

Balanced Rations--Modern Concept

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A great deal of feed is harvested and stored under difficult conditions. Consequently, it is moldy and otherwise spoiled, perhaps from insects, or is eaten and fouled by rodents.

Still the comment of a wise observer is impressive, that more feed is wasted inside an animal than outside.

It seems like an overstatement but may be true. A few illustrations directly tend to support it.

An enormous amount of feed is fed to livestock in poorly balanced rations. They may be unbalanced not merely in protein, or the right kind of protein, but also in minerals and vitamins. Yes, even as to energy, there may be enough to eat, where the animal is fed for economic performance but not the amount that most nearly meets its productive potential.

Such potentials in the modern sense are further realized through the use of various feed additives, antibiotics, hormones, anthelmintics, and other health protectives.

Modern animal performance would astound old timers of years ago, as was brought out at the 50th Anniversary of the American Feed Manufacturers Association.

Where Dean W. A. Henry in his early editions of Feeds and Feeding cites pig feeding results of "Many American Stations", requiring 440 pounds feed for 100 pounds gain, this has now with modern rations been reduced to 300 pounds. Broilers have a feed efficiency of little more than 200 pounds per 100 pounds gain, and the prediction is that it may soon be much more efficient than that.

The protein factor in all cases is apt to be important. When we

at Wisconsin fattened a group of thin sows for the market on an 11% protein ration, it required 408 pounds feed to produce 100 pounds gain.

A similar group on a 14% protein ration needed only 346 pounds feed—a saving of 60 pounds feed for every 100 pounds gain. The slightly higher cost of the ration was amply repaid.

The University of Illinois years ago took over a herd of cows that had been fed unbalanced rations. When this was corrected, the cost of rations rose 15%, but the cows produced 50% more milk.

These examples are relatively mild contrasts in consideration of the many extreme ones the country over, but they all tend to support the statement that more feed is wasted inside than outside an animal.

Quality Forage And Trace Minerals

A far-reaching observation was made at the Ohio Experiment Station that the quality of roughage largely determines the need for feeding trace minerals.

This is of real importance to dairymen and stockmen since only about one-third of the hay put up throughout the country can be graded as good to excellent. Two-thirds is only fair or actually poor.

Weather conditions, late cutting and the kind of crop are primary causes of low-quality hay. We also know that silage and pasture are not always of top quality.

When the Ohio workers fed mature timothy hay with protein-balanced grain to comparable lots of steers, the trace mineral supplemented lots had a 33% increased rate of gain and a 15% increased feed efficiency over the unsupplemented lots.

As a hay crop matures and is cut at a late stage of growth, its trace mineral content may decline to half or less of what it was earlier. Loss of leaves is one explanation, because the leaves and not the stems carry the nutrients. Alfalfa leaves con-

tain 70% of the minerals and 90% of the vitamins of the entire plant.

Leafy hay, especially legume hay, with half its weight in leaves, is more apt to be richer in cobalt and other minerals than grass hay like timothy.

Alfalfa is a deep rooted hay crop, compared to timothy, thus may be expected to be richer in minerals. For example, taking copper as a representative trace mineral, alfalfa hay has 82 milligrams per pound but timothy only 2.0 milligrams.

But if the soil is deficient in essential minerals, the hay crop of whatever kind is bound to be deficient, whether in major minerals (like phosphorus) or minor (like copper, cobalt or others.)

As proof, we have the story of the discovery of cobalt as an essential mineral. Sheep in Australia grazing on lush pasture pined away because of lack of what later was found to be cobalt. When it was supplied, recovery was almost instant.

Therefore, considering the variability of forage of whatever kind, and as shown by the Ohio researchers, it pays to supply the likely missing minerals.

As good a way as any is to provide both mixed with the grain of the ration, and readily accessible on the side, the mixture of equal parts dicalcium phosphate and trace mineralized salt.

Coarse Sawdust

During the past month we have had plenty of time to try out different materials on the sidewalks in order to prevent slipping. There are many materials that may be used but most of them have some disadvantage. Salt is very commonly used but tracks into the house and is hard on turf and shrubs near the point of application. Sand is safe to use but is not welcome in the home when tracked in on footwear. I'd like to suggest the use of coarse sawdust to reduce this hazard. It is not harmful to lawns or plants and is cleaned up very readily when tracked into the home or buildings. It is reported that several kinds of nitrogen fertilizer may be used as abrasives, but engineers report them to be hard on the surface of the concrete when used repeatedly.

Use Salt Sparingly On Snowy Sidewalks

If you use salt to melt ice on sidewalks and driveways, use it sparingly, says Dr. Francis R. Gouin, Extension horticulturist at the University of Maryland.

Salt can be tracked into the house and will damage wood floors, linoleum or concrete. On the driveways it can also cause corrosion on automobiles.

But the damage to grass and ornamental shrubs near walks and driveways can be much more dramatic.

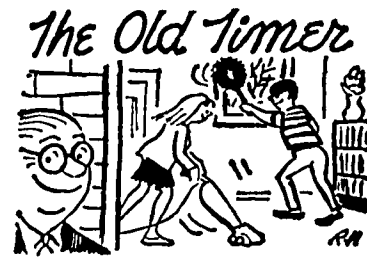
Continuous use of salt will raise the salt content of the soil around the plant roots. When the salt content reaches a certain point, it will retard the plant growth or may even kill it. Symptoms are similar to drought injury.

The plant begins to die back gradually at the ends of twigs

and the leaves turn brown; eventually the plant dies.

Heavy watering as soon as the symptoms appear will sometimes help prevent further injury, however, it will not solve the problem, Dr. Gouin adds.

Watering will only dilute the salt to the point where the plant can tolerate it, but if you add more salt next year, the effects may be fatal to the already-weakened plant.



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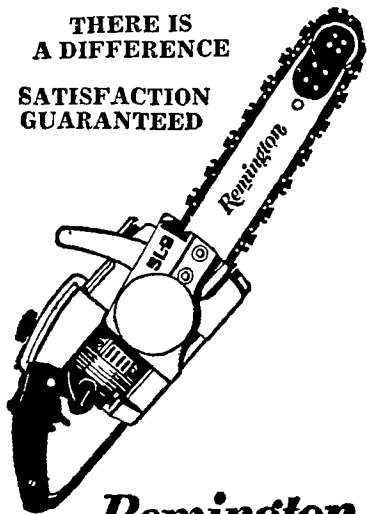
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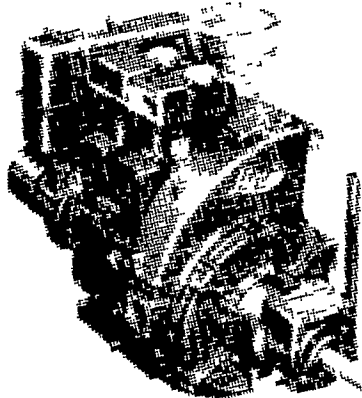
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