AN256

UF UNIVERSITY of FLORIDA
IFAS Extension

Fundamentals of Bit Selection and Use[1]

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Bit selection is a critical area of consideration for riders of all disciplines and levels. Bit selection is often regulated by various breed and/or horse show associations. In addition, tradition often plays a role in the selection of a bit. Unfortunately, many times this may result in a horse being bitted with a bit that is not the best choice for either the horse or the rider. When training the horse or riding for pleasure, the selection of an appropriate bit can be based solely on what is best for the horse and rider. However, when competing in organized events, it is important to be aware of any restrictions that are imposed by the sanctioning/hosting organizations. For many horse enthusiasts, lack of knowledge in bit types and functions, as well as common misconceptions held in the horse industry, make choosing an appropriate bit a difficult process.

Types of Bits

In order to select a bit, it is important to first understand the principles of how a bit functions and the pressure points on the horse that are affected by different types and designs of bits. The two basic types of bits that can be used are snaffle bits and leverage (curb) bits. These differ in the areas on the horse where each applies pressure. In addition to these two types of bits, there are hackamores, which are generally considered not to have a mouthpiece. Hackamores may be true hackamores (bosal or sidepulls), which are direct pull devices, or mechanical hackamores, which employ leverage. There are also many pieces of headgear that combine a mouthpiece with a mechanical hackamore and also several options that combine a snaffle bit with a piece over the nose that does not incorporate leverage.

The points on the horse's head that can be affected by a bit or some type of headgear include the tongue, bars, cheeks, lips, palate, nose, curb area, and poll. Some pieces of headgear may be able to affect nearly all of these points while some may only affect two or three of these points. Snaffle bits are considered direct pull bits because when the rider pulls on the reins, that pressure is transmitted directly to the horse's mouth. It is a common misconception in the industry that a snaffle bit is one that has a broken mouthpiece; that is, the mouthpiece is comprised of at least two pieces. This is wrong, even though it is propagated by many catalogs, books, and "experts." A snaffle bit may have a solid mouthpiece, a two-piece mouthpiece, a three-piece mouthpiece or multiple links, such as a chain. The mouthpiece may or may not have a port, rings, keys, dogbone, etc. The key to identifying a snaffle is that it is a bit that operates off of direct pull; there is no leverage

1. This document is AN256, one of a series of the Department of Animal Sciences, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date January 2010. Visit the EDIS website at http://edis.ifas.ufl.edu.

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involved. The reins on a snaffle bit attach directly to the mouthpiece, not to a shank. A curb bit, on the other hand, involves leverage, which means the reins are attached to a shank of some design. A curb strap of some type is used under the chin of the horse. When the rider pulls back on the reins, pressure is applied not only to the horse's mouth and chin but also to the horse's poll; this is the leverage effect. It requires that the reins not attach directly to the mouthpiece but instead to some type of shank on the bit. The reins attach to the bottom part of the shank, and the cheek pieces of the bridle attach to the upper part of the shank. As the rider pulls back on the reins, the top part of the shank moves forward as far as the curb strap will allow. This creates the leverage. The tighter the curb strap, the less pressure that is applied to the poll; and the looser the curb strap, the more pressure that can be applied to the poll, as the top of the shank can rotate farther forward, thus putting more pressure on the poll. Assuming that the mouthpiece is adjusted properly in the horse's mouth, even if a curb is not used, there is still leverage on the poll of the horse since the reins are not attached directly to the bit but instead to a shank that rotates forward when pressure is applied to the reins. Poll pressure can be a very effective tool in eliciting certain responses from the horse. Horses are naturally inclined to move away from poll pressure and, therefore, will often lower their heads and flex at the poll to escape the pressure. This is a desired response used to achieve greater performance in many disciplines. However, to perform correctly in a curb bit, the horse must have already learned how to be guided willingly and submit to bit pressure. Too much poll pressure too early in a horse's training will often cause the horse to either fight or evade the bit.

Figure 1. Examples of a commonly seen snaffle bit (left) and curb bit (right). Notice that on the snaffle bit, reins attach directly to the mouthpiece while on the curb bit, reins attach to a shank attached to the mouthpiece.

