

Work for Farmers.

is sufficient work to do for that purpose most economically, a net profit has work for four mares; or for two, good useful animals, heritable blemishes, should mate these in the vicinity, connection with his services of a suit- d. He can use his foaling, provided a work. They are s' rest and can then ordinary farm work, the kind of a horse fails to produce a her for a fall colt, overstock his farm the markets require, areared for, is salable

are willing to buy the very good reason than they can pro- that have a large blue grass pasture, grazing colts than e years old it should nances, to the farmer grain or for any work. These men y to go to the city siderable advance

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y readers see great or the sole profit of o a little figuring, es, only they must n away with them. they will soon con- the above pointed reeding and grow-

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g the nastiest is its bed the most have a fresh bed as to be thankful

ys possible in the for the mothers a ows arrive. Give e fattening, food; h clover-hay tea, d the same way, meal scattered on

Canadian farmers e wheat cheaper tter. The writer heat raising, but t more to produce s of butter; and eir land from e worth more at ll after they have

How to Raise a Skim Milk Calf.

Nature's way of raising a calf by allowing it to run with the cow produces a good one—the kind feeders want; and the dairyman must provide, as nearly as possible, the same conditions for the calf as it has when with its mother, and he, too, will produce the calf demanded by the feeder.

The cow feeds the calf often, and milk that is blood warm, sweet, and free from germs. Leave the calf with the cow until her udder gets in good condition and her milk all right. This gives the calf the same treatment at the start that he gets if he is to stay with the cow all the time until weaning. If the cow's udder is hard and feverish, rubbing it by the calf's baby head in his attempt to get food reduces the swelling and softens the udder. For about two weeks after the calf is taken from the cow, the best results are obtained by feeding warm whole milk three times a day—two quarts in the morning, one quart at noon, and two quarts at night. After this the calf will do well if fed only twice a day, morning and night, at regular hours. At the end of three weeks, begin to get the calf on skim milk, but do this gradually. The first time take out half a pint of whole milk and put in its place half a pint of skim milk; the second feed use a pint of skim milk and take out a pint of whole milk. This method takes ten days to change from whole milk to skim milk. Increase the amount of skim milk fed slowly as the calf can take it; remembering that ten quarts of skim milk is a full feed for a calf five to six months old.

The cow supplies the milk to the calf blood warm. Feed both whole milk and skim milk at this temperature. We feed all skim milk warm, even when the calf is five or six months old.

The cow's milk contains all the materials needed for the health and growth of the calf in just the right proportions. Skim milk is without the cream or fat, and must be balanced up. Feeding trials have shown that starch in food takes the place of fat, and serves the same purpose when eaten. It is the dairyman's business, then, to take high-priced butter-fat from the milk, sell it, and supply in its place to the calf a cheap food, rich in starch. Corn is good for this purpose; Kaffir corn grain is better. Calves fed skim milk have a strong tendency to scour; Kaffir corn is rich in starch, and is our most constipating grain. It seems to be adapted by nature to be fed with skim milk, the two together producing the natural condition of the bowels. We feed Kaffir corn finely ground to calves, and always feed it dry, separately from the milk. More skim milk calves are probably stunted or killed outright in Kansas by mixing the grain with the milk than by any other means.

Calves need starchy grains to take the place of the butter-fat taken out of the milk. Starch cannot be used to support life until it has been changed to sugar. The saliva of the mouth has the power to change starch to sugar, and the more slowly and thoroughly the grain is masticated the better it will be mixed with the saliva and the greater the proportion of starch that will be changed to sugar. Feed dry Kaffir-corn meal or other grain to the baby calf and it will chew and chew for a long time on a small quantity of the grain, getting the starch thoroughly mixed with the saliva. Mix the grain with the milk and it is quickly eaten and swallowed, little saliva is mixed with it, and but little starch is changed so that it can be used by the body. The rest not only does the calf no good, but irritates the system, bringing on indigestion and scours and stunting the calf. Feed grain dry.

Keep the calves separated after feeding milk until their mouths become dry, so that they will not suck each other's ears. Where a number are fed, this is most easily and cheaply done by light stanchions, which can be made out of fence boards and set up in the feed yard or pasture, or other convenient place.

The calf will begin to eat grain and hay when ten days to two weeks old. These feeds should be given fresh twice a day.

A supply of fresh-clean water should be kept within reach of the calves all the time. The most convenient way of providing this is with a hog waterer, attached to a barrel. Have salt where the calves can eat what they want of it.

The greatest difficulty in raising skim-milk calves comes from scouring. Prevention is easier than cure. The chief causes are overfeeding, feeding cold or sour milk, feeding grain with the milk, and dirty pails and feed boxes. Careful watching will usually prevent any serious trouble from this dis-

ease. At first indications, immediately cut down the feed. Milk pails and cans should be washed and scalded, the same as if the milk was intended for the table. For scouring, give one to two ounces of castor oil, or, if the case is bad, ten to fifteen drops of laudanum a day, until the trouble is checked. Change feeds very slowly, as a sudden change often causes scours.

Finally, remember that the calf is a baby, and give it the kindness and care due every baby. The better a calf likes you the more it will gain. Pet it. Keep its pen and yard dry and comfortable; keep it warm in cold weather and give it cool shade in summer. We like a shed open on all sides for summer shade, as this will protect from the sun and allow the air to blow through freely. The College has a large stone barn with basement, but we found that the calves thrived better in a common board shed than they did in this barn. The basement was not as well lighted and ventilated as the shed.

