

paddock has really nothing in its favour. The method is fundamentally wrong; it is wasteful, or, rather, extravagant; it is not conducive to good health, and it generally makes a quagmire of the land. In too many instances it must be described as the limit of carelessness. But, even so, some benefit is obtained by the stock. Roots have a characteristic laxative effect, which is very beneficial, especially to dairy cows.

For pigs, roots form a very valuable supplementary food. Often the animals are allowed to feed the crop off; but better results, of course, are obtained when the roots are pulled and fed with other food. When pigs are being hand-fed about 5 lb. of roots per day is as much as will be consumed. As fattening advances the roots should be reduced in daily quantity and given in small amounts.

*Turnips and Swedes.*—The storage of roots greatly enhances their feeding-value, owing to a rise in the sugar content, especially in swedes. This root, therefore, should be reserved for winter and early spring use. Swedes especially should not be fed when freshly pulled. The value of turnips over swedes lies in the fact that they ripen earlier and are ready for use in autumn. This, having regard to their composition, makes them a useful supplement to pastures which are failing. Frosted leaves of turnips may cause serious digestive troubles.

*Mangolds.*—Mangolds are very useful in the dairy herd for later use, or, rather, after the swedes are finished and spring growth has not yet commenced. They have a slightly higher feeding-value than swedes, this being due to an increase in the sugar content and other soluble carbohydrates. Newly lifted mangolds have a very severe laxative effect. They should always be pulled and allowed to lie a considerable time before feeding—not hours, but days, or even weeks. Mangolds should not be fed continuously to male sheep, as they may cause the deposition of urinary calculi (gravel in the water).

*Carrots.*—Carrots are considered particularly valuable as a horse-feed, but they are also fed to cows. The red or yellow varieties impart a beautiful rich colour to the milk, owing to the colouring-matter, carotin, which they contain. In some districts carrots are grown as a supplementary forage for sheep. Carrots have a slightly higher feeding-value than mangolds. For feeding, carrots should be regarded as having an equivalent value of 7 lb. to 1 lb. of oats. They contain the same amount of dry matter as potatoes, but only half the feeding-value. Raw carrots, however, are more valuable than raw potatoes. They are excellent feeding for sick animals. Horses in work should receive from 6 lb. to 8 lb. per day.

*Rape* is used either for pasturage or as a soiling crop for sheep and swine, but it may be cut and fed green to cattle, having proved an excellent feed for all three classes of stock. Owing to its high water content and its narrow albuminoid ratio (1:4.3) it does not feed well alone, but ought to be fed along with low-protein feeds, such as maize, cereals, and wheat middlings, or with pasture or hay. It is a valuable crop, especially for autumn use, more particularly in the fattening of lambs and sheep.

*Kales, Cabbage, &c.*—These form a very useful feed for autumn use when pastures are failing, but are no better than some other more cheaply produced auxiliary crops.