

Ash.—This is the mineral matter taken from the soil by the plant in its growth. It is composed chiefly of lime, magnesia, potash and soda combined with phosphoric and other acids. In the animal it assists in the formation of bone (largely phosphate of lime) and furnishes that small quantity of mineral matter found in all animal tissues.

IMPORTANCE OF PROTEIN AND FAT.

The farmer buys feeding stuffs chiefly to enrich his home-grown fodders and grains with protein and fat, and thus make them more effective; in other words, to make a well-balanced ration. The value of these purchased feeds will depend chiefly, therefore, on their percentages of protein and fat, and to some extent on a low fibre-content.

The Commercial Feeding Stuffs Act of Canada requires that the larger number of the milling and manufacturing products sold as feeds (bran, shorts and the meal of whole grains are excepted) bear a tag or brand guaranteeing the minimum percentages of protein and fat and the maximum percentage of fibre in the feed. These guarantees should be looked for and well studied before making a purchase, for it is not always possible from mere inspection to judge of the quality of a feed or to be sure that it is unadulterated.

LOWEST-PRICED FEED NOT ALWAYS CHEAPEST.

Let us suppose the farmer is buying cottonseed meal. He has two samples submitted to him, "A" and "B." Except that one is somewhat brighter and yellower than the other, they are much alike. "A" is quoted at \$30 per ton; the price of "B" is \$35. Are the market prices of these meals in accord with their nutritive values? Or, to put it otherwise, if "B" is worth \$35 per ton, what is "A" worth? Their composition is shown in the illustration.

Assure that the farmer is purchasing, essentially, for the **protein** and **fat** these feeds contain, and that these nutrients are approximately equal in value to him, we may proceed as follows:—

Add together the percentages of protein and fat and divide the sum into the price per ton; the result will be the price per protein-fat unit in the meal, thus:—

A.		B.	
<i>Protein</i> ...	26.50	<i>Protein</i> ...	37.62
<i>Fat</i> ...	5.84	<i>Fat</i> ...	7.91
32.34)	\$30.000(.927	45.53)	\$35.000(.769
29	106	31	871
8940		31290	
6468		27318	
2472		39720	
<i>Price per protein-fat unit in "A" 93 cents approximately.</i>			
<i>" " " "B" 77 "</i>			
<i>Difference 16 " "</i>			