

Feeding Horses Around the World

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Traveling around the world, it quickly becomes obvious that there are as many ways to feed a horse as there are horses. The traditional meal of timothy hay and oats is seldom the rule. As horses were moved to different parts of the world, bringing enough feed from home for them was out of the question so they were given what was available to them in that area. Sometimes the horses thrived; sometimes they had a very difficult time. Those that had very good forage available excelled in performance. One example is the Thoroughbreds in Kentucky which graze Kentucky bluegrass.

This article on feeding around the world is by no means a comprehensive discussion of the different feeding systems of horses, but is meant to give a flavor of the many different ways to feed a horse and explain some of the challenges that some countries face in achieving that goal.

Forages Around the World

Forage is the staple of the horse's diet. Without sufficient forage in a horse's diet, there can be dire consequences. In many countries, the biggest challenge or expense appears to be supplying sufficient quantity and quality forage to maintain healthy horses.

Starting with the Familiar

In the United States and Canada there are differences in the type of forage fed to horses because of the different regional climates. For example, in the Northeast horses are fed lovely cool-season perennials like timothy or orchard-grass which is often grown with alfalfa or clover. The horses are grazed on fescue, bluegrass and clover pastures with timothy, rye and orchard grass possibly intermixed. Farther south, where the climate is warmer and it is harder to grow cool-season grasses, horse owners look to warm-season perennials like pangola, bermuda and bahia grasses as pasture and hay. In the Midwest, there might be some buffalo grass, bluestem, grama and brome grass. Moving farther west and to the north, fescue, bentgrass, bluestem, grama and crested wheat grass are found. Back down the West Coast to California, bermuda grass and rye grass are found once again. In states like California, the

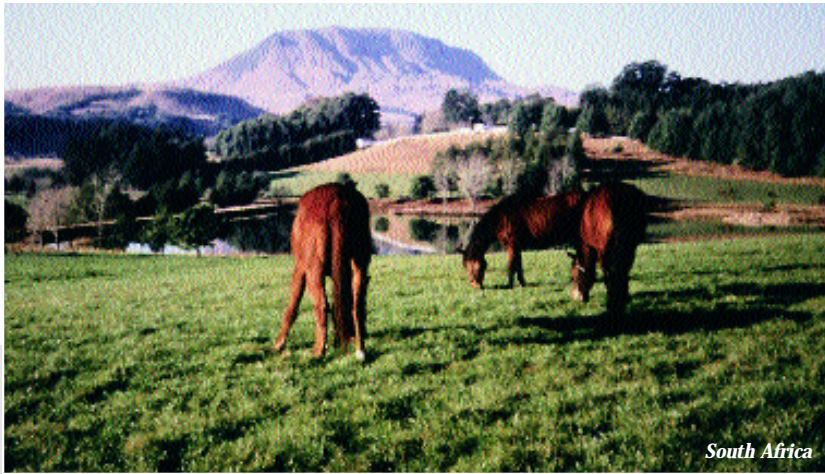
pastures have to be irrigated in order to produce grass year-round. This may be too expensive for the average horse owner, and as a result many horses never see pasture, only hay, hay cubes or hay pellets. Many horses in Arizona and New Mexico have never seen a flake of hay and only eat hay pellets. Alfalfa is the crop of choice to grow for hay in the West, especially where irrigation is available. As a consequence, the most readily available hay to horse owners is good quality alfalfa. This can pose some interesting challenges in balancing the high protein and calcium with the low phosphorus and trace mineral content.

Other interesting by-products of the feed industry are used in the U.S. to increase fiber intake in horses when forage availability is a problem or in horses that have difficulty eating rough forages. Some of these alternative fiber sources are beet pulp, peanut hulls, almond hulls, soy hulls, sunflower hulls and citrus pulp. Beet pulp consumption in the equine population has increased tenfold in the last ten years because beet pulp has proven to be a safe and effective feed for maintaining weight on horses.

Horses in Canada have very similar feeding regimes as horses in the U.S. The growing season may be shorter, but the climate in some parts of Canada is ideal for producing high quality alfalfa and timothy hays. Much of the alfalfa is compressed in bales or dehydrated and exported to many parts of the world. Because of the severe temperatures in the winter, the horses are often fed wheat straw (readily available because of the large wheat crops) to help them produce heat internally to keep warm.