How to Select an Appropriate Bit

The Size

When selecting a bit, the first consideration is to determine the appropriate or desired type of bit (snaffle or leverage). The next criterion should be to select the desired mouthpiece. Once the type of bit and mouthpiece is selected, the next consideration is to be sure that it is the proper width to fit the horse. Bit width is the distance between the two cheek pieces or rings of the bit. Standard bits are five inches wide and are the most common. Pony bits are generally four and one-half inches wide, and bits that are designed for Arabians and other light-boned, refined horses are four and three-quarters inches wide. For horses with wider mouths, bits are available in widths of five and one-half inches, six inches, and even wider for some draft horses. Bits wider than five inches may have to be special ordered, and the availability of styles and mouthpiece designs may be limited in commercial production bits. Sometimes it is necessary to have a bit custom built by a bit maker to achieve a desired style and size. The same is true to some degree with the narrow bits, although there is usually a better selection in snaffle bits.

What the Bit is Made of

Bits can be constructed of many types of materials. They are often composed of some type of metal, although bits made of other materials can also be found. A typical metal used in the manufacturing of bits today is stainless steel. This metal is a popular choice due to the fact that it does not rust and, therefore, has a more appealing appearance to consumers for show purposes and everyday use. However, a rust covered bit does not necessarily indicate decreased quality. Sweet iron is a metal often used by bit makers when designing quality bits. Sweet iron rusts very easily and, therefore, does not maintain a shiny appearance for long; but it is very palatable to horses and, thus, is often a popular choice among experienced horsemen. Sometimes bits are composed of a sweet iron mouthpiece with stainless steel cheek pieces. This allows the bit to maintain its new appearance outside the horse's mouth while the part that is in the mouth is made of the more palatable metal.

Copper is another metal that can be found in bits and is often included in bit making because it causes the horse to salivate. Bits are not made entirely of copper, but often the mouthpiece will be made of copper or will have some type of copper roller or inlay. For horses that tend to have less saliva production and a drier mouth, this increase in saliva allows the bit to slide or rotate more easily in the horse's mouth. The amount of copper on a bit can range from very small inlays against the tongue of the horse to fairly large rollers or portions of the bit being made of copper. Another metal that is sometimes seen in bit making is aluminum. Aluminum bits were a trend started many years ago and still exist today, primarily in lower-quality bits. Aluminum is not a particularly desirable metal for bit construction due to its light weight and unpalatable taste. Also, because aluminum oxidizes readily, these bits may break unexpectedly. The lightness of these bits causes them to move too much in the horse's mouth as well as causing the horse to have a diminished response to rein cues. The bits in effect "bounce" around in the horse's mouth without having much effect. There are some aluminum bits made today that are quality bits, but they are generally made with shanks of a higher grade aluminum alloy and a mouthpiece made of some other material. Other materials that might be seen in bit construction are synthetics or plastic ("happy mouth" bits) and rubber. Both of these materials are designed to be "soft" bits and lessen the harshness of rein cues. These can be effective on some horses but should be used with care. Often these bits are too mild and teach horses to pull against pressure rather than yield to it if used routinely. This is particularly true of rubber bits, which are often also very large in diameter. This large diameter is often very troublesome for horses since it is typically used on young horses whose mouths are not large enough to carry it comfortably. Additionally, the use of rubber often promotes the habit of chewing on the bit.

Types of Mouthpieces

After determining whether to use a snaffle or a curb and deciding on the appropriate width and material, the next step is to determine the style of mouthpiece needed. Selection of the mouthpiece is where much of the confusion surrounding bits begins. This is due in part to the vast number of mouthpieces available and also to the lack of understanding of the conformation of the mouth and how the various mouthpieces fit and function in the mouth. It is possible to have a mouthpiece that is mild in its action and pressure (a soft bit) or a mouthpiece that is severe (a harsh or hard bit). As previously stated, both a snaffle bit and curb bit may have either a broken or solid mouthpiece. How well a horse responds to a certain type of mouthpiece is dependent on each horse's mouth conformation and preference. The more broken (jointed) the mouthpiece is, the more it will conform to the horse's mouth. A mouthpiece that is broken in several places will conform around the tongue more than a mouthpiece that is solid or only broken in one place. A mouthpiece that is solid will place more pressure across and over the tongue, while one that is broken in one place will break in the middle when the reins are pulled and take some pressure off the center of the tongue, thereby placing it more on the bars of the mouth and the sides of the lips. A bit that is broken in multiple places will conform around the tongue and place pressure more equally over the tongue, bars, and lips. Some horses with shallow palates are more comfortable with bits that conform around their mouth. Mouthpieces broken in only one place might come into contact with their palate as the rider pulls back on the reins, and the mouthpiece closes at the break. Each horse responds differently to different types of bit pressure; some horses respond better in bits that are solid, while some respond better to bits that are broken. The rider must experiment to determine which bit a particular horse performs better in.

