

DRESSAGE, EVENTING, HUNTERS, JUMPERS

VOL. 22

PRACTICAL HORSEMAN EXTRA

Hunter Riders: Equitation Counts! **4 EXERCISES FOR POSITION**

Fueling the Sporthorse

Sandy Ferrell and
Shadow Play

Brought to you by



SMARTPAK™

Power YOUR Passion



At SmartPak, we know that riding is more than just a sport or hobby. Your horse gives you his all and deserves support that works as hard as he does. Power your passion with cutting-edge SmartSupplements™, designed to help him feel and perform his best. **We guarantee it.**

LEARN MORE at SmartPak.com/SmartSupplements or call our Horse Health Experts at 1-800-461-8898



SMARTPAK
SmartPak.com

SmartSupplements

Hunter Riders: Equitation Counts!

*Fix your position to ride
more effectively.*

BY SANDY FERRELL WITH
TRICIA CONAHAN
PHOTOS BY AMY K. DRAGOO



◀ Riding your hunter in a quiet, balanced position, as I'm demonstrating here on Shadow Play (Ernie), will allow your horse to perform his best while keeping the judge's attention on *him*, rather than you.

The issue of equitation usually comes up in a training session when I've reminded an amateur rider to keep her heels down or her body quiet over the fence. The rider pulls up and politely asks, "We're being judged on how my horse goes around the hunter ring, not on my equitation. So why does my position make a difference?"

It's an honest question. But I believe that equitation totally matters. As hunter riders, we present a visual of the horse as our dance partner, flowing elegantly around the ring. When

our bodies are doing things that are unattractive or distracting, it ruins that visual ballet. Yes, the horse is the one being judged—but the judge still sees the total picture.

Also remember that form equals function. Classical style doesn't just make you a prettier rider, it makes you a *better* rider. If your eyes are up and your shoulders back, you will create a better balance with your horse. Closing your fingers and keeping your reins the right length—with your elbows just in front of your rib cage, forming a straight line to your hands and your horse's mouth—sets you up to land organized and in balance after a fence and execute a good lead change. Stretch-



ABOUT SANDY FERRELL

Sandy Ferrell began riding at the age of 4 and progressed through a stellar junior career competing in the pony, hunter/jumper and equitation divisions. She opened her own business, Royall Show Hunters, at the age of 23. Ferrell and her clients have won numerous championships at A-circuit horse shows. She is a six-time regional professional winner of the World Champion Hunter Rider competition and the winner of the 2008 WCHR Hunter Spectacular. In 2018, she won the inaugural U.S. Hunter Jumper Association 3-foot-6 Green Hunter Incentive at the Kentucky Horse Show and the Green Hunter Grand Championship at the Pennsylvania National Horse Show, riding Stephanie Bulger's Hemingway. She splits time between Bel Air, Maryland, and Wellington, Florida.



▲ PRACTICE TWO-POINT

1. Riding at a walk on the longe line, get up into two-point position. Rest your hands lightly on your horse's neck for balance.

2. Drop your knotted reins and put your arms straight out to the sides, keeping your shoulders back and down. Close your eyes and visualize wrapping your legs around your horse's barrel, draining all of the weight from your head to your body, down through your legs and into your heels. Feel the increased pressure on the balls of your feet and the insides of your legs.

3. Now sit down, put your hands on your thighs and push the horse into a slow sitting trot. For most riders it is harder to maintain a strong leg at the sitting trot—we tend to focus on sitting and forget what our feet are doing. Use one hand on the pommel of your saddle to gently pull your body into the rhythm of your horse's slow trot.

4. (Photo on page 5) Next, without letting your heels slip upward, push your horse into a regular working trot and begin posting with your hands on your hips or out to the sides. When his action pushes you *up*, think about pushing *down* into the balls of your feet and soft heels to absorb the energy and keep your leg in place. Pull in your stomach and engage your core to stabilize your upper body.

ing your legs down around your horse's sides, with weight in your heels and your toes properly aligned with your kneecaps, provides the base of support necessary to keep you in balance and use your leg aids effectively.

So why do we see so many successful professionals riding with less-than-perfect form? Most of them are super talented—they have years of experience and are very accurate to the fences. Plus, many of them are extremely well mounted, riding athletic horses with beautiful jumping styles. Judges are less likely to be distracted from the overall picture by minor rider faults. In contrast, horses with average talent and presence aren't quite as captivating, so judges are more likely to notice their riders' mistakes. The classical style, therefore, will always

be the most effective way to ride and compete.

