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# NUTRITION

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## Horse management

Although horse people as a rule try to feed well, a lack of basic understanding often results in an improper diet for the young or growing horse.

Most novice horse owners and even many experienced producers do not appreciate and understand the importance of proper diets for growing horses.

## Feeding facts

Horses should be fed as individuals. There are some who are what we call 'hard keepers' and others 'easy keepers'. Adjustments in feed intake to compensate for this variation in digestive and metabolic systems should occur.

Horses have relatively small stomachs. Because of this, they should graze or eat a small amount at a time, but should do so on a rather continual basis throughout the day. If you watch horses in a pasture, they will graze for a while, then stop and rest, graze for a while etc. Because of this fact, if at all possible, horses should have access to feed throughout the day.

Horses are best fed on ground level. This allows for a more natural way of eating and allows any dust or mold ingested with the food to be sloughed out through the respiratory mucous.

Hay alone is not sufficient to meet the nutritional and energy demands of a young growing horse. Young growing horses cannot be fed the same as mature horses. Their growing bodies need extra protein and a correct balance of various minerals such as calcium and phosphorus.

Horses do not do well on moldy or dusty feed. Horses are very different from cattle in that they will suffer if they ingest mold and dust over a prolonged period of time. If hay is questionable, smell it to determine whether it has a good clean smell, or whether it is dusty or moldy. Do not feed moldy hay to horses!

A regular worming schedule for young horses is also an important part of good nutrition. Without worming, young horses lose the ability to maintain a healthy system in order to utilize the nutrients properly.

It is essential that horses have adequate supply of water. A horse's body has a water content of approximately 72% of the total weight. Young growing horses need even more water than older mature horses. Lack of water can lead to digestive disturbances such as colic and decrease the absorption of nutrients. If a horse is being fed dry matter (hay) instead of eating grass from a pasture, the need for water is even more important. If the weather is hotter, horses also need more water, just as horses that are working need more.

## Feeding mature horses

Feeding adult horses that have finished growing is different than when feeding a growing horse. The energy requirements of a mature horse is quite low and can be met by feeding a good quality forage (hay or pasture).

The only supplemental feed required will probably be salt and a balanced mineral supplement provided free choice.

## Feeding the foal

### Nursing foals

A foal that is still nursing from its mother should be supplemented in addition to receiving its mother's milk. By the time the foal reaches six weeks of age, the milk has lost most of its nutritional benefit. Most foals should begin nibbling grass/hay and grain along with its mother as early as 3 days old. If you know of a foal that is not nibbling on these foodstuffs after a week or two it is important that you 'teach' it to eat hay, grass or grain. It is important to the well being of a foal, as the mother's milk will not supply it with all the necessary vitamins, minerals and protein requirements that a growing foal will need.

### Foal ration

The best plan is to give the foal access to a foal ration that contains all the essential vitamins and minerals in a base with a greater percentage of protein than most hay would contain. Growing foals need more than 15 % protein in their feed to supply their bodies with the essential elements to grow properly.

There are many types of foal ration on the market today. The most palatable are the pelleted form. They range from 16% to 20% protein. If you are feeding the foal alfalfa hay (which is already high in protein) you would choose a foal ration with 16% protein. If you were feeding the foal grass hay (which is low in protein), you would choose a foal ration with 20% protein.

### Creep feeding

A 'creep feed' is often given to foals soon after birth to ensure proper nutrition is maintained. It will allow the foal to eat the ration without interference from its mother. Foals that have been provided with a creep feed for a period of several weeks prior to weaning generally eat better after weaning and may be less susceptible to the stress of weaning.

### How do you creep feed a foal?

While the foal is at the mother's side you need to organize a feeder (called a creep feeder) that the foal has access to but the mother doesn't. The easiest way is to section off a corner of a corral, paddock or pasture by a safe means (a long rail) so that the foal can get under and go to the feeder but the mother cannot.

The creep feeder should be filled with fresh ration daily so that it does not get moldy or stale. Try to determine how much the foal eats through the day so that you can fill it accordingly.

### **Won't my foal eat too much?**

If you always had foal ration available for your foal by using a creep feeder, the foal will not eat too much. A foal that knows that the feed is always available will tend not to 'gorge' on the ration when it is placed out for it. It knows that it will never be short of food so it does not have a tendency to eat too much at once. Generally speaking, foals that are on a continual creep ration will eat more only when their bodies need extra nutrients during a growth spurt. Then there will be times when they do not seem to eat very much. Their bodies are satisfied by the grass, hay and mother's milk.

