Facilities, Management, & Safety - General Knowledge Study Guide

I. Facilities

Barns

Ventilation

Ventilation is one of the most important aspects of a good barn design. Without good air quality, horses are more likely to develop respiratory problems and pneumonia. A well ventilated barn will have minimal drafts but enough air exchange to maintain a healthy environment.

Air quality is most important when the air moisture content or humidity is high. Higher humidity allows for particulates such as dust and molds to enter and settle deep within the respiratory system. It is ideal that the inside of the barn be about five degrees F above the outside temperature. When warm temperatures arrive, it is best to let the horse cool down by allowing air to move over the horse's body.

A common and cost efficient ventilation system is to leave a space between the roof surface and the top of the barn. A rule of thumb is that there should be at least one foot of ridge ventilation for each horse (especially if hay is stored above the stalls) and at least four to eight air changes per hour. There should be plenty of windows and openings to ensure air exchange.

Feed storage

Proper feed storage is important for a number of reasons. One reason is that horses that get into the grain can become very ill. Another important reason is rodent control. Feed should be stored in a separate room or building. There should be a latch or padlock and a closed container to prevent horses or other animals from getting into them. If a separate room or building cannot be furnished for the feed, feed bin containers are acceptable. Feed should be stored in a dry area below 77 degrees F. This will prevent bacteria and mold from growing.

When storing hay, it is important to make sure that there are not any water leaks in the roof. Otherwise mold will grow. Like grain storage, make the hay storage rodent free. For fire safety, it is best to store hay in a separate building. Hay should also not be stored near any heating or electrical sources.

Flooring

Stall flooring must be made of durable material which is non-slippery but absorbent, easy to clean, and resistant to pawing.

- Clay – maintaining clay floors are difficult because when horses urinate and move in the stall, holes can result. This contributes to sanitation problems.
- Limestone Dust – if installed over good surface that allows for drainage, then limestone makes a good hard surface.
- Concrete – easy to clean and sanitize. However, more bedding is needed to soak up urine. Can be cold and slippery if not bedded properly. Could also cause leg problems.
- Rubber floor mats – should be one piece or as few pieces as possible and fit close to the walls. Can be very expensive.

Bedding Materials

- Shavings – this is one of the most common types of bedding. It is absorbent and easy to sort through. Shavings come in multiple particle sizes and usually are made of pine. The smaller the shaving size the more absorbent it is. Shavings can be bought in bulk in bags or delivered in a pile.
- Straw – straw is a great option. It is less absorbent than shavings but the larger pieces make it desirable for foaling so that particles do not get stuck in the foal's respiratory system.
- Sawdust – sawdust is very absorbent and is common bedding type. It can be delivered in a pile.
- Wood Pellets – wood pellets are compacted and dehydrated. When they come in contact with moisture they expand. It is usually a good idea to slightly soak the pellets before putting them in the stalls.
- Paper – recycled paper, such as newspaper, can be used as bedding. This is a very absorbent bedding option but the ink in newspaper can rub off on white markings which is sometimes undesirable.
- Moss – peat moss can be used under other shaving types and can be bought at local farm and garden centers. It should not be used with horse with respiratory problems because it can be dusty.
- Hemp – this bedding type is becoming more popular. Depending on availability and price it can be a good option.

Watering

Today, many farms use automatic waterers. They should be placed in the back of the stall so an overflow tube can be attached and run to the outside of the barn. They should be checked daily to ensure proper function and be clean and disinfected like buckets. When using buckets to water, they should be emptied every day and washed every couple of days (every day if there is illness in the stable). Buckets do need to be refilled throughout the day. They typically are placed on the front wall of the stall so refilling with a hose is easily accessible.

Lighting

Proper lighting is important for both horses and farm workers. Lighting regulates the schedules of shedding of hair and estrus in the horse, which is controlled by day length. Two types of electrical fixtures are common in the stable: incandescent bulbs and fluorescent tubes. Fluorescent lighting is four times more energy efficient than incandescent. There should be protective coverings over the bulbs anywhere horses could reach them such as stalls and alleys.

Run-In Sheds

When out in paddocks or pastures, horses need shelter that is clean, dry, and protected from the weather. A shed consists of three sides, a roof, and an open side for horses to roam freely in and out of. It should be large enough for a few horses to stand or lie in (usually 100 square feet).

Pastures

Pastures are large vegetation areas that horses and cattle feed on. Pastures contain horses by a fence system. Some horses may be turned out during the day on pastures and some may live out in one. It is common for mares and their foals to spend much time in the pasture as it grows. Pastures can consist of many acres.

Soil characteristics

> There are many different types of soils each with a different color, texture, structure, and mineral content. Soil consists of many layers that range from the upper earthy and soft layers to the underlying rocky ones. The only way to produce adequate forage is by understanding the soil components of one's pasture via testing. Testing can usually be done by your local land grant university or agricultural extension center for a nominal fee.

Grasses

> Grass types and applicability vary based on a site's soil as well as climate. It is always best to utilize a variety of forages with special care taken of the types pregnant mares will have access to. The figures below depict common forage types and a relative assessment of their applicability.

