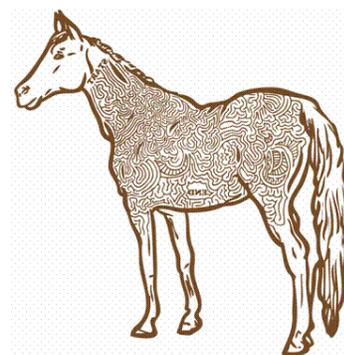




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How Can I Get my Horse to Gain Weight?

Answer: Increase the energy density of the diet.

I'd like to answer this question by using a request from one of our Web Site Readers as an example: Steve wants to know the best way to put 150 lbs of body weight on his moderately active gelding. Currently the daily feeding program includes 3 lbs of pellets, 4 lbs of oats, 2 flakes of hay (12 lbs estimated) and 4 hours of open grazing. This program maintains present body weight.

I'm going to estimate that Steve's horse weighs 1000 lbs and is eating 2½ % of its body weight in air-dry feed (90 % dry matter) or 25 lbs/day, which is at the high end of consumption for moderate work. To get a pound of gain requires 8.9 megacalories (Mcal) of energy. Per pound, oats contain about 1.3 Mcal, while vegetable oil contains 4.1 Mcal. If we use oats, then you will need to feed an additional 7 lbs of oats/day ($8.9/1.3=6.9$) to put on 1 lb of gain. We'll get that same lb of gain with just over 2 lbs of oil ($8.0/4.1=2.2$). As you can see, it's going to take a lot of time and a lot of grain to get that much weight gain. You will also need to replace some forage to make room for the grain. So let's take a look at the forages.

My estimate is that Steve's hay and pasture is providing respectively, about ½ and ¼ of the total diet. The quality of forages can have a large effect on energy intake. It is not uncommon for the energy content of hay to vary up to 20 %, while pasture grass can have up to 40% variation in digestible energy from the early growth stage to full maturity (1.1 Mcal vs 0.7 Mcal/air dry lb). Since forages make up ¾ of the diet or 19 lbs/day, if we improve the quality and raise forage energy content by +0.2 Mcal/lb, we'll get 40 % of our pound of gain without feeding even 1 more ounce of grain!!

The question now is: How can we know if our forages are high or low energy? Here's a few basics:

- a) Stem:Leaf Ratio- Leaves are always more digestible than stems so more leaves equals more energy.
- b) Flowers- When grasses & legumes (alfalfa, clovers) bloom, digestibility is decreased because the plant strengthens the stems and makes them “woody” to support the seed heads.

c) Shear Strength or the “Twist-Test”- Gather a handful of hay or pasture and briefly shake it so that you have a tight bunch of stems (about a dozen). Grasp the stem bunch with both hands close together. Twist your fists in opposite directions and feel how hard or easy it is to twist the stem bunch in half. The easier it is to twist the stems apart, the more digestible the forage. The “twist test” works well on dry alfalfa hay and green grass, but may be difficult with moist alfalfa and grass or oat hays. You can test these forages by keeping the stem bunch tight and slowly cutting through with scissors. The harder it is to cut, the lower the digestibility. What you are testing in both cases is called shear strength which is directly related to the digestible energy content of forages. It takes a while to get the “feel” for both the twist-test & scissors method. One way to practice is to test the same area of pasture as it goes through its stages from vegetative (nearly all leaves and thin stems) to bloom to maturity (dry seeds).

In conclusion, there are two ways to get an animal to gain weight: give them more feed or give the same amount of feed with a higher energy density. We can get higher energy density by feeding a higher ratio of concentrates to forages, or we can feed a higher quality, more digestible forage. Last but never least: always check when increasing the energy density of a diet to make sure to increase the other nutrients like protein, vitamins and minerals to keep the diet balanced.