The profits made on the steers of the respective lots, without shrinkage being deducted, was $16.52, $15.68, and $10.97 respectively. Accounting for the shrinkage it was reduced to $10.21, $9.20, and $4.70 respectively.

The net profit per animal was $2.68. Such an outcome under the conditions of sale and purchase was almost surprising. One lot of the steers, namely, Herefords, cost more per 100 lbs. than they sold for. And the mean difference between the buying and the selling price was only 40c. per 100 lbs., and had the steers been valued, when the experiment began, on the basis of shrunken weights, it would have been considerably less.

The profit was, indeed, small, but it must be remembered that it was an off year in feeding. Many of those engaged in it lost money. It is what is made in the average of years that counts, and that forms the basis of the profitable character or otherwise of a business. We will reach averages in due time. In the meantime, the great point in the experiment is not to be lost sight of; that is to say, the fact first, that the steers in lot 1 made a higher average gain per day than the steers in lot 3, although they were fed 3.36 lbs. less meal daily while making it; and, second, that because of this they made the said gain at a less average cost of .82c. per pound.

In the breed contest the Galloways stand first. The average weight of the Galloway, Shorthorn, and Hereford grades at the beginning of the experiment was 1,012, 1,114, and 987 pounds respectively. The average increase in weight per animal was 259, 240, and 238 pounds. The average cost of feed was $9.38, $9.91, and $9.06. The average cost of making 100 lbs. of increase was $3.62, $4.18, and $3.84, and the average net profit was $9.52, $6.62, and $7.91.

Soil Humus.

This important subject is treated of in Bulletin 32 0, North Dakota station, which opens with the following statement:

"The matter of humus in the soil is attracting the attention of all thoughtful farmers, and many are asking for information and how to prevent its loss, or how to increase soil humus. An attempt will here be made to explain what is meant by the term soil humus, and in what way its presence in the soil is beneficial. Our statements are based in part upon our own investigations and in part upon results drawn from data of other stations." A few definitions and explanations may assist in better understanding what may follow.

That portion of the earth that is cultivated for plant growth is the soil. It is made up of mineral and organic matter. The mineral consists of lime, potash, phosphates, iron, magnesia, aluminum and various other minerals of less importance.

The organic matter includes everything that once existed as vegetable or animal matter.

Volatile matter consists of the moisture, gases and organic matter, all of which can be driven off from a spadeful of soil by heating it or burning it.

Humus is that part of the organic matter in the soil which has partially decayed, such as leaf mould, rotten roots and blades of grass, clover or peas. Rotted manure is rich in humus. Unrotted manure or green crops plowed in soon make humus by rotting down in the soil.

The opinion seems to be gaining ground that much of the available plant food is the portion in the humus, and as the humus increases in the soil the potassium, phosphoric acid and other mineral products existing in the soil in insoluble forms not suitable for plant food are taken up by the humus to form new compounds better suited to nourish the growing plants.

In eight determinations of North Dakota soils, 41 per cent. of the phosphates was found in the humus, and the proportions ranged from 10 per cent. to 91. Of the nitrogen from 46 to 80 per cent. of the total was found in the humus, and on an average 61 per cent.

What becomes of this nitrogen when the humus is destroyed by decay? It goes back into the atmosphere, or is washed into the rivers, and so carried out to the ocean. In these ways five pounds of nitrogen are lost for every pound used by the growing crops.

If, then, the mineral matter taken up by the plants and the nitrogen are drawn largely from the humus of the soil, it will be seen how important it is to maintain well the supply of organic matter in the soil, that it may be transformed into humus as needed by the plants under cultivation. Continuous wheat-growing is a process destructive of humus and of all organic matter in the soil. Not that the wheat uses up such large quantities, but, under conditions of wheat-growing as generally practised in this state, there is a rapid decay of organic matter, nitrification under these conditions being very rapid, and the products escape as gases into the air and are washed out of the soil, or, in case of the mineral products, phosphates, etc., they combine in such forms as to be no longer readily available for feeding the plant.

An acre of soil to the depth of one foot weighs about 3,225,000 pounds, or 1,600 tons, and some soils as much as 1,800 tons per acre. Experiments have shown that soils containing the most humus hold the most moisture, are warmer, looser, mellower, most easily worked, and most fertile.

Following is a summary of this important bulletin on soil humus:

1. By twenty years of wheat-growing from 40 to 60 per cent. of the organic matter of our soils have been lost.

2. For every pound of organic matter that has gone to furnish its nitrogen to wheat five pounds have been lost.

3. Many of our soils that originally contained from 8,000 to 10,000 pounds of nitrogen per acre to the depth of one foot now contain from 3,000 to 6,000 pounds.

4. By the loss of humus our soils have become less retentive of moisture, and give it up by evaporation sooner than when they were well supplied with humus.

5. Bare summer fallowing and burning of the wheat stubble destroys large quantities of organic matter and humates.

6. To keep the supply of humus in the soil we must imitate nature and grow for the present at least one year in five a grass crop on our land.

7. By keeping up the supply of humus in the soil, the crops will feel the effects of drouths less than in soils poor in humus.

8. Clover would be an ideal crop to maintain the humus in the soil and to aid in collecting nitrogen from the air, but any grass will serve the purpose of supplying humus, and Bromus inermis has done well in this state, and may be used.

Danish Tuberculosis Law

The Board of Agriculture have received through the Foreign Office a translation of a law passed by the Danish Government with the object of combating tuberculosis in cattle. Under this law provision is to be made in the annual budget for £5,555, to be placed at the disposal of the Ministry of Agriculture, in order to assist proprietors of beasts who wish to make use of tuberculin as a diagnostic means of combating tuberculosis among their cattle, provided that the injections are given in accordance with the regulations fixed by the Ministry. Part of the grant may also be given as a supervension to cattle-breeding associations with the same view. Live cattle can only be imported *via* certain stations fixed by the Ministry of Agriculture. Immediately after importation the cattle are to be tested at quarantine stations with tuberculin by the veterinary police, such tests to be completed within five days of landing at latest. Animals which show no reaction may then be handed over to the owners for their free use; animals which have reacted must either be refused admittance or slaughtered under the direction of the veterinary police. The expense of establishing the neces-