Watch the professional riders who embrace good equitation; study their bodies and how quiet they are. Peter Wylde has the most beautiful arms and hands. McLain Ward always rides with a strong leg position, regardless of the size of the fence. And there are some new young professionals, such as Cassandra Kahle and Laena Romond, who ride with beautiful style. The success of these people at the highest level of our sport proves that good equitation works.

Correct equitation means you can make good things happen on course because of—not in spite of—your position. To develop classical style, you need to feel and experience how good form helps both you and your horse every time you perform. In the following exercises, I'll share my solutions for common equitation problems.

Problem: A Weak Leg Position

As young riders we are all taught, "Heels down, thumbs up." Your heels don't have to be stuck to the ground, but having your weight flow down through a soft, deep heel creates a solid base of support. The pressure of the ball of your foot on the stirrup and the weight in your heel create security and flexibility.

Some riders also have the horrible habit of turning out their toes to use their heels or spurs. They are riding off the backs of their calves. It doesn't look nice and it's ineffective because pointed-out toes compromise the straight line between the



4

kneecap and the tip of the toe. This undermines the ideal constant connection between your leg and the horse. A properly positioned leg brings the *inside* of your calf, from the knee to the ankle, against the horse's side.

Solution: Practice Two-Point

Whenever you can, practice riding in two-point at the trot. This is the same position as the “up” phase of the rising trot: with your seat out of the saddle, your weight balanced over your lower legs, and your hips slightly closed. This will help you learn how to use your weight, energy and core muscles to anchor your leg position. Your back should be relaxed but straight, your eyes should be looking forward and your seat should be only a few inches out of the saddle. Think about dropping your weight down slightly through your heels, still feeling the pressure points on the balls of your feet. Keep your toes pointed forward—but never inward (which takes your ankle off the horse)—with the insides of your lower legs against your horse's sides.

Even better, practice your two-point while your trainer or a knowledgeable horseperson longes you on a quiet, reliable horse while you try the exercises described in the photos on page 4 and above. Use an enclosed longeing pen if it is available. Or use jumps or hay bales to wall off a section of your ring, enclosing a circle with a diameter of about 50 feet. (Note that while you may longe your horse for exercise on

a larger circle, for the purpose of these exercises you want to be on a more controllable track.) Also knot your reins about halfway up your horse's neck so you can safely drop them during the exercise.

Why This Exercise Works: While riding on a longe line, you can safely drop your reins. When you don't have a connection to the horse's mouth, your core muscles must kick in to keep you centered and only the correct leg position will keep you balanced through the exercises. Without reins, all sensation now comes from your legs—that will help remind you to always ride from leg (first) to hand (second).

Use Your Core Muscles

We tend to neglect our core (stomach and back) muscles in riding. Many riders try to fix their upper bodies by arching their backs or pulling back their shoulders. That approach ignores one of the most important, largest sets of muscles in the body and a valuable lever for upper-body control. Activate your core muscles by pulling your stomach toward your spine. Keep it pulled in throughout your ride to control your upper-body position.

Problem: Incorrect Arms and Hands

To ride correctly from leg to hand, we must adjust our rein length and hold our hands in a position that creates a straight line from elbow to hand to bit while closing our fingers around the reins and maintaining a light, steady connection with the horse's mouth. Too often that critical connection is compromised by poor arm or hand positions. Here are three common problems:

■ Many people have open fingers and long reins, riding with their hands in their laps. They think this looks soft. But this practice is ineffective—the inconsistent communication the horse receives from floppy reins is confusing. And when an adjustment in pace is required, that change is so much more visible because the rider has less control of the leg-to-hand-to-mouth continuum.

■ A popular bad habit is riding with hands too low—breaking the straight line from the horse's mouth to your elbows. The myth is that this will help the horse drop his head. But when you drop your hands, you pull downward. The bit now works on the bars (not the corners) of the horse's mouth. That actually makes him raise his head.

■ Many amateurs ride with “frozen” arms—they pinch their elbows to their sides in an attempt to hold their upper-body position steady. But flexible elbows give you usable arms and more subtle control over the horse, while still keeping your hands in the correct position. If your elbows are stuck to your ribs with superglue, you can't ride properly!

