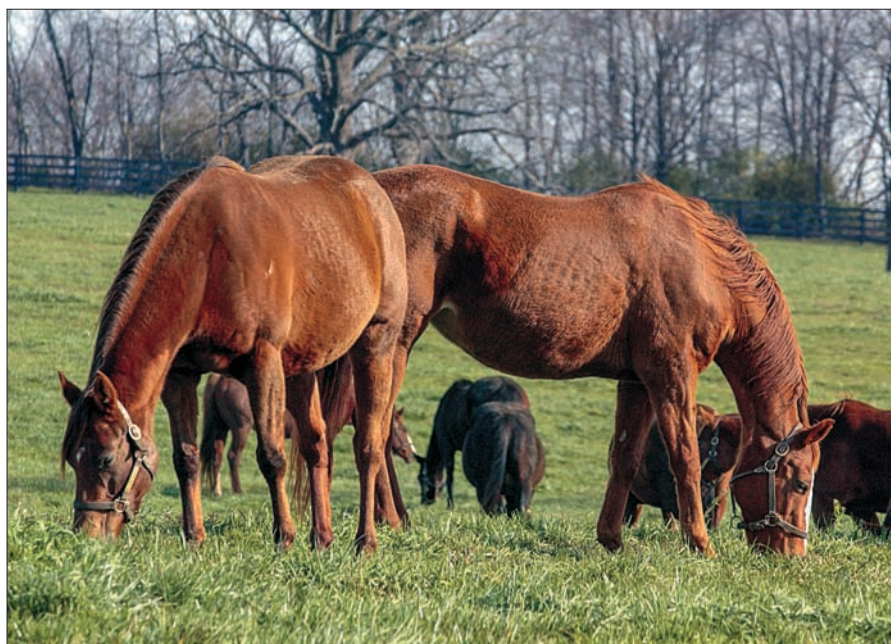


# A Guide to Complete Feeds

BY DR. JULIET M. GETTY  
ANNE M. EBERHARDT PHOTOS



Hay and/or pasture should make up the bulk of your horse's diet

**F**eeding time! Open a bag of ready-made feed and you're set, right? But wait—there's a staggering variety of offerings on the feed store's shelves, and

it's important you choose the correct one for your particular horse.

Manufacturers fortify these feeds with vitamins and minerals in a "complete"

blend designed to provide all the nutrients a horse needs (when fed the recommended amount) without additional supplementation. Hay and/or pasture grass should make up the bulk of your horse's diet (he requires 1.5 to 2.5% of his body weight in forage per day), so most complete feeds are meant to be fed in addition to adequate forage. While many horses (particularly overweight or sedentary animals) simply need hay/pasture, water, salt, and a vitamin/mineral supplement to meet their nutritional requirements, the underweight horse or horse in training, for instance, will benefit from a commercially fortified feed.

The array of complete feeds includes some that are cereal grain-based and others that are low-starch. Some are sweet feeds and still others are pelleted. There are those designed for growth, broodmares, performance—even senior citizens.

When choosing a complete feed appropriate for your horse, look for these basics depending on the appropriate category:

## Maintenance feeds

Look for a variety of ingredients (not just cereal grains) including supplemental vitamins and minerals. Sometimes called balancer pellets, these are generally low in calories and fiber and best accompany vitamin-rich fresh grass pasture. Hay lacks many of these vitamins, so if feeding hay only, you might need one of these feeds and possibly additional supplementation.

## Performance feeds

These provide more calories than maintenance feeds, usually from extra fat. Choose feeds with good fat sources such as flaxseed meal and rice bran. Protein levels should be at least 14% (although they can be as low as 10% if you also feed alfalfa), provided by a variety of ingredients such as alfalfa meal, soybean meal, seed meals, beet pulp, and brans.

