural beef systems.

For more information on Purina cattle research and product options: [cattle.purinamills.com](http://cattle.purinamills.com). ■



**W**hen KC Olson took over the Kansas State University research herd in 2006, he was given one mandate: Make it pay. Up to then, the cost to feed a cow for a year was \$200 above average herds.

Now his feed cost per cow per year is under \$200, half the state average. The techniques he uses are applicable to any size herd wanting to cut costs.

### ROLL BACK CALVING SEASON

Previously, cows were bred to calve in February and March. The problem is that peak grass production comes in May and June. “Delaying calving means that cows hit peak lactation on the best forage of the year,” says Olson. Lush grass puts them in better condition for breeding season in late June.

### WEAN EARLIER

Normal calf weaning time is November, but Olson moved that up 50 days to the first of October. That, too, helps maintain cow conditioning – later weaning depletes their bodies. When cows enter winter in peak condition,

they don’t need much supplemental feed, so this saves as much as \$150 in hay and grain. Calf performance also improves from earlier weaning.

### STOCKPILE PASTURES

In the winter, cows graze only native stockpiled grasses (not grazed in late summer or fall). They get a little protein supplement before they give birth. They almost never get harvested hay now, and are fed no grain.

### DECREASE COW SIZE

Olson decided 1,400-pound cows are counterproductive; they have more breeding problems and greater feed needs. So he is downsizing and now grazes five 1,150-pound cows where he once had four bigger ones. Smaller cows don’t necessarily wean smaller calves if you use a growthy bull, he says.

This approach built around the cows’ nutritional needs can help most herds, Olson thinks. Exact timing may vary depending on your location. “You may have to drop some of your prejudices,” he says of this strategy. ■

**K**unafin company offers a natural fly-control system that helps control flies in pastures and pens.

You order a bag of small natural fly parasites and tiny wasps (less than a quarter the size of a housefly) from Kunafin. These parasites burrow into the fly pupae, or cocoon, in a manure pile and kill the fly inside. Then the Kunafin insects lay eggs there, hatch out a second brood, live harmlessly to people and animals, and seek out more fly pupae to repeat the cycle.

This reduces fly populations by up to 85%, says Clifton Castle, grandson of the founder of the Kunafin system. It targets all common species of flies that prey on livestock and poultry, says Castle, including horseflies, horn flies, and houseflies.

The parasite bugs come in a sealed pouch that weighs about 1 pound and has about 30,000 parasites. It costs around \$25 plus shipping from Texas headquarters. In a cattle feed yard situation, Castle recommends scattering parasites weekly around manure concentration areas, feeding areas,

or waterers. With backyard chickens or a few animals, he says one bag per month would be enough.

Robert Tweeten, a cattle farmer in North Dakota, uses the Kunafin system and gets the parasites by mail every week from June to September.

He scatters them on the sunny side of feedlot bunks and in alleyways where feed can be spilled.

“We have reduced our fly populations by at least 80%,” he says. “I don’t think it is any more expensive than fly ear tags, and it’s healthier for the operator than insecticide spray.” ■

This is how a bag of Kunafin fly parasites arrives by mail.



*These harmless wasps will eat flies before they hatch.*



### TO ORDER FLY PARASITES:

Go to [kunafin.com](http://kunafin.com), or call 800/832-1113.



# IN THE CLOVER

**O**ne of the best things you can do to increase the animal-carrying capacity of your pastures is to seed a legume-like red clover (or alfalfa) amongst the grasses. Legumes are higher in protein, stand up to summer heat, and their roots have the unique characteristic of fixing nitrogen from the air into a fertilizer form that all plants can use.

*Here is advice from Rob Kallenbach, University of Missouri forage specialist, for getting a good mix of red clover in your pastures.*

### BREATHING SPACE

Clover doesn't like competition, especially when it is just starting out. This year, with pastures nibbled short from drought, is a good year to seed clover.

### \$2 A POUND

That's about the price of clover seed. Seeding a few pounds every year is cheap insurance for a healthy stand.

### ONE-THIRD

Ideally, that would be the share of clover plants in a pasture or paddock. The other two-thirds would be grasses like fescue or Bermuda grass.

### EVERY YEAR

Clover plants may persist for only a couple of years. Expert pasture managers seed four to six pounds per acre every spring to maintain a healthy stand.