Solution: Hold a Crop with Both Hands

This exercise creates the muscle memory of maintaining your arms and upper body in a correct, consistent position by having you hold a crop about 18 inches long horizontally between both hands. This will produce a “frame”—a square between the crop, your two arms and your body—while still allowing enough space for your arms to move forward and back and make adjustments and keep a straight line from your horse's mouth to your elbows.

As you practice this exercise, described in the photos on page 7, engage your core so you can open your chest and carry your upper body without relying on your reins for balance. Shorten your reins so you have a steady contact with your horse's mouth and your elbows are slightly in front of your rib cage. When you make transitions, turns, circles, etc., try not to change your rein length or hand position to communicate with him. Instead, feel that your hands, arms and body are one unit that is constantly creating that flow of communication. The leg-to-hand connection should never disappear.

Make sure you keep your chest open and your horse centered beneath you as you turn. It's just like riding a bicycle: Your hands on the handlebars are on either side of and controlling the front wheel as you turn. On your horse, your hands are on the crop, controlling your horse's shoulders and front legs.

Why This Works: I love this exercise because it forces riders to maintain a consistent rein length, with their fingers closed and their elbows loose and away from their bodies.

Problem: Jumping Ahead of Your Horse

Many riders erroneously feel they need to help their horses jump the fence. They begin the release, get up out of saddle, bend over and throw their hands up the neck before their horses have left the ground. (Some trainers call this horrible habit “projectile vomiting up the neck of the horse.”) Jumping ahead of your horse serves no purpose and actually puts you in a weaker position. If your distance to the fence is too long and the horse chips, you risk getting your center of gravity too far up his neck (which can lead to a fall). If your distance is too tight, throwing your weight on his forehand will make it more difficult for him to jump.

Solution: Two Exercises in Body Control

These exercises—riding over a line of three cavalletti and jumping a small fence to a ground pole—allow you to experience the difference between jumping ahead of your horse versus engaging key muscles to stay centered over him while he jumps.

Practice both exercises several times to loosen up your horse and get the feel for your correct timing and balance. Then try exaggerating your release in the takeoff, as if you were helping your horse jump: Right before he jumps, push your hands up his neck and throw your upper body forward. Let your lower leg slide back and away from his barrel. (Don't worry—these are little jumps and your horse will survive!) When you land, you will feel that your body is in front of the center of gravity, your weight pivoting on your knee and your heel slipping up and back. You might also notice your horse jumping flatter and perhaps speeding up as he goes down the

Talk to Breathe

Many riders get nervous, then stop breathing and stop feeling. The best way to keep yourself breathing is to talk to your horse. As you do these exercises, sing a song or talk out loud. This will strengthen your lung capacity, keep everything much looser and help you use your core.

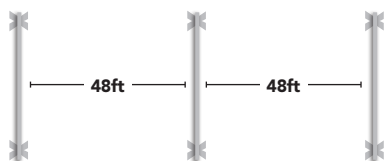


▲ **HOLD A CROP FOR BETTER ARMS AND HANDS**

1. Warm up your horse until he is loose and quiet, then come back to a halt. Position the crop so that you are holding it at each end with your palms down and your hands about 18 inches apart. Keep your reins in your hands and close your fingers around the stick. Carry your elbows, hands and forearms slightly wider than your body, as if you're holding a small tangerine in each armpit. Keeping the crop in this position, begin to work your horse at the walk, trot and, eventually, the canter, staying on the rail.

2. While keeping your "frame" in place and maintaining a consistent connection to your horse's mouth, lengthen and shorten his stride, always riding him from your leg up into your hand. As you do so, follow the motion of his head and neck with your arms.

3. Next, try riding a circle, with your arms still in the frame position. As you turn, the whole frame turns together—shoulders, arms and hands—keeping the shape of the frame consistent. Meanwhile, your legs stay in constant contact with your horse's sides, always asking him to push up into your hands.



▲ *Exercise 1: TRIPLE CAVALLETTI*

Place three cavalletti in a row, each three canter strides apart (approximately 48 feet) and no higher than 1 foot tall (see diagram, top left).

1. Approach the exercise in a posting trot. Only when your horse begins to come off the ground do a very short release up his neck with your hands and bring your body forward just a bit. For most riders, this will feel like you have been slightly left behind—that's normal!