Horses in high-speed disciplines benefit from some starch (cereal grains), whereas those in endurance disciplines benefit from fat for longer lasting energy. So unless you're working with very high-performance horses (think Thoroughbreds or Olympic-level eventers and jumpers), you should avoid high-starch feeds, suggested Dr. Carey Williams, extension specialist in equine management at Rutgers

## Dandy Products, Inc.

### Padding & Flooring Specialists



### "Padding At Its Best"

Breeding Sheds, Stocks, Stalls, Trailers, Exercise & Training Areas,  
Induction & Recovery Rooms Table & Surgical Pads, Neo-Natal Foal Beds

### Non-Slip Safety Floors for All Areas

Pavesafe Bricks & Tiles, Trac-Roll & Vet-Trac Floors, Wash Stall, Grooming, Aisleway and Trailer Mats

Toll-Free 888-883-8386 • 513-625-3000 • FAX 513-625-2600  
3314 State Route 131, Goshen, Ohio 45122 • [www.dandyproducts.net](http://www.dandyproducts.net)

University, in New Brunswick, N.J.

“High levels of starch not being used for exercise causes excess acid production, which contributes to gastric ulcer development,” she explained.

Also, look for added B vitamins, which the horse needs to utilize energy.

**Growth and broodmare feeds**

High-quality protein is very important for these horses. Your feed should contain at least 16% crude protein from a variety of feedstuffs. Nutritionists do not recommend feeding growing horses large amounts of cereal grains because high-starch diets can contribute to developmental orthopedic disorders.

**Senior feeds**

These tend to be higher in fiber, as the senior horse’s ability to chew grass and hay has likely diminished. A quality senior feed also contains vitamin C (since vitamin C production declines with age) as well as digestive enzymes.

Complete feeds also come in many forms, such as:

**Sweet feeds**

Horses are born with a sweet tooth, but to no surprise this taste preference doesn’t equate to optimal nutrition. Manufacturers sweeten these feeds using 10-12% molasses, and they are typically grain-based—



Pellets provide an opportunity to feed a mixture of ingredients

containing oats, corn, or barley. Problems develop when easy keepers or horses not engaged in regular exercise consume too much. They then might have difficulty managing blood sugar levels, similar to a

human with type II diabetes.

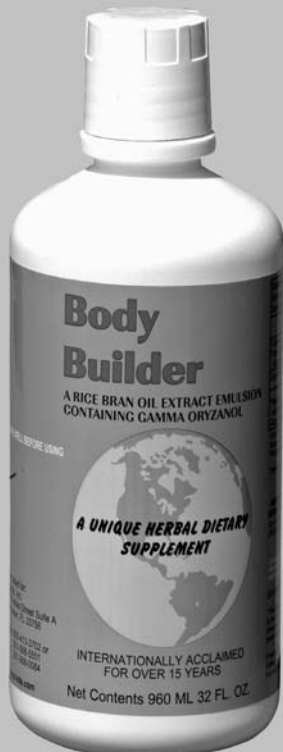
**Pelleted feeds**

Pellets provide an opportunity to feed a mixture of ingredients, including legumes such as alfalfa meal and soybean

**A Healthy Alternative to Anabolic Steroids**

**IT WORKS!!**

*The First, and Still the Best, for over 22 Years!*



ONE BOTTLE=ONE HORSE=2 MONTHS

**Body Builder™**

*“I have been using Body Builder™ for over 8 years and it has kept my racehorses in excellent condition. It has helped increase their stamina, strength and over all performance. It keeps them feeling good.”*

— Doug O’Neill

**“All natural, Healthy, and Effective.”**

*Get Your Horses on Body Builder Today!*

- Proven again and again the best for sales prep, yearlings, weanlings and 2YO’s in training
- Increases muscle, energy and stamina
- Increases appetite and all around health
- Reduces nervousness and stress
- Excellent for racing and problem breeding stock



BENOIT & ASSOCIATES PHOTO

**DOUG O’NEILL**  
Trainer of 2012 Kentucky Derby and Preakness Stakes winner  
**I’LL HAVE ANOTHER**

**Introducing our newest product, AIR BLAST**

**EQUIADE PRODUCTS**

(201) 568-5551 ■ (201) 568-0084 fax  
www.equiade.com

Available in various catalogs and at your local tack shops and veterinarians.



meal, bran, beet pulp, flax, and more. Some might contain cereal grains, which means not all pellets are low-starch.

#### Extruded feeds and hay replacers

Because many older horses have worn or missing teeth, manufacturers typically market these as senior feeds. Easy to chew and highly digestible, some hay replacers can be as simple as hay pellets or cubes (to which you would add a vitamin/mineral supplement) or as complete as any other commercially fortified feed.

