

breeding sows are often reduced in value as breeders by improper feeding. If the sows are fed largely on a carbonaceous ration they are likely to become too fat. When the sows are kept too fat they are not regular breeders. When they do farrow, the result is a small litter of weak pigs.

The sows should not be starved at any time. They should be fed on a well-balanced ration with plenty of protein to produce an abundant flow of milk. After the pigs are weaned the sow requires nearly the same ration. It is a common practice with many farmers to put the brood sow on a starvation ration as soon as the pigs are weaned. It is as bad to feed them on corn only. Corn alone may do for fattening an animal, but when fed alone to pregnant sows it does not supply enough protein to develop properly the growing fetus. The result is the sows will farrow small litters and weak pigs. If we wish to maintain a prolific strain of brood sows we must give attention to how they are fed.

### **THE PRINCIPLES OF FEEDING**

The proper feeding of animals is not a process to be determined by guessing. Best results will come to the feeder who knows the composition of the feeds he is using, and has sufficient knowledge to combine them into a proper ration. An insight into those principles is given here, and will be found useful in determining the combination of feeds to be used.

### **COMPOSITION OF THE ANIMAL BODY AND ANIMAL PRODUCTS**

Investigators have found that the bodies of animals, as well as animal products, are made up mainly of water, ash, protein, and fat. These substances occur in the animal body in varying proportions, depending upon the age, condition, treatment, and other factors. Water is an essential constituent of the animal body, and composes from 40 to 60 percent of the live weight. Ash occurs mostly in the bones, and forms from 2 to 5 percent of the live weight. The fat occurs in greatly varying proportions, but rarely constitutes less than 6 percent, or more than 30 percent. Protein includes most of those substances which contain nitrogen in their composition. It is an important group, and is largely present in lean meat. The whites of eggs also consist mainly of protein and water. In its pure state protein contains about 16 percent of nitrogen. The flesh, internal organs, brains and nerves, contain a large proportion of it.