2. Stay in a light half-seat as your horse canters three strides to the next cavalletti. If he lands in the trot—which often happens because the jumps are so small—make a transition to canter and continue to the cavalletti.

3. Hold that same position and keep your eyes up over the second cavalletti and during the next three strides to the third cavalletti. Four to five strides after the last cavalletti, come quietly to the halt.

WRONG: Next, exaggerate jumping ahead in the take-off. Notice how that disrupts your balance and timing, making it much harder to organize on landing.

line. Notice how much longer it takes you to get back into the saddle at the end of the exercise to execute a clean halt.

Finish each exercise by jumping through correctly in sync with your horse, focusing on feeling the inside of your leg against his barrel and the pressure of your foot on the stirrup to secure your leg (just like in the longe-line exercise). A few strides ahead of the first cavalletti or jump, think about the sensation of pressing down on the stirrups and pushing your feet a little forward. At the same time, pull in your stomach. These two actions will slow down your upper body and help you go forward in time with (and not ahead of) the motion.

For the first exercise, you'll place three cavalletti in a row, each three canter strides apart (approximately 48 feet) and no higher than 1 foot tall. You'll trot into the line and canter three strides to the second cavalletti and three strides to the third. For more information on riding down the line, study the diagram and photos above.

The second exercise, demonstrated in the photos on page 9, uses a small vertical (about 2-foot-6) followed by one stride (about 18 feet) to a ground pole. The pole will encourage you to make a quick recovery after the jump, using good body control to balance and organize yourself and your horse in the very first stride after landing.

Approach the vertical in a nice canter, riding in a light full-seat and focusing on the strong leg position you learned in the longe-line exercise. In the last stride before the jump, concentrate 100 percent on engaging your core and feeling the pressure of your foot in the stirrup. As with the cavalletti exercise, the goal is to stay directly over his center of gravity throughout the entire jumping effort. Your release can be just a bit more generous this time, as the size of



▲ *Exercise 2: GROUND POLE AFTER VERTICAL*

1. As your horse prepares to take off for the jump, pull in your stomach and put more pressure onto the balls of your feet while slightly relaxing your heels. This will help stabilize your foot position. Keep this feeling while staying directly over his center of gravity in the air over the fence.

2. This helps you land in balance, perfectly in sync and connected to him as he canter the stride to the pole, allowing him to focus completely on the pole, rather than on you.

3. Continue to balance your weight over his center of gravity as you canter over the pole.

WRONG: Throwing my upper body up Ernie's neck not only puts me in a precarious position, you can see by his expression that I'm making his job harder, too. The impact of landing—even over a small jump—will tip me further onto his neck, weighing down his front end and leaving me unprepared for the upcoming pole.



the fence is slightly bigger.

Why These Exercises Work: These exercises let you safely experience the downsides of dramatically jumping ahead. And they give you specific tactics to use with your core muscles and feet that support the correct release and timing. Staying centered and slowing your upper body over the jump encourages your horse to spend time in the air and finish his bascule. The more you experience that soft, slow, centered release, the more it will become second nature. **PH**

"This is **keeping him active, comfortable & more supple** than he was five years ago."

–J Barlow from Frederick, MD



SOUNDNESS SUPPORT

SmartStride™ Ultra Pellets
#25015, **\$57.95**

Why choose SmartStride Ultra Pellets?

- ▶ Collagen, turmeric and resveratrol combine for a revolutionary approach to joint health
- ▶ Advanced support for joint and cartilage integrity, resilient tendons and ligaments, as well as comfortable movement
- ▶ Guaranteed to work or your money back!

SHOP TODAY

SmartPak.com/SmartStrideUltra



SMARTPAK™
SmartPak.com | 1-800-461-8898

SmartSupplements™
by  **SMARTPAK™**



From Practical Horseman Archives

FUELLING THE SPORTHORSE

The art of feeding performance horses comes in finding the best combination of dietary energy sources to meet a horse's individual nutrition needs.

By Katie Young, PhD, and Karen Davison, PhD

Research in the past several years has provided a great deal of information on meeting energy requirements of performance horses. However, there is still an element of art to balancing the various fuel sources to meet an individual horse's needs. Depending on the workload, type of work and individual metabolic differences, the type of feeding program can look quite different even among horses with similar lifestyles.