#### What's in the Bag?

Feed ingredients are listed on the label from highest to lowest concentration:

#### Cereal grains

Horse people often use the term "grain" casually to describe any feed given in addition to forage. But because not all feeds are cereal grains, this term should be reserved for true grains (i.e., oats, corn, barley, etc.). Oats and corn are the most common grains incorporated in feeds, followed by wheat and barley. Rye, rice, and millet are used less frequently.

Grains are nearly 50% starch. The horse digests them in the foregut (small intestine) down to glucose, which can cause sharp peaks in blood sugar and sometimes related behavior problems. Horses that require low levels of starch in their diet (e.g., insulin resistant, overweight, or pituitary pars intermedia dysfunction-affected horses) should not receive any cereal grain. Performance horses expending large amounts of energy, on the other hand, need the digestible energy starches provide to meet their bodies' needs.

Oats, as mentioned, are the most commonly fed grain. They are also the safest grain to feed because they are digested easily in the foregut, as long as you limit the meal size to no more

than two pounds of pure oats. Corn is also popular; however, it is not digested adequately in the small intestine. More of it reaches the hindgut due to its high starch content, adding to a horse's risk of developing colic and/or laminitis (inflammation of the interlocking leaflike tissues attaching the hoof to the coffin bone). Furthermore, feeds containing corn are more likely to contain mycotoxins, a potentially deadly contaminant produced by certain molds.

#### Protein and fat sources

Nutritionists recommend a variety of high-quality protein sources in a product. Soybean meal is excellent because it is the one plant that comes closest to animal protein in quality.

Owners can grind up seeds, such as sunflower seeds and flaxseeds, into a nutritious feedstuff that is not only high in protein but also contains a substantial amount of fat. However, fat differs greatly between sunflower seeds and flaxseeds. Though calorie count is similar, sunflower seeds are high in potentially inflammatory omega-6 fatty acids whereas flaxseeds contain mostly beneficial omega-3 fatty acids. This is important to consider because a horse's daily omega-3 to omega-6 intake ratio (ideally, 4:1) can affect various inflammatory conditions.

Oils provide calories purely from fat and contain no protein or carbohydrates. Soybean oil comprises mostly omega-6 fatty acids, which can unbalance the delicate omega ratio in the diet.

Generally, ponies, miniature horses, donkeys, and mules should not consume feeds high in fat. They do not metabolize fat efficiently, which makes them more likely to gain weight and develop insulin resistance (a reduction in sensitivity to insulin that inhibits cells' ability to transport glucose out of the bloodstream and store it as glycogen) than horses.

#### Beet pulp

The sugar beet plant's pulp, in fact, contains barely any sugar. Molasses added to improve taste brings the sugar levels to only 3%—that's a mere half-cup of sugar in 10 pounds of beet pulp.

The bacterial flora in a horse's hindgut digest beet pulp's fiber content easily. This makes it a good feed choice for any horse requiring starch and sugar restriction. Dr. Nicholas Frank, professor and chair of the Cummings School of Veterinary Medicine at Tufts University, advises feeding beet pulp to insulin resistant horses because of its minimal effect on blood glucose levels. And from a digestible energy perspective, beet pulp is right up there with the big cereal grains, supplying 1.3 Mcal/lb, compared to oats at 1.5 Mcal/lb.

#### Byproducts

Although the term has a bad reputation, a byproduct is simply part of the whole. If you eat bran, for example, you are eating a byproduct of the whole grain. Plant byproducts can be nutritious additions to feeds, and reputable feed companies will use only high-quality byproducts. Avoid feeds labeled in vague general phrases such as "grain byproducts" or "plant byproducts."

There are many plant byproducts, including brewer's and distiller's grains, wheat middlings, soybean hulls, bran, and others. Brewer's grain is a byproduct of the brewing process. When the starchy portion of the grain is fermented into alcohol, a palatable byproduct that is high in low-quality protein results. Distiller's grain is similar but is derived from the distilled liquor industry (rather than beer). It, too, is exceptionally high in protein, though not complete—lysine (an essential amino acid) must be added to create a high-quality protein. Highly digestible, both of these byproducts serve as good sources of B vitamins and fiber.