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Types of Snaffles

When choosing a snaffle bit, the next thing that must be considered is the design of the rings. Snaffle bits typically are available in O-ring, D-ring, eggbutt, and full-cheek configurations. The rings can vary in size from two and one-half inches in diameter to four inches, with three inches being fairly standard. O-ring and eggbutt bits are probably the most popular styles. Full-cheek bits are also popular but should always be

Figure 2. Examples of different mouthpieces found in a snaffle bit. The top example is a bit that is broken in more than one location and, therefore, shapes around the tongue, distributing pressure more equally over the tongue and bars. The example second from the top shows a bit that is broken in one place, thereby placing pressure more on the bars of the mouth. Third from the top shows a bit with a mouthpiece that is not broken and, therefore, places pressure more across the tongue and less on the bars. The bottom example shows a barrel-hinged mouthpiece that is a limited range-of–motion, three-piece mouthpiece.

used with bit keepers for safety reasons; a full cheek that is not properly secured with a bit keeper can easily get snagged on surrounding items or injure nearby horses and riders. Full-cheek bits and very large, ringed bits are used in some training situations to apply pressure to the side of the horse's face when being asked to yield laterally, thereby encouraging the horse to yield better and also to prevent the bit from being pulled through the mouth.

Figure 3. Examples of styles of snaffles. From top to bottom: O-ring or loose ring, eggbutt, D-ring, and full cheek with bit keepers.

How Severe is the Bit?

When using a snaffle bit, the main factors that affect the severity of the bit are diameter and texture of the mouthpiece. A larger diameter mouthpiece results in the pressure applied to the tongue and bars being diffused over a larger surface area. This makes these bits less severe than a bit with a smaller diameter mouthpiece that concentrates the pressure into a smaller area. Mouthpieces can be either smooth or textured in some fashion. A common texturing technique is to make a bit with twists in the mouthpiece. The twists can be slow and rather smooth or fine and sharp. The thinner and sharper the twist, whether it be a corkscrew type or twisted wire, the more severe the mouthpiece is since pressure again will be concentrated in those areas. There are many gradations between the two extremes of soft and harsh bits, and a moderate bit is probably the best choice for most people and horses. Harsher bits should be reserved for people who know how and when to use them and have the patience and dexterity to use them properly. Soft bits can also be problematic in that it is easy to teach a horse to pull against and evade them. This is certainly not desirable, though many people make this mistake in trying to be kind to their horse. A second problem associated with soft bits is that they are generally large in diameter, and many young horses may not have enough room in their mouth to comfortably carry them, as discussed earlier with rubber bits. This can lead to annoying habits such as excessive mouthing of the bit.

Figure 4. Examples of mouthpieces of different severity. From top to bottom: large diameter mouthpiece (less severe), mouthpiece with smaller diameter (moderate severity), and a mouthpiece with a small diameter and twists (more severe).

Selecting the Curb Bit

Selecting a curb bit is similar to selecting a snaffle bit. However, in addition to selecting the type and size of the mouthpiece, it is important to determine the appropriate shank. The shank can be either a solid cheek or a shank that can swivel (swivel cheek). It is also critical to determine what length and shape of shank is desired. Shanks are available in several styles. They may be straight, have a gentle sweep (C-bit), an acute sweep (grazing bit), or a variety of patterns (S-shank, 7-shank, cavalry shank). The length of shank is a determinant of the severity of the bit. The average shank length is six to seven inches but may vary from approximately four inches to eight-plus inches. It is important to understand certain principles about leverage bits. A straight shank, in comparison to a curved shank, is quicker acting. A longer shank produces more leverage than a shorter shank but is slower acting than a shorter shank. The ratio of the amount of shank above the mouthpiece to the amount of shank below the mouthpiece also helps to determine the bit severity; the longer the shank is below the mouthpiece in comparison to the length of shank above the mouthpiece, the more leverage the bit will have. Bits that have broken mouthpieces and/or swivel cheeks are slower acting and provide the horse with what essentially amounts to a preparatory signal.