### FROST SEED

Put seed out in late winter using a hand spreader. The thawing and freezing cycles of the soil surface will work the seed into good soil contact; usually half or more will germinate. If you have access to a shallow drill seeder, you'll get a higher percentage to grow.

### BETTER GAINS

Pastures that are all grasses will have about 13% protein. Having one-third clover plants will move that to 18.5% and improve cattle gains by 10%. ■

## HOW TO FERTILIZE

**P**astures, just like your lawn, respond well to fertilizer. Most fertilizer suppliers will help you do a soil test so you can know exactly which elements are needed. Nitrogen is typically the most limiting, and many pastures respond well to about 100 pounds of nitrogen per acre.

The average price of applied nitrogen in urea form is about \$.70 a pound, or \$70 per acre for 100 pounds. University of Georgia forage specialist Dennis Hancock says you should con-

sider splitting applications: half in the spring, half in late summer. Reasons:

- Pastures are lush in the spring anyway from good rainfall and mild temperatures.
- Grasses can make better use of fertilizer in the fall when they are recovering from the summer heat and the stress of being grazed off.
- Your animals will need extra forage in the fall.
- Overall nitrogen use efficiency goes up 25% to 30% when there is a split application.
- Late summer tends to be a slow time for fertilizer dealers, and you might get a better deal. ■

## MORE GRAZING TIPS

### TAKE HALF, LEAVE HALF.

Let animals into a pasture paddock when the forage is ten to 12 inches high. Use a yardstick, measure in several places, and take an average. Move them to another paddock when they've eaten half of the forage, down to four to six inches. Plants grazed this way, rather than nibbled off short, will bounce back more quickly and put down much deeper roots to tap nutrients and water.

### CROWD OUT WEEDS.

Pasture weeds are opportunistic, and the best way to control them is with lush stands of desirable forages. If weeds persist in small patches, manually cut them - chemical sprays may also kill your desirable pasture legume plants. If you must spray for weeds, do it in early spring when weeds are

actively growing, and legumes will have time to reestablish.

### DON'T LET ANIMALS BE LAZY.

Use salt/mineral blocks and water tanks to force cows and horses to move around to the far corners of a pasture. It will make them graze all sections more uniformly, and spread their manure around, too. Cows especially are lazy grazers and won't walk far from a water tank. ■



## HERE'S TO YOUR HORSE'S HEALTH

*As animal companions go, it's hard to outdo horses. They're beautiful, full of personality, and loyal in both work and pleasure. Here are a few tips to keep them healthy and help them through some common ailments.*

### SALT & MINERALS

**C**herry Hill, a well-known author on horses (horsekeeping.com), says that horses should have access to salt at all times. "I provide mine with two salt blocks. One is plain white salt that is simply table salt. The other is a calcium/phosphorus trace-mineral salt block. It is some-

times called a 12:12 block because it contains 12% calcium and 12% phosphorus, or an equal ratio, which is good for most adult horses." She also says that young, growing horses may need a higher ratio of calcium for their growing bones. You should also consider their feed. When feeding alfalfa, which is high in calcium, you could offer mineral blocks with a lower calcium ratio than when feeding grass hay. ■

### WHAT EXACTLY IS HORSE COLIC?

**C**olic is the leading cause of premature death in horses, and 10% of them have some form of it every year. Colic is not a singular disease, but rather is any illness that causes a horse abdominal pain by an abdominal obstruction. Sometimes it takes surgery to correct it. Common

causes could be worms, a twisted small intestine, impacted food material, a trapped colon above the spleen, ulcers, or several other things that stop normal functioning of the intestines. The symptom is always the same: abdominal pain of the horse. It usually requires veterinary help. ■

### WEST NILE VIRUS

**T**his one scares most horse owners because horses are particularly susceptible. It's transferred from birds to horses by mosquitoes. It causes encephalitis – infection of the brain and central nervous system. Affected horses may be depressed, off-feed, have tremors,

circle aimlessly, and possibly have paralysis of the hind legs. If a horse does this, he needs veterinary care. About a third of horses that contract WNV die from it. Recovery is slow and may take a year or longer. There is a vaccine, and your horses should get it, especially if they're in high-mosquito areas. ■

### LAMENESS

**T**he most common ailment in horses is lameness. A University of Missouri veterinarian has developed a way to detect the problem with a system called the Lameness Locator.

