

the water, I have given my cows freshly-pumped water, but I am convinced of the economy and profit of raising the temperature of the water to a point at which it will not chill them. It also pays to provide extra food for the summer. In June, a cow on good succulent pasture will need nothing in addition, but the dairyman is never safe who tries to go through the summer without a plot of sweet corn to feed in case of drouth, and for two or three months in the fall probably pumpkins are one of the cheapest and best supplementary foods. The intelligent, progressive dairyman is never caught napping; he does not try to see on how small a ration his cows can be carried through the year, but rather how large an amount of food he can get them to eat. One important aid to appetite and digestion is a regular supply of salt.—[N. Y. Tribune.]

Time that Cows should be Dry before Calving.

A correspondent to an exchange writes:—I have been handling cows all my life and for the last twelve years have made dairying a specialty.

My experience is that when I find a good cow she, regardless of breed, is always a persistent milker. Give such cows a good liberal allowance of nutritious food and keep on milking them as long as the milk flows.

About half of our herd, of fourteen, were milked within from two to three days of calving. The calves always come bright little fellows, ready for their milk as soon as they can get it. One cow in particular gave four quarts of milk the morning before she calved, and fourteen quarts immediately after calving. The calf was bright and showed a strong ambition to live and grow.

It has been my experience for years that good cows with kind treatment, liberal feeding and nutritious food continued up to within a very short time of calving will do better than to dry them off and put them on one-fourth or one-half rations. It is needless for me to say that our herd under this treatment has as good a record for butter making as any herd in the State.

Butter takes nothing from the soil that affects its fertilization. It is almost wholly carbon, which is derived by the plants from the air.

Prof. Stewart says that heating milk in a water bath to 135° will destroy the bitter taste caused by cattle eating weeds and other plants likely to produce this unpleasant condition.

To lead a stubborn cow put a rope around her horns in the usual fashion, and then pass it back of and around her ear, then forward and under the rope which goes around the horns, pulling the ear tight against the horn. When the rope is properly arranged the most stubborn cow will trot along nicely.

Why should not a man seek to get the highest per cent. of profit from the capital invested in his cows, the same as he would from an interest-bearing bond? Yet how few apply business principles as rigidly to cow-keeping as to investments for cent per cent. of interest.—[Hoard's Dairyman.]

Some practical dairymen have found that to resort to rather violent measures to dry off a cow that is a very persistent milker, ensmall the cow's performance the next year. It is also true that very many of the copious persistent milkers, if left to give milk all the time, are worn out earlier in life. On the whole, it has been found that it is best to humor the nature of such cows, even if they are shorter lived. They are grand while they last.

Garden and Orchard.

Cultivating the Orchard.

At the Michigan Agricultural College, Prof. L. H. Baily, made some valuable experiments on the cultivation of orchards. They were conducted in the old college orchard which had been lying in sod for a number of years. The trees were all in an unthrifty condition, having almost entirely ceased to grow and bear. A large number of them were dead, principally the Baldwins Greenings and Fall Jennettings.

The first work of renovation was to prune the trees. This was done vigorously in May, 1885, the tops being made high enough in every instance to allow the passage of a horse in harness. All limbs, irrespective of size, which would interfere seriously with plowing and cultivating, were removed. At the same time the tops of the trees were thinned considerably, though not to such an extent as to allow the sun to beat continuously upon the main branches. The trunks and main limbs, so far as a man could reach, were scraped, all the loose bark and "moss" being removed. This scraping was performed solely for the purpose of making the trees look better. It is a common observation that the most successful orchardist is the tidiest one. Care was taken not to scrape into the live bark. The implements used for the purpose were old, well-worn hoes with the handles cut off about two feet from the blade. This implement should be held loosely in the hand, else it will scrape too hard.

As soon as the pruning was accomplished and the great quantity of brush removed, the ground was plowed, and plowed as deeply as possible. To be sure roots were broken, but this did no harm. The ground was cultivated at intervals with the spring-tooth harrow, and in August a second plowing, in the opposite direction, was made. No crops were planted. There was no effect produced upon the trees that year. The season's growth, if any, was well under way when the first plowing was made. The leaves continued yellow, and fell very early, as usual.