### **Won't it harm a foal or young horse to feed it too much if it is growing quickly?**

Too much, yes, but to stop feeding it what it is accustomed to eating or to cut back in its ration would be risking the foal being short of the proper balance of minerals, nutrients and protein needed for the proper bone and body growth that it is going through.

If you keep the foal or young horse on a balanced diet where it gets a steady amount of feed, rather than increasing and decreasing the amount as you try to judge its growth rate, you will find that the foal or young horse will grow to its potential in the proper amount of time.

### **Feeding a balanced diet**

The most critical part in feeding the young growing horse properly is to feed a balanced diet.

A balanced diet is one in which all the nutrients are supplied in adequate amounts. Just as important, they are supplied in correct amounts relative to each other.

It is believed that imbalances in nutrients may be the causative factor in a variety of developmental bone diseases in young horses.

Each year numerous foals are mismanaged to the extent that they never reach their full potential in terms of size and performance.

When a horse receives too much of a nutrient as well as too little there will be poor absorption or utilization of nutrients resulting in a number of problems if it goes on for a prolonged period of time.

Major foal feeding problems include contracted tendons, epiphysitis and deficiencies.

Horses that have been fed balanced diets since birth will tend to have a more stable metabolism and are able to digest and utilize nutrients more readily.

Full growth potential and performance will be an important result of good feed management.

## Minerals

Minerals are involved in a number of functions in the body. A horse will obtain most the necessary minerals from pasture, roughage and grain. The mineral content of feeds and the availability of minerals vary with

- soil mineral concentrations,
- plant species
- stage of maturity, and
- conditions of harvesting.

Those variations should be considered when deciding on how much or whether your horse needs a mineral supplement.

## Calcium

Calcium makes up about 35 percent of bone structure and is involved in many body functions of the horse. There are a number of factors affecting whether calcium is properly absorbed by the horse. Inadequate calcium taken in by the foal can lead to rickets, a disease characterized by enlarged joints and crooked long bones.

## Calcium Phosphorus Ratio

The correct calcium phosphorus ratio is very important for the well being of the growing horse. All feed supplements including minerals will give the percentage of calcium and phosphorus. Ratios of less than 1:1 (less calcium than phosphorus) may be detrimental to the absorption of calcium. Even if calcium requirements are met, excessive phosphorus intake will cause skeletal malformations. Ratios of calcium to phosphorus as high as 6:1 in diets for growing horses may not be detrimental if phosphorus intake is adequate. Alfalfa hay is generally rich in calcium and could be supplemented by a grain such as oats which is high in phosphorus. This would ensure a proper balance between the two minerals.

## Salt

All horse should have free access to salt. The sodium concentration of natural feeds such as grass or hay is often lower than 0.1 percent. Salt in the form of sodium chloride is often added to supplements. You can place free choice iodized salt blocks with horses as well.

## Signs of Deficiency

- decreased skin turgor
- tendency for horses to lick objects
- slowed rate of eating
- decreased water intake

## Copper

Copper is essential for several enzymes responsible for the formation of connective tissues in young growing horses, among other important things. It has been reported in recent studies that lack of copper in the diet is associated to the development of bone diseases such as osteochondrosis (OCD). Feed supplements usually contain a certain amount of this trace mineral. This is one good reason to feed a mineral supplement to young growing horses.

## Vitamins

Vitamin requirements, like those of other nutrients are affected by age, stage of production and the variety of stresses such as infections and intense exercise that horses may go through.

The need for supplemental vitamins depends on the type and quality of the diet, and the efficiency of the horse's system to absorb vitamins from its diet.

Horses grazing on high quality pastures are likely to need little to no vitamin supplementation because forages are a rich source for most fat and water soluble vitamins.

Most feed rations contain added vitamins as well as minerals. It would not be detrimental to the well being of a young growing horse to supplement its diet with added minerals and vitamins.

## Roughage

All diets for horses should contain adequate amounts of roughage. This roughage comes from forages.

Forages are those types of feeds that come from plants in the form of pasture or hay, most commonly.

