

If it is the former, we will select some nitrogenous roughage as alfalfa, clover, or cow pea hay, and for grain, oil meal, linseed meal, ground meal, or other highly nitrogenous feeds. The selection of these feeds and the grouping of them to make what is known as a balanced ration has been agitated through our institutes and the agricultural press, and are now familiar to all leading stock breeders. For properly balancing our live stock rations, we cannot put too much emphasis on the value of alfalfa and clover as abundant sources of digestible nitrogenous nutrients.

PALATABILITY

The relish with which an animal eats its feed has much to do with the effect of that feed on the body. It regulates the amount eaten, and when properly assimilated the more the animal eats, the larger amount of product it turns out. By supplying an animal with food that it eats readily, it will help it to eat its other food better and in larger amounts. A palatable food stimulates the digestive juices and the supposed benefit of many of our stock foods rests in the palatability that they may impart to other foods. It is important to preserve this quality as far as possible in all feeds.

Hay should be so cured that the animals are anxious for it—yes, and so fragrant that they are ravenous for it. Greediness of appetite is a great factor in economical production of live stock products. Any feed that will so regulate the animal as to keep it in good health and condition will add much to the final results. Linseed meal, corn silage, and roots are all examples of feeds that are greatly relished by our live stock.

VARIETY

Variety is very closely related to palatability. It helps to keep the appetite keen and the animal healthy and vigorous. By having several feeds, one can supplement the other as one may be deficient in ash, and this deficiency made up by the other. Recent experiments show that ash plays a very important part in the nutrition of farm animals. It is also known that the digestible protein in one feed does not necessarily possess the same nutritive value as the digestible protein in another feed.

By feeding a variety, one will make up where the other falls down, and the feeder can feel reasonably sure that he is giving his animals sufficient nutrients, even though we do not, in our present knowledge, know the exact function of these nutrients.

Principles of Horse Training

Dr. F. C. Grenside, Guelph, Ont.

The old term of breaking, used synonymously with training and education of horses, is in a measure, objectionable, as it appears to indicate the exercise of too great a degree of force in the process of training. Although harsh measures may be necessary under some circumstances, the guiding principles should be rather a leading of the colt into compliance with our wills by artifice rather than by force.

Some trainers approach the task in an aggressive mood, prepared and expecting to use harsh measures, while others, and, we think the more successful ones, endeavor to accomplish their object by the exercise of strategy, only resorting to force when absolutely necessary.

DON'T LET IT DO WRONG

Another fundamental principle that should guide us in the training of a colt, is to never place the animal in a position to do wrong, for if he succeeds in acting in opposition to the will of his trainer he is apt to repeat the act, if an opportunity is afforded.

Let us take the example of a shy, nervous, high spirited horse, easily frightened, and inclined to turn around sharply, to shy badly, and rear or plunge, if restrained. It is courting disaster to subject such an animal to conditions calculated

to frighten him, until his mouth is made so you can not control him.

The young horse should also have the sharp edge taken off his spirits by sufficient work in a quiet place. Hitch him alongside of a tractable, well-trained horse to give him confidence, and assist in controlling him when he is first subjected to sights and sounds likely to disturb him. Every time he is hitched with such a horse his side should be changed, so as to teach him to go, carry his head straight, and get used to the pole on either side of him. Such treatment will soon get him ready for single hitching without delay.

KICKING AND HALTER PULLING

Never hitch a colt single without the use of a kicking strap, until he has a few weeks' experience, for if he once kicks successfully, he will not forget it. Do not tie up a colt in a place so he



Money Makers on a Northumberland County Farm

Breeding and raising draft horses is an important side line of the farm of E. Budd, Northumberland Co., Ont., whose prize winning farm was described in a recent issue of Farm and Dairy. Horses such as those shown in the illustration bring \$600 or more a pair.

—Photo by an editor of Farm and Dairy.

can pull back and become a halter puller. Tie him with a strong halter and tie rope and with something to back against so he can't pull back.

