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Dairy Farming.

In European countries where agricultural practices are conducted on scientific lines, dairy farming has been of late becoming more and more popular. Together with stock breeding, it has in many instances replaced cereal growing. Essex, which was originally a county of arable farming worked by English farmers, has given place largely to dairy farming and stock rearing introduced by Scotch farmers who settled down there not long ago. The reason evidently is that dairy farming is much more profitable than arable farming when it is run on business lines. But if we turn our attention to India, things appear to be very different. There is hardly a dairy farm worth the name at the present moment. It has not caught the fancy of the ryot. Even the so-called agriculturist educated on modern lines looks

at it with suspicion. He would rather go to the sea for a few acres of dry land than sink his money on dairy farming which appears to him such a speculation. When pressed for a reason, he would cite a man here and a man there who has wrecked himself on this dangerous rock. Failures occur everywhere; even in America and Britain where up-to-date methods are adopted, there are farmers who have failed in their business. The cause is not far to seek. The Dairy farmer, like the manufacturer, ought to be able to calculate what his products cost him and what the sources of his profit and losses are. In other words, he should make dairy farming a business concern and study the conditions which would bring him the most profit.

We may consider the main ideas a dairy farmer ought to have before him to make his business a success. In the first instance, one naturally turns to the land. The suitability of the soil as regards its composition and value is no doubt of great importance. But this is not all. The principal cause of low yields is not so much the impoverished state of the soil as the want of proper preparation and tillage, because many so-called poor soils have an abundance of plant food for several crops. The dairy farmer should, however, use manures to keep up the fertility and take accurate accounts of them. It must also be his aim to grow suitable crops suited to his soil and method of farming. Forage crops are to be supplemented by cakes, the aim being to maintain the soil fertility. The dairy farmer should so utilise his crops as to remove the minimum amount of fertility elements in the finished product. Such removal can be replaced either by manu-

ring the land or by feeding the animals with concentrated food. The latter is more profitable as it tends to serve the purpose of feeding the animal as well as of eventually restoring fertility to the soil in the shape of dung cast by the animals. Pasture grounds should always be available on dairy farms and plentiful water supply within easy reach of the animals. While grazing, the animals obtain exercise which is necessary for their health.

The next thing to consider is the breed. Very little is known in India with regard to the particular breeds suited specially for dairying. A beginning can anyhow be made by any dairyman. He can, so to speak, make up his own breed. The chief point to aim at is that his animals come from a milking strain, as far as possible, such cows as combine quantity with quality. Animals with a fairly long period of lactation coupled with regularity in calving are no doubt points worth aiming at in a milking herd. It is impossible for one to say which is the best breed because it greatly depends upon the individual needs and tastes of the dairyman, and what is considered best by one may not suit another equally well.

It is to the advantage of the dairy farmer if he raises his own cows from the best calves. The dairy herd should be perpetuated particularly from the best cows and opportunity should be taken to build up a herd in such a way and, having got it, to endeavour to maintain it. Purchase of cows from outside tends to lower rather than raise the standard because it is not at all likely that the best cows are ever sold.

The third consideration of the dairy farmer ought to be the maintenance of milk records. These are essential for determining profit and loss. Besides, it should be the aim of the dairyman to gradually improve the herd and he can do this by recording the performances of all his cows and at the end of each year by weeding out those which are unprofitable to him. Again, by knowing exactly the capabilities of each individual cow, he can adjust her feed accordingly. This is of utmost importance as most dairy-men lose sight of the fact that they often overfeed their poor cows and underfeed their best milkers.

Fourthly, proper feeding of animals leads to important results and it has to be done as a business. It is necessary to study the requirements of individual animals with regard to the effect of various foods. Feeding standards are excellent, although it must be admitted that they are only guides to the dairyman. These help him to see whether he is feeding too much or too little or giving his animals an unbalanced ration.