Flies often annoy calves so that they do not gain well. The department of horticulture and entomology of this Station furnished us a formula that we used on the calves in this experiment at a cost of one-fourth to one-half cent a day and kept the flies off. It is as follows: Pulverized resin, 2 parts, by measure; soap shavings, 1 part; water, 2 parts; fish oil, 1 part; oil of tar, 1 part; kerosene, 1 part; water, 3 parts. Place the resin, soap shavings, 1 part of water and fish oil together in a receptacle and boil till the resin is dissolved; then add the 3 parts of water, following with the oil of tar mixed with the kerosene. Stir the mixture well and allow it to boil for fifteen minutes. When cool, the mixture is ready for use, and should be stirred frequently while being applied.

From one-eighth to one-half pint is sufficient for one application. To apply the mixture a brush is



SKIM-MILK SCRUB-BRED STEERS. AVERAGE WEIGHT, 724 POUNDS, AT ONE YEAR OLD.

Fed according to the system recommended by the Kansas Agricultural College in Bulletin No. 97.

used. We find nothing more satisfactory than a large painter's brush. At first it is well to make an application for two or three days in succession. Afterwards an application every other day will suffice. It is often more economical not to attempt to protect the entire animal, but only those parts not reached by the head or tail. It is perfectly safe and in no case has it appeared detrimental to the health of the calf.

Farmers often object to the expense of handling calves in the way we have indicated. It does not take much time. Two hours a day was all the time needed to feed the calves in this experiment, and part of this time was used for taking weights and making records. At the time of writing this bulletin we are feeding forty-five young calves, divided into five lots, and each lot fed a different way. It takes five hours a day, while if they were all fed alike, and each feed did not have to be weighed, much less time would be needed. It does not take much more time to feed a skim-milk calf so that he will gain two pounds a day than it does to feed him so that he will become a runt, but it does take thinking, patience and careful attention to the little things.

This experiment shows that calves can be easily raised on skim milk and fed and handled so that they will be thrifty, gain well, and be in good condition for the breeder or feeder.—From Bulletin No. 97, Kansas State Agr. College.

More and more as the years go by experience is teaching the farmers of Canada that stock raising and the feeding of stock is the secret of success in their vocation. Only by this means can the fertility of the land be restored and maintained.

Summer Treatment of Young and Breeding Horses.

A DAY ON A NOTED HORSE FARM.

To know how young horses are cared for at such noted studs as that of Messrs. D. & O. Sorby, Guelph, Ont., where an indifferent animal is the very great exception, and the finest class of stock the rule, is valuable information to anyone attempting to rear horse stock. During a recent visit to the home of this firm, we observed many points that are worthy at least of consideration, if not emulation. First of all, we observed that all the horses, whether mares and foals, yearlings or horses of other classes, were housed during the day-time away from the sun and flies. This is commenced as early in the summer as the flies begin to torment the animals. They are all brought in before the heat of the day commences and again turned out into roomy and rich pastures about six o'clock in the evening. They are not tied in single stalls, as is done on many farms, but each animal has an airy, light, well-bedded brick box stall about 15 feet square or larger. The fact is, there is not a single horse stall on the farm, the three substantial roomy ranges each consisting of two rows of box stalls with a wide passage (10 or 12 feet) between. Each stall has a water box supplied from a spring well by a windmill, besides necessary mangers for feed. Whatever the season of year, these are the quarters in which the stock is housed, and seldom a day passes at any season when the animals, young or old, are not given their liberty in a field or roomy fenced plot. At this season, two of the stallions have access to these plots during the nights, and the third stallion takes his exercise a few hours during the mornings and evenings. As all well-informed stockmen understand, plenty of

regular exercise is one of the chief factors in keeping especially well-fed animals in perfect health both in body and limbs, and not only that, but it keeps their digestive systems in such vigorous condition that they can be heavily fed if desired, which, with the constant exercise, will produce firm muscle instead of flabby fat. To this end, however, plain food is an important accompaniment.

Whether for mares and foals, growing stock or breeding stallions, the food given is alike in kind to all, and consists of crushed oats and bran mixed, two parts oats to one of bran, and these mixed with about twice their bulk of cut hay, timothy and clover of good quality, fed dry. The mares and foals run loose, so that what the foal eats is from its dam's manger. Mr. Sorby considers it might be well under some circumstances to tie the mare, so that the foal could have a separate box to eat from, but he seldom, if ever, practices this because of the danger of the foal becoming entangled in the mare's halter shank. As a rule, a mare that is well fed and not working gives

sufficient milk to keep her foal in as high flesh as it should be for its future welfare. The mares get three feeds a day of the above mixture, which includes about two quarts of oat chop. The yearling stock receive similar feeding, a little less in bulk, and the stallions get four feeds each per day during the breeding season. They each get a fair allowance of such green feed as is in season, which was, at the time of our visit, green corn about five feet high. We noticed that each manger had a good supply of salt in the corner in separate compartment, and the horses could drink from the basins in the stalls whenever they felt disposed. The stalls are cleaned out every few days, so that the air is kept pure and wholesome, aided by the very efficient ventilation provided.

All the team work done on the 300-acre farm is accomplished by the brood mares and 3-year-old fillies. They are worked up till near the foaling and again after the foals are weaned. On the day of our visit the in-foal mares, Diana McKay and Venice, were hauling up hay with the horse-fork, with which they took off large loads in four forkfuls. As is the experience of all extensive horse breeders, the mares of this stud are not always easy to get in foal. The most certain time seems to be on the ninth day after foaling. A mare in good health served by a sure horse on that day is very likely to become pregnant, whereas if she is allowed to go till a later estrum, the chances of "catching" are less favorable. Mr. Sorby also considers a heavy grain diet as liable to militate against a mare's chances of becoming pregnant. Moderate work and laxative, plain food should be provided a dry mare that is inclined to take service repeatedly.

When horses have nightly runs on pasture and