Sometimes it's hard to detect that a horse is lame, or exactly where the lameness is coming from. All you see is a lethargic horse. This tool, now in commercial use by some equine veterinary centers, places small sensors on the horse's head, front limb, and near the tail. The sensors record the horse's torso movement while trotting. That information is compared against a database of healthy horses.

The Lameness Locator is better than the naked eye, says veterinarian Kevin Keegan, because it samples the motion at a higher frequency and removes the human bias. It can lead to earlier and easier treatment. "Sometimes, lameness goes undiagnosed entirely," Keegan says. ■

### COOLDOWN TIPS

*Heat is hard on horses, especially the kind of heat we've had in recent summers. Here are some tips for keeping your horse cooler.*

- If he has to go outside to graze, let him out all night. Keep him inside by the fan all day.
- A horse benefits more if the fan is pulling hot air out of the stall than if it's blowing hot air onto him.
- Any way you can get moisture onto his skin will cool him as it evaporates. Intermittent mist – five minutes every hour – is better than constant mist or a single hose dousing.
- A small drinking water tank exposed to midsummer sun will get very hot, and it won't be appealing to your horse. At the least, put shade over it.
- If you have to work a horse, shorten the sessions when the temperature tops 90°F. Make it two shorter sessions.
- Don't shave a horse close, because hair coat protects from sunburn. Clip the thickest hair mats to let heat escape. ■

# EACH HORSE IS *unique*

PROVIDED BY PURINA ANIMAL NUTRITION

Feeding choices are affected by the lifestyle and life stage of the horse. Every horse has a different requirement for protein, energy, vitamins, and minerals. The type and amount of forage (hay or pasture) available also affects feeding choices. Purina® horse feeds meet your animal's nutritional needs at every stage.

### **PLEASURE/RECREATIONAL HORSES**

A healthy horse with a normal lifestyle needs nutrition to maintain body condition, hair coat, hooves, skin, and eyes.

### **PERFORMANCE HORSES**

Racehorses and show horses have greater energy needs because they work harder. Their needs vary by activity or discipline, size, and the way they respond to training and exercise.

### **BREEDING MARES**

The needs of mares are based on three

distinctly different periods: open/early gestation, late gestation, and lactation.

### **GROWING HORSES**

Feeding recommendations for young horses fall into one of three categories: nursing, weaning to yearling, and yearling to two years. Each stage has requirements for optimal development.

### **SENIOR HORSES**

The lifestyle of aging horses requires special care and nutrition to maintain health and body condition, especially for those with chewing and digestion issues.

### **SPECIAL NEEDS HORSES**

If horses are overweight, underweight, have health issues or feed sensitivities, they require special diets. Work with a veterinarian to meet their needs. ■



Photograph: Purina Animal Nutrition LLC.

## HORSE FEEDING HOW-TOS

**F**eeding a horse is very different from feeding other animals because of the unique way in which a horse's digestive system works. Here are tips for feeding success.

**Measure by weight, not volume.** A three-pound coffee can of oats is not the same as a three-pound can of corn. It may hold two to three pounds of oats, but four to five pounds of corn. Corn is two to three times more calorically dense than oats. Use a scale to get the right weight of feed.

**Don't overfeed grains or concentrated diets.** Horses have a very small stomach in relation to their size, and feeding too much grain in one meal can cause colic or laminitis (founder). A rule of thumb is to feed no more than 0.5% of the horse's body weight in grain or concentrate per meal, e.g., five pounds for a 1,000-pound horse. Don't feed grain free-choice.

**Provide clean, fresh water.** A horse drinks eight to 12 gallons of water a day. A hot horse should receive plenty of water, but only a few swallows at a time until he is cooled off. Horses prefer water between 45°F. and 65°F.

**Feed consistently.** Feeding at the same time every day keeps them from going off feed, developing undesirable stall habits, or having digestive upsets. Spacing meals evenly throughout the day is also better for horses.

**Avoid sudden changes.** Just as meal timing should be consistent, sudden changes in diet should be avoided. Rule of thumb: Take four to seven days to make a small diet change, three weeks for a more radical change.

**Properly manage group-fed horses.** Individual feeding is best, but if horses must be fed in a group, use individual feeders spread far apart. Make provisions for timid horses to eat enough.

**Feed adequate forage.** Horses need to eat at least 1 pound of forage per 100 pounds of body weight each day. High-quality hay or pasture can prevent many digestive disturbances.