As a horse's level of performance effort increases, higher energy requirement is the most obvious change in his nutrient needs. Energy is the fuel used by the horse for all functions, including performance and maintenance of body tissues. Energy itself cannot be measured, but it can be converted to heat, which can be measured. We measure the energy stored in feed in megacalories (Mcal) or kilocalories (kcal). Kilocalories may also be reported in literature as Calories (with a capital "C").

Visual appraisal of body condition is a good indicator of whether dietary calories are being provided in adequate amounts. Due to the subjectivity of assessing how fat or thin a horse may be, a numerical body condition scoring system was established. The scores range from 1–9 with 1 representing a very emaciated horse and 9 an extremely

obese horse. While there may be some slight individual variation, performance horses are at their best when maintained at a moderate body condition score of 5–6. The description of a 5 body condition score is back flat (no crease or ridge), ribs not visually distinguishable but easily felt, fat around tailhead beginning to feel spongy, withers appear rounded over spinous processes, shoulders and neck blend smoothly into the body.

For practical purposes, energy requirements for work are being properly met if the horse's ribs are not visible but are easy to feel. If ribs can be seen, the horse is not receiving adequate dietary calories to support his level of work and maintain condition. If ribs are hidden under a thick cover of fat and are difficult to feel, calorie intake exceeds requirements for that level of work. Excess fat is not only additional weight for the athlete to carry but also provides unneeded insulation which may make cooling the body more challenging. While it is easy to determine when total energy needs are being met, understanding



LEFT: Performance horses are usually at their best when maintained at a moderate body condition score of 5–6. In practical terms, this means that a horse's energy requirements for work are being properly met if his ribs are not visible but are easy to feel.



ABOVE: Show jumping is considered a high-intensity anaerobic work that lasts for just a few minutes. Glycogen, which comes from starches and sugars found in grain, is often the main energy source for horses in this type of work, though it will need to be balanced with energy requirements from fat and fiber.



LEFT: If a horse's ribs can be seen, he is not receiving adequate dietary calories to support his level of work and maintain condition.

the sources of energy needed and utilized during exercise is a bit more complicated.

Understand Energy Sources

The discussion of energy sources for performance must cover dietary energy (calories) and physiological energy (the type of exercise and fitness level of the horse), both of which drive how calories are stored and utilized.

Different calorie sources are utilized and stored in the body in very specific ways. There are two primary energy stores, or fuel tanks, in the horse's body:

- **fat deposits.** Body fat is the major energy source during low-intensity aerobic activities that can last for several minutes

or even hours, including dressage, hunter or endurance phases of eventing rides.

- **glycogen** (a polysaccharide) is stored in the liver and muscles. It is the primary fuel source for higher-intensity anaerobic work that lasts for seconds or just a few minutes, such as show or stadium jumping.

The amount of energy stored in these fuel tanks depends on the calories available from the diet. Dietary calories can be supplied by carbohydrates, fats or proteins in the horse's ration.

Carbohydrates

Horses eat plants, and plants store energy primarily as carbohydrates and a small amount of fat. Plant carbohydrates include simple sugars, starch and fibers. Hay and pasture primarily provide calories

from fibers although some grass and hay can have relatively high sugar content.

Digestible fibers are fermented by microbes in the horse's hindgut and converted to volatile fatty acids, which are then absorbed. These acids provide the majority of energy required for the horse at maintenance but have limited capacity to fuel hard work. Dietary fibers cannot quickly replenish glycogen stores.

The immature leafy portions of plants and grains such as oats, corn and barley provide more calories from starch. During digestion, starches are broken down into simple sugar building blocks, which are absorbed primarily in the small intestine. The sugars may then be immediately used as fuel for work or stored as glycogen in the

muscle fibers and liver. Once the glycogen fuel tanks are full, they will contribute to body fat stores.

Fats

Fats are calorically dense and energetically efficient, providing more than twice the amount of calories by weight as carbohydrates in general and generating much less heat of digestion than fibers. In general, 1 pound of fat (two cups of vegetable oil) provides the same number of calories as 3 pounds of oats. So adding fat to the diet allows the horse to ingest more calories in a smaller quantity of feed. Further, research has shown that adding fat to the diets of performance horses may improve performance, such as increased stamina and delayed onset of fatigue. Dietary fats cannot quickly replenish glycogen stores.

Proteins

Proteins are not major contributors of fuel during exercise and are a very inefficient source of energy.