In 1886 the same treatment was repeated. Nearly as much pruning was done as in the previous year, this time, of course, entirely in the top of the trees. Care was exercised, however, not to prune the tops so thin that the large limbs would be injured by the sun. The trees early showed signs of improvement. Although the summer was dry, the growth on all the trees was good and the leaves assumed a dark, vigorous color, and remained very late upon the trees. So marked was the improvement in the orchard that it was a subject of common remark. A fair crop of apples, some 300 bushels, was also gathered.

In the spring of 1887 the orchard was again plowed, deeply as always before, and the sod was removed from all the trees by hand. The tops are now so high that the plow turned over nearly all the sod. The ground was now in good heart. The trees set were full of fruit, and no pruning was attempted. Although the trees had borne a heavy crop, and the season had been one of almost unprecedented drouth, the growth had been heavy. The bearing trees were about 140 in number, of which less than 100—all Northern Spy—are a prolific variety and produced apples which find a demand in market. There were a number of Sweet Romanites and others which could not be expected to return a profitable crop.

Over 1,800 bushels were raised and sold for \$550; of these 550 bushels were cider apples.

The reason for so great a proportion of these was the heavy crop and the drouth, which rendered it impossible for all the fruit to mature. Thinning would probably have paid. The crop was remarkably free from worms. Old apple buyers declared that they had never seen so few wormy apples in a crop. This freedom from insects was due to sprayings of Paris green. A force pump was used for this operation. It was a double-acting pump and geared from a hind wheel of a wagon. A rough platform was made on the wagon, and upon this a kerosene barrel, with the pump attached, was securely fastened. One man drove and one handled the hose, which was about ten feet long. One side of a row could be sprayed at a time, and if the wind was right there was little inconvenience about the work. They experienced some difficulty in getting the motion right, but it was finally adjusted so as to be perfectly satisfactory. The motion must be tolerably rapid so that the team need not hurry by a tree too quickly. A flattened nozzle was found much more satisfactory. They felt the need of handy and rapid shut-off, in the case of vacant places in the orchard. An attachment was used which constantly agitated the water in the barrel, keeping the Paris green in suspension. (There are many hand force-pumps which can be procured cheaply, and which will answer all the purposes of this pump for small orchards.) They will endeavor to use this pump for spraying potatoes. They used a half-pound of Paris green to a kerosene barrel of water. In one instance they used three-fourths of a pound, but the liquid injured the foliage. In the same report we find the following:—

The apple industry is undoubtedly diminishing in many parts of the States. The old orchards are beginning to fail and new ones are not being set to any extent. Although prices for apples have been low for the last few years, there is every reason to believe that an orchard of moderate extent if intelligently managed, will add a reliable source of income to the general farmer. There is no doubt but that judicious pruning, good tillage and liberal manuring will maintain or restore the fertility of most orchards. There may be danger in vigorous orchards of carrying the cultivation so far that nearly all the energies of the trees will be directed to the production of wood. The grower must determine the culture which shall meet his requirements. It is true that in the great majority of cases, however, the culture is inadequate. Barn-yard manure, when it can be spared, is valuable for the bearing orchard.

Permanent sod is an injury. This has been proved in the experience of nearly every successful orchardist. It is forcibly illustrated in the instance of the old College orchard. In the earlier experiments conducted by Dr. Beal the same fact was emphasized. For some years he kept a part of the trees in sod, others were cultivated thoroughly, while still others were cultivated at varying distances from the body of the tree. Even as early as 1874 he found that "trees in grass made less growth, looked yellow in foliage, and bore smaller fruit and apparently less of it." In 1875 he observed that "the evidences look more and more strongly every year against the propriety of leaving trees, in our section, in grass. They have stood the severe winters no better; they have borne no better; the apples are smaller; the trees grow more slowly; a greater proportion of trees have died than of those cultivated each year."