**Provide free-choice salt.** Many horses need daily supplemental salt. They lose salt through sweat, and hay or pasture can be low in sodium. Free-choice salt can be provided through blocks, or loose salt can be added into the feed. ■

Comprehensive information on Purina® horse feeds and a feeding calculator for individual needs are available at [horse.purinamills.com](http://horse.purinamills.com). Information about Purina® supplements and Purina® Hydration Hay™ Horse Hay Blocks is at [purinahorsesupplements.com](http://purinahorsesupplements.com). Senior tips can be found on the Purina Senior Horse Resource Center at [activestill.com](http://activestill.com). ■



## — OUR — FAVORITE BREEDS

*You've got dozens of choices for your herds or flocks. If you like them, that's all that counts. Here are a few we like, and why.*

### CHICKENS

#### CRESTED POLAND

This beauty breed adds class to a backyard chicken flock. They are fun to watch, decent layers, but not meaty. The mature Crested Polish shows a striking contrast in color with his soft black body feathers and the white head crest. Baby chicks have cute white top hats. To hatch a brood yourself, you'll have to use a surrogate hen or an incubator.

Available by mail order from McMurray Hatchery ([www.mcmurrayhatchery.com](http://www.mcmurrayhatchery.com)).

#### CORNISH-ROCK

The beauty in these birds is their plump drumsticks and breasts. A meat-first chick, they go by different



names at different hatcheries, but are usually white hybrids, and come closest to equaling the commercial fryers or broilers you find in grocery stores. They grow fast and can reach 7 pounds in eight weeks. Sometimes they are prone to leg problems if you keep them past 10 weeks old. You can breed them at home by crossing Cornish and Plymouth Rock pure lines.

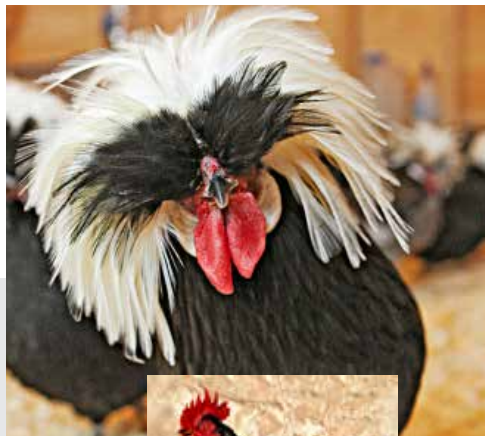
Available from Cackle Hatchery ([www.cacklehatchery.com](http://www.cacklehatchery.com)).



#### RHODE ISLAND RED

This is the most popular backyard breed. Known for big bodies (up to 7 to 8 pounds) and red feathers, they're gentle and lay big brown eggs. Known as egg-laying machines, they'll produce year-round. They love to forage in grass, and these birds have good meat qualities, too. Reds are the best dual-purpose breed.

Available from Ideal Poultry Breeding Farm ([www.ideal-poultry.com](http://www.ideal-poultry.com)).



### HORSES

#### SHETLAND PONY

This small horse has a big soft spot in our heart: It was our first pony. It's still a really good kid's horse. Small in size (42 inches) and gentle, it also makes a great first show animal. Shetlands are used successfully in therapeutic programs for the physically and mentally disabled.

#### MORGAN HORSE

This American breed is noted for a calm nature, intelligence, and versatility. Favored by cowboys and mounted police, they fit any riding discipline you ask of them.

#### AMERICAN PAINT

All about pretty, they descend from Spanish explorer mounts. Paints are second in numbers to quarter horses. ■

*For more horse breed information, visit [livingthecountrylife.com/horseguide](http://livingthecountrylife.com/horseguide).*

#### LONG-HORNS

Just plain fun to see, these majestic mongrels of the Old West

have a rich history of living on sparse grass. They produce good grass-fed beef, but it'll never be Angus-tender. Be respectful of the impressive horns; they can make these animals difficult to load and handle.

#### AMERICAN LOWLINE

This little-known breed produces prime and tender home-freezer beef in a compact package. Bred from old-line Angus, cows weigh 66% of other breeds.