When glycogen stores are inadequate, proteins can be used for energy, but their metabolism into energy produces three to six times more heat than that of carbohydrates or fat. This is wasted energy and may burden a horse trying to cool his body during work.

Proteins are essential in the body for maintaining muscle mass and as a component of antibodies, enzymes and some hormones, so it makes much more sense not to utilize protein stores for energy.

Remember, fats are the primary fuel for aerobic work while glycogen is the primary fuel for anaerobic work. Dietary fats and fibers cannot quickly replenish glycogen stores needed for high-intensity work. This is important when designing feeding programs for competition horses.

Fuel for a Working Horse

The best feeding program for a working horse should include dietary sources that

FUEL TANK: FAT DEPOSITS

■ Energy source comes primarily from dietary fats (e.g., vegetable oil) and fiber found in many different hays and pasture.

■ Needed for low-intensity aerobic work that can last for several minutes or even hours, including dressage, hunter or endurance phases of eventing



© AMY K. DRAGOO/AMMEDIA

A four-star eventing athlete generally requires a high number of calories with higher fat sources to supply fuel for prolonged activity and sufficient starch and sugar levels to refill glycogen storage after maximal exertion.

supply fuel to meet his maintenance and workload needs.

Anaerobic activities, such as show or stadium jumping, require adequate glycogen supplies to support the high-intensity work. Aerobic performance, including dressage, hunter or endurance phases of eventing rides, will also pull on glycogen stores but must have adequate fat available to provide fuel for sustained work lasting more than a few minutes.

It would be nice to be able to simply say “Feed show jumpers higher sugar/starch diets for brief, high-intensity work and feed dressage, hunters and eventers higher fat/fiber diets for more sustained work lasting more than a few minutes.” However, life is never that simple. The work performed during training and competing in all disciplines is a

blend of anaerobic and aerobic work, so all the physiological fuel systems are in play. The art of feeding performance horses comes in finding the best combination of dietary energy sources to meet an individual horse’s fuel needs for a particular activity as well as meeting that horse’s distinct metabolic needs.

Horses performing mostly aerobic work, especially at lower work-



© FOTOLIA/NEXUSSEVEN



ABOVE/LEFT: Horses performing mostly aerobic work, especially at lower workloads that rarely leave them fatigued, will often perform well on a ration that provides the majority of dietary calories from fiber, found in pasture and hay, with a smaller amount of calories from starch, sugars and fat.

loads that rarely leave them fatigued, will often perform well on a ration that provides the majority of dietary calories from fiber with a smaller amount of calories from starch, sugars and fat. Easy keepers in this category may require only good quality hay and 1 to 2 pounds per day

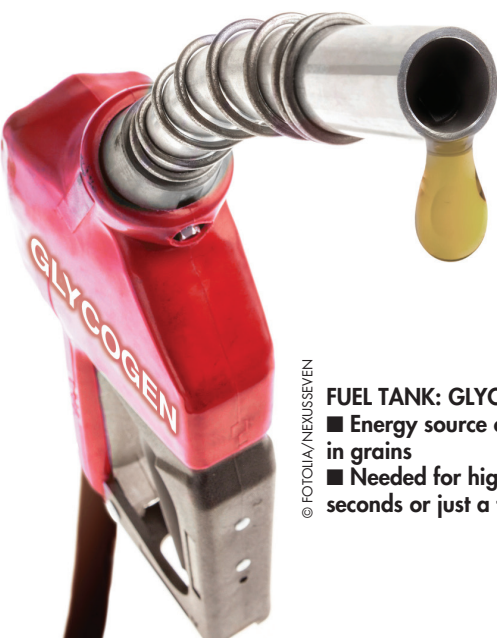
of a ration-balancing feed to provide essential protein, vitamins and minerals lacking in hays.

If the horse is a harder keeper and does not maintain body weight and condition or if he is working hard enough to require more calories, a moderate- to high-calorie feed with added fat will supply more energy for maintenance as well as fuel for sustained activity. The balance of fuel sources between fats, fibers and soluble carbohydrates for horses in less strenuous activities and lower workloads is usually based more on caloric requirements than specific fueling demands.