Moseying Farther South

Forage is very limited on islands in the Caribbean. Fresh forage that can be grown is very nutrient poor except in the early growth stages. Making quality hay is not a priority, so what is fed to the horses is not much more than filler. Many top horse producers import hay, particularly if they have an important event to prepare for such as a Thoroughbred yearling sale. In breeds such as the Paso Fino, where extra fat gives the horses a smooth, well-rounded look, colic kills one out of



South Africa



Kentucky

KEE file photos



California

New Zealand

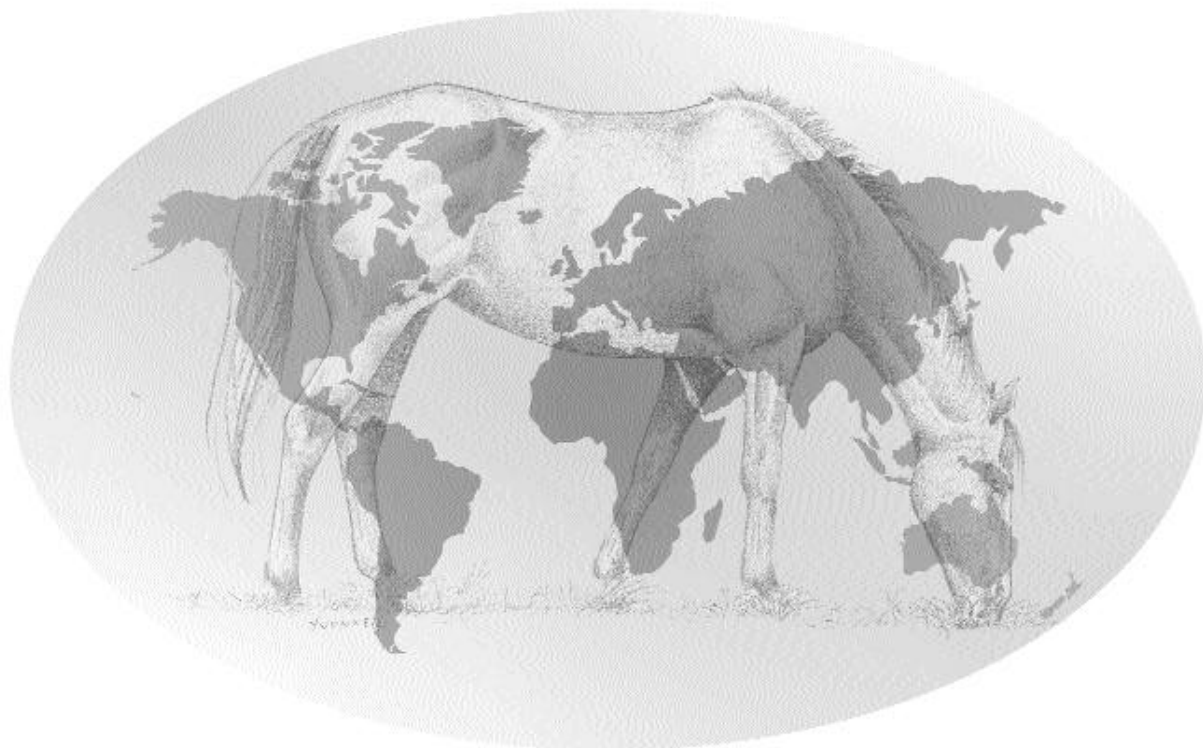


Puerto Rico

every four horses because of high grain, low fiber diets. On smaller islands some horses are even fed the leaves from coconut palm trees. These leaves serve only as a filler and supply the horse with very few nutrients due to their high indigestible fiber content. Coconut palm leaves provide little more than chewing satisfaction.

In South America, different latitudes deal different challenges. For example, Argentina has the famous “pampas” which are known to be fabulous for grazing and making quality hays for horses. Grasses commonly found on the pampas are rye grass and pasto miel, with pasto ovillo and cebadillo perhaps seeded in. Argentina produces some very

countries. Since importation of hay is an expensive prospect, the local forages are fed but complemented with other sources of calcium. Some common tropical grasses are King grass, kikuyu, tighten (Pensacola bahia grass), estrella (stargrass), pangola and transvola. Some of the tropical forages grow quickly, are quite tall and coarse, and are not suitable for grazing. Because of the abundance of roughage, horsemen make these forages edible to the horse by cutting them daily in the field and running them through a chopper to make bite-sized pieces. Served to the horse in his feed bin, this is called “green chop” or “pasto fresco.” Tropical forages tend to be very low in protein, so



