

What's A Fair Price to Pay for Protein?

By W. E. Dinussen¹

Where can I get the most protein for the money? This question is of considerable importance to the livestock man.

In the case of cattle and sheep the answer is rather simple. Cattle and sheep are blessed with a rumen, wherein are thousands of microorganisms that will convert a poor quality protein into a better quality protein. As these bacteria pass from the rumen into the intestinal tract they are digested and thus supply a higher quality protein that is utilized by the cow or sheep. These microorganisms, or bacteria, can use even a simple source of nitrogen such as urea, to a certain extent, and if energy feeds such as corn or other grains are present will manufacture protein from the nitrogen of urea. Of course, common sense must be used when urea is fed as part of the supplement because it is somewhat toxic in large amounts. Further, urea should never be fed to pigs, chickens, horses, or very young calves.

Now it is evident that in case of the ruminants, cattle and sheep, the amount of protein is of much greater importance than quality. Therefore, it is sound to purchase protein supplements on the basis of actual amounts of protein they contain, or as commonly referred to—Per Unit of Protein.

Take, for example, soybean oil meal. This protein supplement usually contains 44 per cent total or crude protein. Thus, soybean oil meal contains 880 pounds per ton (44×2000) and sells, let us say, at four cents a pound or \$80 per ton. However, the 880 pounds of protein provided actually cost 9.1 cents per pound. Linseed meal usually contains 34 per cent protein or 680 pounds of protein per ton. Assuming that it also sells for \$80 per ton the cost per unit (pound) of protein in linseed meal is 11.8 cents. Cottonseed meal usually contains 41 per cent and contains 820 pounds of protein per ton. If the cost is the same, \$80 per ton, the cost per pound of protein would be 9.8 cents.

When the grain that is being fed is cheaper per pound than the protein supplement, certainly it is unwise to pay an additional price for energy which is mixed in with the protein. Therefore a saving can be made by buying that supplement that has the least cost per unit of protein. There are other characteristics of protein supplements such as the "bloom" effect of linseed oil meal that may be considered by some as worth the additional price.

In the case of wintering animals that receive no grain the same holds true for roughages. Good alfalfa hay contains about 15 per cent protein. Therefore, three pounds of alfalfa would provide as much protein as one pound of a 44 per cent protein supplement.

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But because the protein from alfalfa isn't digested as well, or utilized quite as efficiently, it takes three and one-half to four pounds of alfalfa to provide as much protein as a pound of 44 per cent supplement.

This method is also adapted to the purchase of commercially mixed cattle and sheep supplements. Common sense tells us that in order to meet a fixed requirement for protein, it takes twice as much of a 20 per cent supplement to meet that requirement as of a 40 per cent supplement. The additional energy contained in the 20 per cent supplement is no more valuable than that in grain or roughage. So if it is protein you are buying, buy it on the basis of cost per unit of protein because it is almost always cheaper to buy energy as a grain or roughage.

Unfortunately the problem is not as simple for hogs or poultry. In their case, quality of protein may be as important as quantity, therefore some consideration must be given to the kind of protein that is purchased. In the case of hogs at least 25 to 35 per cent of the protein supplement should be of animal origin (tankage, meat scraps, milk products, etc.).

A rough rule of thumb to remember is that at least 20 per cent of the protein a hog eats should be of animal origin for most efficient production. A small percentage of protein is present in any grain, therefore the supplement should contain enough animal protein to balance not only the protein found in the supplement, but also that contained in the grain. If quality of protein is equal between two protein supplements, then again the practice of buying protein per unit of protein would save money for the hog producer.

POTATO ANGLES

Wide adoption of improved varieties of potatoes by farmers is one of the reasons why crop failures are so much less frequent now than 25 years ago. Other reasons are the use of certified seed, concentration of production in favorable areas, and more effective control of insects and diseases.

The national potato breeding program of the Agricultural Research Administration and many state experiment stations is responsible for much of this improvement. Each year it releases new varieties better suited to certain areas.

Dr. F. J. Stevenson, USDA potato breeder, has collected some interesting figures on the popularity of potato varieties. According to the lists of certified potato seed, 51 varieties were planted in 1948. Of these, 20 were in use before 1900, and 31 are only 17 years old or less. The old varieties, such as Irish Cobbler, Triumph, White Rose, Russet Burbank, and Green Mountain, account for more than half the certified seed sold. But Katahdin, leader of the new potatoes, nearly all of which have Indian names like Chippewa and Sebago, tops all individual varieties.

Potato progress is by no means at a standstill. Dr. Stevenson looks forward to making new combinations of desirable characters with breeding stock already available—USDA