

that is, it contains more of the albuminous material. For instance meat, skim milk, the white of eggs and the gluten of wheat are nitrogenous. Fat, starch and sugar are carbonaceous. By keeping these facts in view the subject will be better understood. The supposition that corn is the best material for fattening fowls in confinement or otherwise is not borne out by investigation. The edible portions of a fowl (taking the average of analysis) consists of about twenty-four and one half per cent of the nitrogenous elements and only two per cent of fat. Of course there are other portions of a fowl that are not edible and in which there is more fat, but enough is known to affirm that in order to secure the largest increase in weight, when a fowl is being fattened for market, a fowl must have a ration containing more of the nitrogenous materials than is found in grain, corn containing about eleven per cent and wheat containing twelve per cent of nitrogenous matter. Young fowls that are growing will increase more rapidly than the adults, hence corn will give better results with fowls than with chicks; but there is a great advantage in a mixed ration, whether the fowl is old or young. Eggs are more nearly balanced than the flesh of the fowl in nitrogenous and carbonaceous substances, as an egg contains about fifteen per cent of the (nitrogenous classed as "protein") to ten and one half of the carbonaceous. Then, there is the mineral matter, (bone etc.) of which one and one half per cent is found in the edible portion of the fowl and about eight-tenths of one per cent in the edible portion of the egg. Hence, the food must be of the proper constituents to supply the wants of the fowl for its well being under all conditions. Again, much carbonaceous matter is used by the fowl to supply bodily warmth in winter. Grain is consumed really like fuel, the body of the bird being the store, and heat created. If grain is largely fed in the summer, the fowl will not require it, because it does not need heat at that season. It is easily seen, therefore, that corn and wheat may be excellent foods when the weather is cold, but very injurious in summer, an excess of grain resulting in the storage of the surplus heat on the body in a latent form, and which is known to become fat. Corn is cheap only when it is needed. When it is not required, it becomes very expensive. If nothing but corn is given as food to fowls they may starve in the midst of plenty. They die because they have an oversupply of the carbonaceous material

and not enough of the nitrogenous. They cannot supply the waste of bone and tissue, yet their bodies may be weighted with fat. They become debilitated, weak, their legs fail and disease takes them off. In addition to the grain, therefore, other foods should be used, such as cut-clover, bran, cut bone, meat, linseed meal, blood animal meat, cabbage, potatoes, skim-milk or any other kind of food, but do not confine the fowl to a strictly grain diet. Give laying hens a ration about equally balanced in the nitrogenous and carbonaceous substances as food, and the same for growing fowls. When fattening adult fowls add linseed meal and meat to the grain ration, as the carcass, though complete, may only require more fat; but never feed a ration to any class of fowls if the food does not contain in some degree nitrogenous material, as corn and wheat exclusively will not give the best results.

AGRICULTURAL AND NEWS COMMENTS

Milk is pasteurized when it is heated from 155 degrees to 167 degrees. This process kills most of the germs. Boiling the milk (212 degrees) or heating it nearly to boiling point kills all the germs and is called sterilization.

A good way to start a forest of nut trees is to plant the seed in the ground where the tree is to grow. Samuel Miller says: "Cover the walnut two inches, hickory one, acorn one, hazel nuts and chestnuts the same as hickory."

A common estimate of the cost of eggs is one cent each. This is a fair estimate, allowing the average cost of a hen to be \$1.25 a year, supposing that she lays about ten dozen eggs in that time. But the hen above the average will lay more eggs and therefore produce them at less cost each.

Pigs may be made useful in more ways than one. Recently an Australian coasting steamer struck on a reef and those on board were likely to come to grief. There being no rockets on the ship, the captain tied a life line to some pigs which formed part of the cargo, and had all the animals put overboard. The pigs swam to the shore taking the lines with them, and by establishing communication every soul on board was rescued by means of travelling cages.—*Farming*