fine horses as a result of feeding nutritious, high quality forage. As one goes farther north to Brazil and Colombia, the tropical forages found in this part of the continent are not ideal for horses because they tend to be high in oxalates. Oxalates interfere with the body's ability to absorb calcium from the plant. The higher the oxalate concentration, the lower the calcium absorption. Since calcium is very important in the overall health of the horse, anything that interferes with absorption could exacerbate potential problems such as secondary hyperparathyroidism or “big head” disease (caused by more phosphorus in the diet than calcium). While big head disease was fairly common in the United States up to the turn of the century, it is still commonly seen in tropical

much of the nutrition of horses maintained on tropical forages has to come from the grain concentrate. By-products of the feed industry are also fed to horses in these countries. The fiber from sugarcane after the sugar has been removed is often fed. It accounts for mostly bulk to the horse because it contains a very high level of lignin (indigestible fiber). Sometimes horses are even fed raw sugarcane chopped into bite-sized pieces as an appetite stimulant (all horse owners know about the horse's sweet tooth). Brazil grows some alfalfa but not enough to supply the other countries with ample quantities. Much of the alfalfa has to be imported from countries like Canada and the U.S. and is usually imported dehydrated for mixing into the commercial feeds.

Across the Atlantic

Even though England is across the sea, it seems the English “wrote the book” on feeding horses. It seems as though whatever the English are feeding will eventually trickle down to the U.S. and become common practice here. Horse pastures in England are mostly rye grass but they do have fescue and some native grasses. Horses may be grazed during the growing season but tend to be kept stabled more during the cold seasons. Making hay in England is a challenge because of the lack of dry weather for curing hay before baling. As a consequence, rather poor quality hay is fed and “chaff” is used as a fiber source and filler. Chaff is chopped-up straw with a little bit of molasses and possibly some vegetable oil sprayed on it. Nutritionally, chaff is not very high in protein or any of the minerals or vitamins with the exception of vitamin D. Chaff does give an animal, which evolved as a continuous grazer, something to “graze” and break the boredom while in a stall.

Most of northern Europe uses ryegrass as the principle horse pasture, yet in the winter, many horses live full-time in stalls. Since hay is difficult to make in the climate of northern Europe, different forms of silage are fed to horses with relatively few problems. In fact, once horses acquire a taste for silage (fermented forage), they find it quite palatable. Winter forage may even include corn silage or haylage (grass made into silage). Haylage is ideal for horses with respiratory problems because it is virtually dust free. Hay found in northern Europe is typically a mixture of meadow grasses of poor or mediocre quality, although there is some alfalfa available. The French are well known for filling their horses up with tasty barley straw when hay is in short supply. Occasionally, if there is a bumper crop of potatoes in Holland or Germany, it is not unusual to see the farmers offering potatoes to horses.

Out of Africa

Although the names of the grasses found in South Africa may seem strange (steek grass, love grass, turpentine grass, klits grass and red grass), they are acceptable forage and some make good hay for horses. Some pampered horses are fed alfalfa (lucerne) and teff (a grass) when it is available. In the Karoo area of South Africa, where there is little to no grass for foraging, the horses depend on browsing native scrub and bushes like goats. Working horses in this region would, of

course, need additional hay and grain to meet the energy demands for performance.

Following Marco Polo

In countries in the Middle East, modern sport horses are generally pampered and have a variety of high quality hays and hay cubes imported from the U.S., Canada, South Africa and Australia. Many countries in that region, like Saudi Arabia, Iran and Iraq, can grow hay in irrigated fields. No pastures for grazing are available in such arid countries. Politics can play a huge role in the availability of forages to different countries in the Middle East. For instance, when Iran had its revolution all exportation of hay was cut off to less fortunate countries. It is common, especially in the smaller countries like Kuwait, United Arab Emirates and Qatar that grow no hay, to cultivate small patches of “jet” (alfalfa that is chopped and fed fresh) in areas that have wells. Jet serves to maintain the digestive health of horses and keep their appetites up in the same way that fresh pasture would. In addition to jet and alfalfa hay, they may feed rhodes hay (a coarser grass hay made in Saudi Arabia) as filler. Maintaining horses is somewhat of a challenge because of the heat. Many horses are maintained in stalls which are kept as cool as possible or in small dirt paddocks with shade.

In India, the horses are commonly fed very low protein hays, which results in growth problems. The fortunate horses get fresh chopped alfalfa when it is available. Horses in Indonesia may be offered peanut hay and sweet potatoes. In Singapore, the horses depend on imported forages, making them very expensive to feed. The horses are fed some chaff to increase forage intakes but not nearly enough, so colic is endemic in these racehorses. High grain and low fiber diets often result in founder in the racehorses, but interestingly enough there is a low incidence of tying up (often caused by high grain intakes).