Lastly, it is of primary importance that the dairy farmer disposes of his products in a business-like way. Cleanliness is the keynote for successful dairying. Punctuality and tidiness go a long way in ensuring his business a success. He should no doubt know all the tricks of his trade but there is no gainsaying the fact that honesty will pay him in the end. The larger the concern the greater are the chances of success generally. He should make good use of his by-products, and aim at the least amount of waste.

The object of the article is not to theorise what is impracticable. It is to show that even in India, there are successful dairy farms following the lines indicated. We have but recently visited one such and derived much inspiration. We refer to the Military Dairy Farm at Bangalore. The farm is situated just outside the municipal limits with an area of about 60 acres all told. The pasture ground has on it very little grass worth mentioning but the dairy cattle have plenty of free movement and excellent water supply.

A mixed herd of cows and buffaloes is kept. The former has much Ayrshire blood in it. Ayrshire, it must be remembered, is pre-eminently the milking breed of Britain. It is fortunate that Bangalore climate lends itself to such importation of cold country animals. The buffaloes are of Delhi origin. About 1600 lbs of milk are obtained each day, the individual average of the herd being twelve pounds per day. One or two animals give as much as 60 lbs per day. The animals are housed comfortably and are trained to the stanchions so that the food of an animal is not appropriated by her stronger neighbour. An abundant supply of fresh hay is given them in addition to concentrated food. Cows are divided into four classes depending upon the amount of milk given by them, and they are fed with cotton seed meal, cotton seed hulls, wheat bran or rice bran and brewer's grains making a total of twelve pounds of concentrated food in the case of first class animals yielding more than 20 pounds a day and eight pounds in the case of animals

whose daily milk capacity is less than twelve pounds. All classes get twenty pounds of hay equally. Particular attention is paid to animals nearing parturition. Two weeks before calving they are put under special feed and kept in special calving sheds. The calves themselves are tenderly cared for. The pure-bred stock are weaned very early in life and receive special rations which are increased as the calf grows. They are treated to a copious supply of surplus skimmed milk. In all calf sheds pieces of rock salt are hung for calves to lick whenever they choose to. The breeding bulls on the farm are all that could be desired. In addition to liberal quantities of hay and concentrated food, they are given coconut cake to give them a finish. They run with the herd which is not altogether desirable, but the cattle boys are supposed to report at once any cases of service while grazing.

Most of the milk is sold as milk, very little being converted into butter. The milk before being sold is pasteurised at 180° F and cooled to 35° - 40° F and immediately transferred to the cold storage room. The morning's milk is sold in the evening and the evening's the next morning. If customers do not care for the rich buffaloes' milk it is 'reduced' by adding three parts of skimmed milk to seven parts of whole milk. The majority of the butter made is from cream purchased from contractors who are paid the ridiculously low rate of 10½ annas per lb. of butter made from cream supplied. It is surprising to us from our own experience how this can be done; nevertheless this is a fact. The contractor is paid only on the

quality of butter manufactured; if it goes bad it is liable to be returned. The butter is made in an improved "Astra" combined churn and worker having a capacity of ninety gallons. The butter 'comes' within five or six minutes. After washing, 2% salt is added and then the butter-worker is pushed into the churn so that churning, salting and drying are all done in one operation. The texture of the butter remains firm and, soon after manufacture, the butter is removed to the cold storage where it may remain in perfect condition for two months. The whole dairy plant is run by one engine. All vessels are scalded by steam after use. Milk records are kept up to date and milk is frequently tested to see if the proper percentage of fat is maintained.

We were assured and we have no hesitation to believe, that this dairy farm is run on commercial lines and we earnestly look forward to the day when there would be many such dairy farms run with profit and on up-to-date methods.

D. ANANDA RAO.

Reclamation of Saline Land.

There is a large backwater near Coondapur town. With a view of getting this reclaimed and brought under cultivation, I gave out last year about sixty acres of this on cowle terms, of rupees two per acre for five years and rupees four per acre thereafter, to a number of private persons. The lands were sold by auction for the most part and fetched about Rs. 65 per acre. On inspecting these lands this morning I was interested to see the