Grass/Forage Cultivar	Color Code
Warm Season Perennial	
Warm Season Annual	
Cool Season Perennial	
Cool Season Annual	
Cool Season Perennial Legumes	
Cool Season Annual Legumes	

Note: Cool Season grasses tend to be annual only in warmer Southern USA areas providing forage to around May-June of each year. -- Warm Season grasses also may perform as annuals in cooler Northern USA areas, with possible permanent winter-kill of grass from cold temps.

Tolerance to Site Conditions: 1=Poor 2=Fair 3=Good 4=Excellent				
Common Name	Soil Acidity	Poor Drainage	Drought	Grazing
Bahiagrass	4	3	4	4
BermudaGrass Cheyenne & Ranchero	4	1	4	4
Dallisgrass	2	4	3	3
Pennleaf Pearl Millet	4	1	4	2
Browntop Millet	4	1	4	2
Kentucky Bluegrass	2	2	1	4
Orchardgrass	2	2	2	2
MaxQ Fescue	3	3	3	4
Timothy	2	2	2	2
Passerel Plus Ryegrass	3	4	2	4
Annual Ryegrass	3	3	2	3
Oats	2	2	2	3
Wintergrazer 70 Rye	4	2	2	3
Supergrazer (Rye & Ryegrass)	4	2	2	3
Wheat	1	1	2	3
Alfalfa	1	1	4	1
Red Clover	2	2	2	3
White Clover	2	3	2	4
Arrowleaf Clover	2	1	3	3
Crimson Clover	3	1	2	4
Hairy Vetch	3	1	2	2
Rose Clover	3	1	3	3

Source: http://horsepasture.com/info/selecting-a-grass.html#Feeding_And_Grazing_Horses_On_Clover

Paddocks and Fencing

Fencing encloses paddocks, like pastures, but they are used as exercise, holding, or short term grazing areas. Fencing should be at least 5 feet high (6 feet for tall breeds). Many types of

fencing are available such as wood, wire, or electric. Barbed wire fencing should never be used with horses to prevent injury. For each horse there should be 600 square feet for proper space. Paddocks should have soils that resist flooding and take up water easily to prevent messy and unsafe footing. Grass in paddocks should be palatable, digestible, and resilient to harsh winter conditions.

Arenas

Arenas are typically close to the main barn and used for training and exercising. An arena should be at least 36 feet wide, which is limited only to riding in small groups (no driving or large lessons for example). For group riding and driving at least 60 feet is acceptable. Ceiling height is a minimum of 14 feet for horses and riders safety. For jumping, 16 feet is recommended. There are a number of footings available for arenas including: dirt, sand, shredded tires and leather, fiber products, even composted manure and bedding. Each is dependent on a farm's budget, preference and what type of training or riding they choose to do.

Round Pens

Round pens are smaller, enclosed training or holding areas. Their small size enable the horse and trainer to establish a relationship by providing closer contact and preventing the horse from fleeing to a distance. Round pens are very popular with the training of wild horses because it helps to build trust. Rounds pens can be made of wood fencing or metal (enabling it to be portable). They usually have dirt surfaces and are often outside, but small stables may have built in ones.

II. Management

Fly control

Manure is excellent for fly breeding, therefore, remove and spread the manure regularly. Composting at proper temperatures will inhibit fly development. Pesticides can be used on manure piles to kill maggots.

Internal Parasites

All horses should be dewormed selectively by utilizing a fecal egg count to determine quantity and type of parasite to be targeted. Based on results the appropriate type of anthelmintic (dewormer) should be used.

Manure Management

Remove all manure from stalls, corrals, and paddocks on a daily basis. Be sure that you have a large enough space to accommodate the amount of manure being produced. Over time manure shrinks from decomposition and moisture loss. Manure should be stored at least 150 feet away from surface water and wells. A perimeter should be constructed around the stockpile to prevent contamination. Manure can be used on site or in other locations as fertilizer or for composting.

Rotational Grazing

Rotational grazing is periodically moving livestock to fresh paddocks, to allow pastures to regrow. Feed costs decline and animal health improves when animals harvest their own feed in a well-managed rotational grazing system. The pasture is grazed when it is leafy and nutritious often at 2 to 3 inches but variable depending on type of grass.

Maintenance of facilities

Most maintenance upkeep demands many hours of work. Labor can get expensive so it is important to maintain simple things such as fences. Small everyday things such as cleaning water buckets and mucking stalls also contribute to keeping a stable in top shape. Without proper maintenance things can break or be disrupted that could cause large problems. Some common things to maintain are: fencing, cleanliness of stalls, electricity and water systems, tack rooms (as well as tack), and grass cutting/snow removal systems.

Insurance

All riders at the barn should sign some type of contract and release of liability. For riders and students, there should be a release of liability if they get injured. For boarders there should be a boarding contract that ensures the owner and boarder have a firm agreement about what is expected and what care will be provided. **It is often advised to seek legal counsel when making such arrangements in case of contract breach.**

Horse safety

Horses should be stalled or boarded in clean and safe areas. There should be adequate access to food, water, and shelter. Horses should also not be near or turned out with animals that are aggressive or that they do not get along with. This is to ensure that there is less of a chance of the animals getting injured.