#### JERSEYS (seen at bottom)

They're not a good fit if you want meat. But, boy, can they make creamy milk: One cow gives three gallons per day. And they're the best grazers of any breed. ■

*To see more cattle breeds, visit [livingthecountrylife.com/breeds](http://livingthecountrylife.com/breeds).*

## FLOCK NUTRITION

# RAISING BACKYARD CHICKENS

PROVIDED BY PURINA ANIMAL NUTRITION

### HEALTHY HENS START LAYING AT 18 TO 20 WEEKS.

Peak egg production is reached at about 30 weeks. Optimal production is from five to six eggs per week, although some backyard breeds may lay less. Nutrition plays an important part in the rate of lay, along with breed, housing, weather, health, and light – especially light. Laying hens need at least 16 hours a day of light to maintain egg production. Less light means fewer eggs.

Once hens are laying regularly, owners have several complete feed options to optimize egg production. Egg quality is also influenced by nutrition, and you may want a feed that contains omega-3 fatty acids if hens do not have access to flaxseed to boost levels of this nutrient in the eggs.

*Raising chickens is fun and relatively easy, but you need to know the basics about nutrition.*

### MOST LAYING HENS BENEFIT FROM SUPPLEMENTS.

Together, these should make up no more than 10% of the entire diet:

- **Table scraps:** Chickens are great recyclers. Vegetable and fruit

scraps are very appealing. You can even feed meat scraps, dairy products, and cooked eggs. They love grass clippings, bugs, seeds, worms, and weeds.

- **Scratch:** Scratch is cracked corn or other small grains that are scattered for chickens to peck at. Scratch can help keep chickens warm in cool weather while they stay occupied and happy. It can also lure them into the chicken coop.
- **Grit:** Grit is the coarse sand or granite needed by the chicken to digest its food. It should not be mixed into the feed.
- **Oyster shell:** This supplement comes in small pieces that contain calcium, which laying hens need for strong eggshells. Like grit, oyster shell should not be mixed with the feed. Never feed to chicks under 20 weeks old. ■



## NUTRITIONAL DEMANDS OF GROWING CHICKS

**Feed a start-and-grow complete feed.** This is a nutritionally complete diet for chicks from hatch. For the first few days after hatch, feed should be placed in multiple small containers. Once chicks are accustomed to the feed, a regular feeder can be used. Feeders should be kept full at all times. Chicks can also be provided chick grit (finer in texture than adult grit) to aid in digestion.

**Provide fresh, cool water.** Change it daily. A two-quart waterer is sufficient for 25 baby chicks; this should be doubled by six weeks of age. In the beginning, it may be necessary to dip the chicks' beaks in the water to induce drinking.

**Raise feeders and waterers.** After chicks are one week old, set them at the level of the chicks' backs to prevent contamination from the litter.

## LIFE-STAGE CHICKEN FEEDS FROM PURINA

Poultry diets were among the first feeds developed by Purina more than 100 years ago. Throughout this long history, innovation has never stopped. Today, backyard chicken owners trust Purina for their SunFresh® Recipe products, a line of natural, premium feeds specifically designed for family flocks. These feeds are made from natural ingredients without animal proteins and fats. SunFresh® Recipe products can be fed to both free-

range and confined birds.

Feed options include:

- A start-and-grow feed that can be fed to chicks until they reach laying age.
- A nutrient-rich ration for mixed flocks (chickens, turkeys, ducks, and geese).
- Several layer feeds, with and without supplemental omega-3 fatty acids.
- Scratch grain, chicken grit, and oyster shell supplements.

For more information on Purina poultry research and product options: [poultry.purinamills.com](http://poultry.purinamills.com). ■





# CHICKENS *by the* NUMBERS

*These numbers can be useful for your backyard flock, or just to wow your chicken-deprived friends.*

EGGS PER HEN:  
**4-5** *per week*

**90°F.-95°F.**  
THE TEMPERATURE  
*needed by newly hatched chicks*

**10¢-20¢**  
*per chick*  
to vaccinate for  
MAREK'S DISEASE  
at hatchery

**12** lbs. of feed go  
into a 6-lb.  
broiler chicken.

**12×12×12**  
**INCHES**  
FOR LAYING BOXES

**ONE**  
ROOSTER  
PER 10-12  
HENS

MANURE PER DAY:  
**.42 lbs.** PER HEN  
**.14 lbs.** PER CHICK

AGE AT FIRST EGGS:  
**20-24**  
*weeks*  
FOR PULLETS  
*(young hens)*

**22 GRAMS**  
is the average weight of  
a chicken gizzard.

Roosting space per hen:  
**6 INCHES**

**TIME NEEDED TO DRESS A CHICKEN:**  
**20 MINUTES**  
IF YOU FOLLOW THESE INSTRUCTIONS:  
[www.butcherachicken.blogspot.com/](http://www.butcherachicken.blogspot.com/)