It is much more trouble, and not nearly so satisfactory to have to try to correct faults than it is to avoid their development. The exercise of force is sometimes valuable in nervous, headstrong horses, but never try force unless you are sure of being able to attain your ends. For instance, some horses are very nervous about being saddled, and could easily be taught to be buckers. This tendency is not vice, it is nervousness.

By putting a twitch on for 10 minutes while saddling and putting a man on the back and leading about with the twitch, the nervousness can be overcome, while at the same time the horses get used to the pressure on the back. I have seen this plan save a lot of trouble and bad habits are not learned.

Another important point in training is giving steady work. Leaving an interval of two or three days between lessons is a very bad plan, as the sharp edge has to be kept off a horse's spirits to keep him teachable. A colt never learns anything but bad habits when he is suffering from exuberance of spirits. Give him a lesson in some way every day, and two lessons a day are better than one. It is not necessary to jade a colt but keep him steadily at it. Two lessons of half an hour are better than one of an hour's duration.—Extract from an address.

There is an easy possibility of doubling our output of milk if cattle are properly fed. Were we to double the output of milk in Eastern Ontario, the dairy industry would be put upon a business basis. We would then derive more satisfaction from the business because we would be making more money and be doing our work on business principles.—D. Derbyshire, Leeds Co., Ont.

Why I Spread Manure in Winter

C. Smith, Wellington Co., Ont.

There are so many good reasons why manure should be hauled to the field daily and spread that it is always a wonder to me that more of my neighbors do not adopt the system which I have practised for years so successfully. I was visiting a farmer recently in an adjoining county who was famed for getting his work done promptly and with a minimum of help. With three horses and one man besides himself last spring he put in 25 acres of grain and 25 acres of corn.

"How do you do it?" I asked.

"By distributing the work over the whole year and not trying to do it all in a few days in the spring," was his answer.

Just then we happened to be going around the corner of the barn, and I saw the litter carrier run out of the stable and dump itself directly into the manure spreader. Some time later the hired man was seen hitching the team to the spreader and starting off for the field.

"You see," said my neighbor, "that when spring opens up, the manure will not only be in the field, but it will be spread as well, and we will be ready to start right ahead plowing the ground for corn instead of making a great big rush to get two or three hundred loads of manure drawn out to the field and spread in a very limited time."

I have found since I adopted the system of hauling out manure daily that I can get my spring work done one week ahead of what I previously did. At the same time, the fertility of the manure is preserved when applied directly to the land. Any of the soluble ingredients which are washed out into the soil are there ready to assist the crop growth next spring.

The fermentation in the manure heap, which I believe causes a great deal of loss before the manure ever reaches the field at all, is avoided. Institute lecturers have told us that this fermentation is due to the life activities of small plants called bacteria, and that these plants cannot work except in warm temperatures. When manure is spread directly it is frozen, and there being no chance to heat, the bacteria are not able to work.

REASONS FOR HAULING DIRECT

Hauling out the manure is good exercise for the horses. To be kept in the best condition horses should get a little exercise every day of the year, and as the manure on our farm is hauled out every day but Sunday, this work answers requirements nicely.

I have been told that this system cannot be followed on hilly farms as too much of the fertilizing ingredients would be washed away. Personally I do not believe that they would be washed very far, but had I a hilly farm, I would at least haul the manure out and pile it where it would be convenient next spring.

How are we to know that our land requires draining? Comparatively flat lands or basins upon which the water from the surrounding higher lands collects and the water has to remain there until removed by evaporation should be drained. Prolonged dampness in plowed land, especially in the spring, large cracks in the soil in dry weather, by a curling of the corn leaf, a wiry appearance in the growth of grass, the formation of a mossy substance on the surface of the ground, the growth of weeds natural to low lands, the spindly growth of grain crops, with a lightness of tinge in their color; these are all indications that underdraining is necessary.—Jno. Fixter, Macdonald College, Que.

The dearest food you can buy for chickens is screenings. Often screenings contain 20 per cent of dirt.—Prof. W. R. Graham, O. A. C., Guelph, Ont.

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