Figure 5. The length of shank helps determine the severity of the bit. The bit on the right has a longer shank and, therefore, more leverage as compared to the bit on the left. Additionally, the ratio of the length of the shank below the mouthpiece compared to the length above (purchase length) for the bit on the right is greater. This also increases the leverage factor.

Another aspect to consider in the selection of curb bits is the port. A port is simply an area in the center of the mouthpiece that deviates from a straight line and, therefore, is raised off of the tongue as the bit is rotated by rein pressure. It can be in the shape of a half-square, a half-moon, or a triangle. The function of the port is to provide tongue relief; as the rider pulls back on the reins, the horse's tongue moves inside the port thereby placing more pressure on the bars of the mouth and less on the tongue. Some horses prefer this type of bit and respond well to it while others may not. A port does not come into contact with the roof of the horse's mouth until it reaches a certain size (ports greater than approximately two inches may come into contact with the roof of the mouth). This is, of course, dependent upon how tight the curb strap is adjusted. A high port is found in correction bits and cathedral bits and should only be used on highly trained horses and by riders that have the knowledge to use them effectively and correctly. The function of a high port is to bump the roof of the horse's mouth causing the horse to respond by lowering its head and flexing at the poll with minimal pressure applied to the reins. This is a learned response and should only be used on "finished" horses that have already learned to yield readily to rein pressure.

Figure 6. Examples of shank types. The bit on the right has a shank that swivels whereas the bit on the left does not (fixed cheek).

Figure 7. Differing styles of shanks on curb bits. Note that the bottom right bit has shanks that rotate independently but have a controlled range of motion due to a built-in stop.

Figure 8. Ports of varying shapes and sizes. The bottom center and right bits have ports high enough to come in contact with the horse's palate. The upper right bit also has a port that could contact the palate of a mouth because of the combination of height and width of the port. This bit would produce almost no tongue pressure.

Other Types of Bits

Although the above text outlines different factors to consider when selecting a bit, it is important to understand that there are always exceptions and modifiers to most rules. Not every bit fits neatly into a category, especially when trying to classify everything as either a snaffle or traditional curb. In addition, it is not possible to classify bits as either English bits or Western bits. There are examples such as the kimberwick, pelham, gag, and elevator bits that should be considered combination bits, in that their action is not exactly that of a snaffle or true curb bit. There is also a very large group of bits used primarily by the speed events and rodeo disciplines that cannot be neatly classified. These bits are also a form of combination bit. Many of these bits use a modified gag action, and many also function like a mechanical hackamore. Bits with a gag action typically allow the mouthpiece to slide upward on the cheek pieces or rings when the rider pulls on a rein. These are used in many disciplines that require turning maneuvers since the rider can essentially pick up one side of the bit by pulling on that rein. These bits and mechanical hackamores continue to gain acceptance in the jumper ring as well as with many of the gaited horse communities.

Conclusion

Regardless of the bit selected, the rider's hands are the most important factor in communicating with the horse and influencing the effectiveness and severity of a bit. Correct use of hands is critical in determining the performance of a bit. In most instances, the problems perceived as resulting from not having the correct bit are in reality training problems. There are many instances when using the appropriate bit can enhance the training process. And, vice versa, the use of an inappropriate bit may produce undesired responses, such as resistance to pressure, head shaking, excessive mouthing of the bit, excessive reaction to the bit (such as rearing), or overflexing at the poll. It is important to find a bit that works well for both horse and rider. Horse and rider experience level is extremely important in determining bit selection. Inexperienced riders or inexperienced horses should be equipped with softer, less severe bits. Inexperienced riders lack the hand control to use more severe bits effectively without damaging the horse's mouth. Inexperienced horses often have not learned the desired response to bit cues, and, therefore, severe bits might confuse or overwhelm the horse. It is important to experiment with bit selection to determine which bit works best for a particular horse and rider combination.