## Feeding quality of different forage used by horses varies widely due to the

- type of plant
- soil fertility
- climatic effects
- stage of maturity at time of harvest

## Pasture feeding young horses

There are two types of pasture:

- Grasses
- Legumes

Pasture grasses are generally lower in protein, vitamins and minerals than legumes such as alfalfa.

Pasture mixtures of grasses and legumes are excellent and provide a number of advantages over grass alone, including superior nutrient value and longer growing seasons.

## Feeding hay to young horses

Depending of the type of hay you feed, you may need to supplement the diet with grain and minerals.

Alfalfa hay is generally highest in quality, being less stemmy and higher in protein and calcium content. Because of the imbalance in the calcium phosphorus ratio, alfalfa hay should not be fed alone to young growing horses. It should be fed carefully with the addition of grains or supplements such as oats or wheat bran that are higher in phosphorus.

Grass hay is lower in protein and should be supplemented by a ration that contains more protein with added vitamins and minerals.

You can vary the amount of hay you feed in relation to the amount of grain in order to meet all of the needs of the horse.

## Nutritional analysis of feed

Most feed, such as hay, is relatively easy to determine whether it contains enough nutrients to support a growing horse's system and body. It smells fresh is green in color and contains no dust or mold.

However, sometimes the hay being fed is questionable. It is not as green as it could be. The horses being fed are not gaining or maintaining their weight. Sometimes it is necessary to know the exact protein content of the hay in order to balance it with grains and supplements.

Rather than guess at the nutritional content of the hay or grain that you are feeding your young horse, you can send a sample of it away to be analyzed.

Only then will you accurately be able to supplement your horse according to the actual nutritional content of your feed.

Most large feed manufacturing plants will lend or rent you a 'probe' to gather samples from your hay. This gives you a more accurate reading than just pulling out part of one bale.

Once the sample is gathered, the feed company will send it to a lab where it is analyzed. The results will be printed and given to you for use in your feed program.

Understanding the importance of feeding young growing horses a balanced diet will ensure that your young horse will grow to its potential.

The future well-being of your horse depends on your knowledge of good feed management. Take it seriously!

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## REFERENCES AND RESOURCES

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4-H Horsemanship Manual

Bill Dorrance - True Horsemanship Through Feel

Pat Parelli - Naturla Horsemanship Video

Tom Dorrance - True Unity

Bryan Neubert - Video

Craig Cameron - Video

Mike Kevil - Starting Colts

Imprint Training - Robert Miller DVM

Horse Whispering Demystified - Video by Chris Irwin

See the 4-H web site at <http://www.4h.ab.ca> for an up-to-date listing of Internet sites devoted to the horse.

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## LEVEL ONE: UNMOUNTED ABILITIES

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### Assessment Tools

- Explain briefly what is meant by the “herd” instinct.
- Explain how to approach a young horse in an enclosed area.
- Explain what is meant by “flight” instinct.
- Demonstrate how to move a young horse around using pressure and release method.
- List five safety rules when working with a weanling or young horse.
- Describe a proper working environment for a young horse.
- Name three goals that you have for your project year.
- Explain what “quit while you are ahead” means when training a horse.
- Explain how a horse would show a handler respect.
- Explain how a handler would show a horse respect.
- What is meant by ground work?

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## LEVEL ONE: **GROUND WORK ABILITIES**

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### **Assessment Tools**

Safely approach and place a halter on your project horse.

- Demonstrate how to “cradle” a weanling (if your project horse is one).
- Demonstrate how to move the horse’s hindquarters around using the pressure and release method with the hand.
- Demonstrate how to back your horse.
- Demonstrate that your project horse is halter broke by leading it in both directions and halting.
- Brush and touch the entire body of your project horse.
- Demonstrate how to safely tie your horse.

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## LEVEL TWO: UNMOUNTED ABILITIES

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### Assessment Tools

- Explain the difference between short term and long-term goals.
- List four long term goals for your project horse.
- Explain the four areas of training that should be realized when working with horses.
- What pieces of equipment are necessary for halter breaking.
- Explain three safety rules related to the area you work a young horse in.
- Explain why you might use an inner tube to tie a horse?
- How old should a horse be to have the feet picked up?
- Explain how to teach a horse to pick up a front or back foot.
- What are two examples of ground manners you have established from your horse.
- Explain why you might lunge a horse.