Wheat middlings consist of the outer bran and the germ, without the grain's starchy center. The bran is mostly fiber, but it also contains vitamins and minerals. The germ provides the beneficial protein, fat, carbohydrates, vitamins, and minerals. But with a starch content averaging 30%, wheat middlings are not considered a low-starch feed, just a lower-starch feed.

Soybeans' outer, fiber-rich hulls are low in starch and contain

**QUILLIN**  
Leather & Tack

Sale Halters	\$30.95
Lead Shanks	\$25.95
Sale Catalog Covers	\$59.95

Plus MORE Great Custom Made Leather Goods  
Full Service Repair & Engraving - All At Our Shop!

CALL OR DROP BY OUR MAIN STREET STORE  
VISIT & ORDER ONLINE AT [QUILLIN.COM](http://QUILLIN.COM)  
SINCE 1982 ... KENTUCKY'S LARGEST CUSTOM SHOP  
WE SHIP WORLD WIDE

1929 South Main Street • Paris, Kentucky • 40361  
(800) 729-0592 • [www.Quillin.Com](http://www.Quillin.Com) • [facebook.com/QuillinLeather](http://facebook.com/QuillinLeather)

a fair amount of fat, making them a good energy source without the notorious blood glucose highs and lows grains create. At Texas A&M University's Department of Animal Science, researchers studying soybean hulls found them to be a suitable alternative equine feed source due to their highly digestible fiber content and propensity to stabilize the hindgut pH.

Owners commonly add rice bran to a horse's diet as a fat source. It is particularly high in monounsaturated (omega-9) fatty acids and veterinarians and nutritionists recommend it over soybean oil or corn oil.

Armed with all this information, keep in mind these standard guidelines for feeding complete feeds:

- Always feed forage as the foundation of the diet.
- Complete feeds are designed for senior horses and horses that are working, breeding, or growing, to provide the calories and nutrients needed to maintain normal body weight and condition.

• If you feed the product at lower-than-recommended amounts, you also need to add a vitamin/mineral supplement.

• Weigh your feed and never feed more than four pounds at a time to an adult horse.

• Avoid sweet feeds.

A commercially fortified complete feed is not your only choice. Some owners prefer the control of feeding straight ingredients such as oats, beet pulp, or hay pellets and adding any necessary supplements. This avoids the risk of oversupplementing when adding a vitamin/mineral preparation to a complete feed. If your horse does not require the added calories of a com-




Alfalfa, shown in cubed form, complements your horse's forage intake

mercial feed, it's best to go with basic ingredients at a lesser quantity or, according to Williams, provide a balancer pellet specifically formulated for feeding in small amounts to complement the hay and pasture's vitamin and mineral profiles.

#### Take-Home Message

When it comes to complete feeds, you get what you pay for. Oats, corn, and molasses, for instance, are cheap ingredients, each with a downside. More nutritious feedstuffs such as soybean meal, alfalfa, flaxseed meal (and other seed meals), beet pulp, rice bran, and grain byproducts complement your horse's forage intake,

balancing his diet. If your horse needs extra calories, feeding a complete feed at recommended levels ensures he gets the nutrition the label promises; otherwise, feeding less than the recommended amount will mean providing fewer calories but your horse will need vitamin and mineral supplementation. 

Excerpted from *The Horse: Your Guide to Equine Health Care*. Free weekly newsletters at [www.TheHorse.com](http://www.TheHorse.com)

the **HORSE**  
YOUR GUIDE TO EQUINE HEALTH CARE



# From Innovation Comes Solutions

## « NEW SYNTRA RACE PLATE FROM KERCKHAERT

The Syntra series is a unique Kerckhaert design, excellent for training and racing on dirt tracks; allowing easier breakover while still providing the traction needed for coming out of the gate. *With beveled aluminum coming to the top of the insert in front of the toe grab and a rolled toe, this versatile shoe is also a good choice for racing on synthetic surfaces where a regular toe is allowed.*

**KERCKHAERT**  
Dedicated to excellence

**FPD**  
FARRIER PRODUCT DISTRIBUTION

For the name of a farrierproducts™ dealer near you, please visit [farrierproducts.com](http://farrierproducts.com) or call 1-800-468-2879.

Like FPD on Facebook at [facebook.com/FarrierProductDistribution](http://facebook.com/FarrierProductDistribution) • Check out the HoofWall™ Blog at [farrierproducts.com/blog](http://farrierproducts.com/blog)