Higher-level performance horses often have more particular dietary requirements, necessitating additional attention to the various fuel sources provided in the diet. For instance, a horse competing at Novice level horse trials may do quite well on a diet that provides a moderate level of

calories primarily from fiber with a minor amount from fats, starch and sugars. But a three- or four-star eventing athlete requires much higher calories with higher fat sources to supply fuel for prolonged activity and sufficient starch and sugar levels to refill glycogen storage after maximal exertion. Further, the high-level eventing horse must be worked on a regular schedule for conditioning between events, which requires the feeding program to provide appropriate fuel sources throughout to support the activity as well as refill glycogen stores.

Similarly, a Training-level dressage horse who competes a few times per year may meet calorie requirements from a diet of mostly hay, but a Grand Prix competitor will likely require a substantial amount of feed to supply fuel for training and competing at that level. For high-level competitors, a bit of trial and error may be required to determine the best blend of calorie sources to support the fuel needs of the particular individual. Some horses perform at their best utilizing higher levels of dietary starch and sugars while others reach peak performance on diets containing higher amounts of fats and fibers.



© FOTOLIA/NEXUSSEVEN

FUEL TANK: GLYCOGEN

- Energy source comes primarily from sugars/starches found in grains
- Needed for higher-intensity anerobic work that lasts for seconds or just a few minutes, such as show jumping

Many horses can eat feeds containing fairly high levels of starch and sugars (grain-based or sweet feeds) and perform beautifully while remaining calm and steady while other horses seem to become more reactive or nervous when fed enough calories from typical grain rations to maintain good condition. This has led some horse owners to prefer feeding very low starch and sugar rations or to not feed concentrate feeds at all, only hay, to their performance horses in an effort to maintain a quiet, relaxed attitude. While these diets will often lack important amino acids, vitamins and minerals, they may provide adequate calories to support a horse performing in low-level competitions or participating in only a few classes over a weekend show where they don't have repetitive training sessions, warm-ups and multiple classes several days in a row. A horse in good body condition who competes at infrequent intervals will have time for the body to replenish used-up glycogen stores to re-fuel the tank.

However, during long competitions or strenuous work over several days, the horse's glycogen tank may be depleted and without adequate starch and sugar in the diet will often not refuel quickly enough for the next round of competition. There may be horses who perform beautifully during the early rides and then appear to "run out of gas" later in the competition. It is important that a feeding program designed for hard-working per-

Many horses can eat feeds containing fairly high levels of starch and sugars, such as sweet feeds, and remain calm and steady while others seem to become more reactive or nervous when fed enough rations to maintain good condition.



Some grains provide more calories from starch. During digestion, starches are broken down into simple sugar building blocks, which are then absorbed primarily in the small intestine. They may then be immediately used as fuel for work or stored as glycogen in the muscle fibers and liver.

© AMY K. DRAGOO/AIMMEDIA

formance horses or horses competing over multiple days provides adequate amounts and the proper blend of calorie sources to help top off those fuel tanks within hours following feeding.

Taking all this physiology into consideration, the recommendations for dietary calorie sources to fuel performance horses would be a blend of fats and digestible fibers to fuel aerobic work with sufficient starch and sugar to maintain glycogen stores for use during the anaerobic portions of activity.

In general, good-quality hay combined with feed providing more calories from fats and fibers and a moderate amount from starch and sugar may help maintain a level, obedient attitude while supplying appropriate fuel to support the work. However, individual horses at higher levels may require careful attention to the balance of each of the dietary fuel sources in providing the best nutrition to support the workload of training as well as optimal competition performance. 🐾

***Katie Young, PhD**, has been an equine nutritionist/technical services manager with Purina Animal Nutrition. Her responsibilities have included developing and maintaining horse-feed formulas and standards as well as ingredient and production standards. Dr. Young earned her bachelor's degree from Missouri State University and her doctorate in equine nutrition and exercise physiology from Texas A&M University. She has ridden and competed in eventing and has worked as a trainer/instructor in the Kansas City area.*

***Karen Davison, PhD**, is an equine nutritionist and sales support manager with Purina Animal Nutrition. She received her master of science degree and PhD in equine nutrition from Texas A&M University. Her research included early work investigating the use of added fat in horse diets. She spent eight years with the Texas Agricultural Extension Service in the State Horse Specialist Office before joining Purina 27 years ago. She and her family are involved with breeding, training and competing cutting and rodeo-performance horses.*



© CHARLES MANN/CMANPHOTO.COM