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## LEVEL 2: **GROUND WORK ABILITIES**

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- Demonstrate your project horse moving away from pressure by moving the hindquarter, then the forehand in both directions.
  
- Lead your horse by the halter in both directions, halt, back up five steps and stand quietly for 1 to 2 minutes.
  
- Safely pick up and clean each of your project horse's feet.
  
- Demonstrate how you would introduce your project horse to its first lunge lesson.

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## LEVEL 3: UNMOUNTED ABILITIES

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- Explain what "sacking out" means.
- Explain two methods of sacking a horse.
- List the equipment necessary to lunge a horse.
- Explain why you need an enclosed area to lunge a horse.
- Explain what the "goal" of lungeing will be.
- Explain how the position of the handler and the position of the whip used for lungeing has an affect on the horse's reaction during lungeing.
- Explain what to do if the horse wants to come toward you on the lunge circle.
- Explain how to use voice commands during lungeing.

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## LEVEL 3: GROUND WORK ABILITIES

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- Demonstrate your horse's ability to remain calm and accept being sacked out by various items such as a blanket or plastic bag.
- Demonstrate proper handling of the lunge line and whip while lungeing your project horse.
- Demonstrate proper body position while lungeing your project horse.
- Demonstrate use of voice commands for walk, trot and halt while lungeing.
- Lunge your project horse in both directions at a walk and trot.
- Halt your project horse while lungeing.

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## LEVEL 4: UNMOUNTED ABILITIES

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- Explain what "girthing" your horse means.
- Describe the method used to saddle your horse for the first time.
- Explain why you should use a back cinch on a western saddle.
- Describe how to successfully bridle the horse for the first time.
- Describe the equipment needed to ground drive your horse.
- Explain why you might ground drive a horse before mounting it for the first time.
- What are three safety precautions to use during ground driving?

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## LEVEL 4: GROUND WORK ABILITIES

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- Demonstrate proper saddling of your horse.
- Demonstrate proper bridling of your horse.
- Demonstrate the correct preparation and equipment use for ground driving a horse.
- Ground drive your horse, demonstrating its abilities to turn in both directions and halt.

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## LEVEL 5: UNMOUNTED ABILITIES

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- Explain what your horse should be doing before you attempt to mount it for the first time.
- Describe the method used to mount the horse for the first time.
- Why is moving forward an important part of the first ride.
- Describe how much rein pressure you use when riding your horse for the first few times.
- Explain the aids for moving the horse's hindquarters.
- Explain the aids for halting a horse.
- Explain the aids necessary to turn a green horse.
- Explain how to use side reins.

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## LEVEL 5: MOUNTED ABILITIES

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- Demonstrate proper fit of saddle and bridle before mounting.
- Demonstrate your horse's ability to stand quietly while being mounted.
- Demonstrate riding your horse at a walk and trot.
- Demonstrate turning your horse in both directions.
- Halt your horse and stand quietly for 1 minute.
- Dismount your horse while it stands still.

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## LEVEL 6: MOUNTED ABILITIES

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- Demonstrate how to move your horse away from leg pressure in both directions (turn on forehand).
- Demonstrate how to move your horse's forehand around the haunches in both directions (only a few steps is necessary).
- Demonstrate your horse's ability to walk, jog and lope (on the correct lead) in both directions.
- Back your horse five steps.
- Ride your horse out of an enclosed area on the trail.

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## LEVEL 7: MOUNTED ABILITIES

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- Complete the mounted abilities from Level 3 of the Horsemanship Levels 1 - 3.

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# 4-H YOUNG HORSE PROJECT **EVALUATION**

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## **Your input is a valuable asset to the 4-H program!**

As you go through the project year, write your comments and suggestions about the project on this form. When you complete your project, mail this form to us. We want to hear from you!

## **Young Horse Project Evaluation**

4-H Branch  
Alberta Agriculture, Food and Rural Development  
7000 113 Street NW RM 200  
EDMONTON AB T6H 5T6

Evaluation date \_\_\_\_\_

## **Please tell us**

**Which techniques and skills did you learn and use for this project?**

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**What did you like best about completing this project?**

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**Are you pleased with your project?** \_\_\_\_\_ Yes \_\_\_\_\_ No

**Is there anything you would change if you were to do the project again?**

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**What are you going to do with your project?**

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