Aside from a few dude ranches, most of the horses found in Southeast Asia are racehorses. The only local forage found is rice straw, which does not provide much in the way of nutrition. These areas of the Orient like Malaysia, Korea, Taiwan and Hong Kong depend almost solely on imported forage from Australia, Canada and the U.S. In China, owners may also import cheaper forages from the Middle East. Since the forage is so expensive, these countries also have the problem of not feeding enough forage to their horses, resulting in a great number of colics. Rice straw is the only for-

age that can be found in relative abundance but is of little nutritional value to the horse.

In Japan racehorses are fed very well because almost all of their feed is imported. They all live in stables and are fed imported alfalfa and timothy. The notion of desirable timothy hay to the Japanese is a light green grass that possesses a full seed head (that way it is undoubtedly timothy). Unfortunately for the horse, the full seed head is indicative of a very mature and poorly digestible hay. In the northern island of Japan, where land is not at such a premium, horses graze native grasses like bamboo grass. This practice is usually reserved to native ponies and not necessarily the well maintained racehorses. Some horses may have their diet supplemented with rice straw or rice hulls, which do little more than keep things moving through the digestive tract.

Down Under

In Australia the strong English heritage shines through in the feeding systems. Since Australia has very mild winters, the horses can graze year-round. Many of the horses live outside 24 hours a day and have unlimited access to forage that is primarily perennial rye grass with clover. Often pasture management (rotational grazing, fertilization, etc.) is not a priority on the farm, and this results in overgrazed, poor quality pastures. While alfalfa (lucerne as it is called in Australia) or grass/clover mix hays are the dry forages of choice, many use low quality grass hay and/or oaten chaff (chopped oat straw with molasses) for forage. The climate is good for making hays and clean bales are produced with little problem of molds, dust or other contaminants. During times of drought, the demand for alternative fiber sources increases the use of lupin hulls (46% fiber and 8.55% protein) or rice hulls (40% fiber and 3% protein) incorporated into fiber pellets. In the northern territory of Queensland (closer to the equator), it is expensive to feed alfalfa or any good quality forage. In northern areas, tropical grasses like kikuyu, setaria and buffel play a large role in the diets of these horses and are high in oxalates which interfere with calcium absorption, thereby causing bone disorders. In areas of North Queensland selenium-accumulating grasses can cause toxicity and pose management problems for the horses. Sometimes horses are fed "begasse," the fiber left after the extraction of the sugar in sugarcane, that has been treated with alkali to improve digestibility.

New Zealand is an extremely fortunate country in respect to forage. High quality forage (never lower than 20% protein) is grown in abundant quantities year-round. Much of the hay made in New Zealand is exported to Asia. Most of the horses live out all year and graze with very little or no concentrate necessary. Many racehorses are raced out of the paddock, meaning they live outside all of the

time and are pulled out of the pasture, raced and then turned right back outside.

Complementing Forages

The innumerable raw materials used for mixing compound grain mixes range from the common to the very unusual. There are numerous other feeds used to maintain a horse's appetite and to supply extra energy or nutrients not found in the forage (such as protein and fat). The major grain staples for most countries still appear to be oats, corn, barley, and wheat (especially middlings and bran), yet occasionally some milo, millet, sorghum, triticale and broken rice (as a last resort) may be used. Aside from the standard soybean meal, interesting protein sources can be found such as lupins, whole soybeans, peas, peanut meal, cottonseed meal, linseed meal, fish meal, rapeseed meal, tick beans, chick peas, lentils and brewers or distillers grains. Just about any kind of oil and fat can be used from the standard vegetable oils (corn, soybean, safflower, sunflower and canola) to palm oil, coconut oil, animal fats and even "ghee" (clarified butter commonly used in India). Other high-fat seeds and products are sunflower seeds, coconut meal, rice bran, linseed, and salt herring (Iceland). Sweeteners for perkling appetites might be molasses, cane sugar, honey, "jaggery" (brown sugar lumps), fresh dates, and even candies such as peppermints. Some conventional and unconventional treats offered to horses around the world might be apples, peaches, plums, pears, carrots, turnips, day-old bread, eggs, milk, beer, carob, and locust bean pods.

Balancing Forages

By this time, the impression that there is extreme variation in the ways to feed fiber to horses should be clear. Further, there is tremendous diversity in the products which can be used to complement the forages. As nutritionists at Kentucky Equine Research, it is a challenge to formulate the feeds necessary to satisfy the nutrient requirements of horses around the world. Our goal is to formulate balanced diets with readily available feed ingredients that will best complement the types of forages found in the different regions of each country. ☺☺

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