**FOR MORE INFORMATION**  
FREE "GETTING STARTED" CHICKEN GUIDES  
[www.facebook.com/PurinaPoultry](http://www.facebook.com/PurinaPoultry)  
[www.livingthecountrylife.com/chickeninfo](http://www.livingthecountrylife.com/chickeninfo)  
Netting in the picture: [www.premier1supplies.com](http://www.premier1supplies.com) ■



## FEED QUALITY ANIMAL OWNERS CAN TRUST

**A**t Purina the red-and-white checkerboard stands for quality. The FeedGuard® Nutrition System ensures that Purina® feed products consistently meet the high standards customers know and trust. The principles include:

- **Work with trusted suppliers.**

Purina sources the best ingredients and only purchases from suppliers that meet the highest standards.

- **Make consistency the highest priority.** Constant nutrition formulation is essential for top animal performance. Purina technology automatically compensates for naturally varying nutrient levels in ingredients to deliver the best consistency, bag after bag.

- **Maintain high standards for quality.** The ingredients in Purina® feeds undergo rigorous testing for nutrients and purity. Thousands of tons of ingredients that don't meet quality standards are rejected every year. The trust of Purina customers is never taken for granted.



For more information on  
Purina research and product options:  
[purinamills.com](http://purinamills.com). ■

# THE PURINA ANIMAL

PROVIDED BY PURINA ANIMAL NUTRITION

## THE ROOTS OF OUR LONG HISTORY

When Purina was launched in 1894, the world was a very different place. There were no cars, trucks, or tractors. Horses and mules worked the fields, transported goods to market, and moved people from place to place. Farmers blended their own feeds – a particular challenge considering that cattle, horses, and other species have very different requirements.

Company founder William Danforth saw the need for a source of nutritionally balanced animal feed that would be safe, reliable, and portable. He launched what was then known as Purina Mills. By making commercial feed available, Danforth helped farmers expand their herds and flocks and begin taking their surplus to market. It was a transformative step for a company that built its business – and the trust of its customers – on continuous innovation in animal feed.

*This working farm with 3,000 animals is where Purina nutritionists put technology to work for better animal care.*

Today Purina has an extensive network of retailers, making it possible for customers everywhere to buy Purina® nutrition products.

From the beginning, Purina has made quality a primary directive. For more than 85 years, the Purina Animal Nutrition Center outside St. Louis, Missouri, has been the birthplace of Purina breakthroughs. The center is a working farm of 1,200 acres where more than 3,000 animals are fed every day. More than 100 skilled nutritionists, animal care workers, and veterinarians work at this unique facility. It is a high-technology research center in a setting that reflects Purina's proud rural heritage.

Tremendous strides have been made in animal nutrition over the past 100 years. And the commitment to innovation and care for animals that Purina shares with its customers endures. ■



Photographs: Purina Animal Nutrition LLC.

# NUTRITION CENTER



## JUST THE FACTS

Purina Animal Nutrition and the famous checkerboard

are among the most recognized icons in animal feed. However, some facts about Purina are better known than others:

- More than 100 million animals eat Purina® feed every day.
- More than 20,000 studies have been conducted at the Purina Animal Nutrition Center, earning more than 100 product patents.
- Purina has evaluated more than 1,500 combinations of nutrients.
- Approximately 4,000 livestock producers, students, and industry

experts tour the Purina Animal Nutrition Center

each year.

- Purina offers feed products for horses, cattle, goats, swine, poultry, rabbits, rodents, small pets, game animals, and exotic animals.
- Purina was the first feed company to develop milk replacer for calves and life-stage horse feeds. It was first to nationally distribute feed for senior horses.
- Purina has used the red-and-white checkerboard in its logo for more than 100 years. ■

.....

You don't wake  
up at dawn  
EVERY DAY  
just to worry about  
YOUR FEED.

.....

That's what we do. On our 1,200-acre farm that's home to over 3,000 animals, we work tirelessly to make sure each formulation lives up to our standard of excellence. And yours. Visit our farm at [purinamills.com](http://purinamills.com) to see why the checkerboard on the bag is the only check you need.

 **PURINA**  
The only check you need.™

[purinamills.com](http://purinamills.com)

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