guide us in our methods of keeping it. Of all manures, that from horses ferments most rapidly and that from neat cattle most slowly. It is important then, to obtain not only uniform chemical composition, but uniform fermentation, that the manure from the different animals be mixed as thoroughly as possible in the manure heap.

The close relation of the value of the food fed to the value of the manure produced is quite evident. The richer the food in nitrogen, phosphoric acid, and potash, the richer will be the manure in these ingredients which give it value. To the extent to which these are lacking in the food will they be lacking in the manure. Good feeding as a rule produces good manure.

The greatest variation in the value of manure, however, is due to the method of keeping it. The object should be to preserve all of the valuable manurial constitutents. These may be lost in three ways--by escape of the liquid manure; by leaching; by fermentation.

To avoid this loss the stable floors should be tight, so that no urine escapes, and the bedding be sufficient to absorb it all. If the bedding can be cut, it will be a better absorbent, and can be more easily applied to the surface of the land.

By far the greatest loss of manurial constituents occurs in the barnyard by leaching; the soluble nitrogen, phosphoric acid, and potash being washed out by rains, and carried away in the streams. The richer the manure the greater will be the loss from this cause.

But few farmers have covered yards in which the manure is kept. This is probably the best plan, still, by proper management, in an open yard having a water-tight and slightly concave bottom, there need be no great loss.

It is a common mistake to have the manure pile cover too much ground, and the manure scattered about, exposing an unnecessarily large area to rains. A much better practice is to keep the pile in a compact mass, the sides up square and the top level, the manure being levelled each day as wheeled from the stables. Water from adjacent eaves must be carried off in suitable troughs, and no liquid allowed to run from the yard. In this way the loss from leaching may be reduced to a minimum. The rainfall will do no harm if there is sufficient litter to absorb it. Evaporation from the surface will often equal or exceed the rainfall in amount, so that litter sufficient for retaining all the rain that falls is not needed.

There is a great difference of opinion as to the advisability of allowing manure to ferment before applying it to the land. Our opinion is that owing to its beneficial action during decay on organic matter in the soil, much is gained when it is applied as soon as made. There need, however, if under proper conditions, be very little loss of valuable constituents when fermentation is allowed in the barnyard. When fermentation takes place in manure that is kept moist without leaching not only is there a considerable decrease in bulk, owing to the burning up of carbonaceous matter, but there is very little loss of nitrogen. If, however, there is insufficient moisture present the manure becomes what is known as "fire fanged," a considerable loss of nitrogen occurring. The best results are obtained, with least loss, when the manure is allowed to ferment slowly. To promote slow fermentation, the manure from the different kinds of animals should be mixed, kept moist, and compacted by animals treading upon it. Sheep, fed from racks that are moved about the yard, keep the pile uniformly compacted and in good condition. Pigs allowed to run in the yard answer the same purpose, as well as help mix the manure by rooting.

Manure taken to the field should always be spread at once over the surface. It should not, under any conditions, be distributed in small piles, as rapid fermentation soon takes place and the loss will be considerable. Whether, or not, manure wastes by simply drying is a disputed question. Storer, an authority on such matters, states that during evaporation, ammonium carbonate is carried off with the aqueous vapor; while results of experiments conducted at Cornell Agricultural Experiment Station last year, show that no appreciable loss takes place when manure simply dries. There is certainly room for investigation along this line. Believing it is best to err on the safe side, we prefer having the manure beneath the surface as soon as possible. Manure should be kept near the surface, as there may be loss from leaching to the subsoil, if not immediately appropriated by growing plants. If the manure is ploughed under, a shallow furrow slice will be best, as the microbes of nitrification are most active in the preparation of plant food near the surface.

To prevent waste in manure then, observe the following:

1. Have water-tight stable floors, with sufficient litter to absorb all liquids.