

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

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one lot having their flesh thickly laid upon their backs where the high-priced cuts are, the other storing their fat in their bellies in the form of cheap-selling tallow, the well-bred cattle weighing say 1,300 lbs. at less than three years old and bringing \$78 a head, the others weighing 1,000 lbs. at the same age and selling at \$35 a head, or a difference in the value of two carloads of 20 head of \$860, the cost of production being practically equal. A similar comparison between a herd of deep-milking and high-testing cows and an ordinary set will hold equally good, the latter probably producing less than their feed would bring in the market, the former making a substantial profit over the cost of their keep.

Making due allowance for the fact that the average farmer cannot afford to pay fancy prices for what he regards as fancy stock, there is little excuse for going on in the old rut, making no improvement, for within the reach of nearly all are the services of pure-bred males at a moderate fee, while for a reasonable price a pure-bred sire can be had that is good enough to make a great improvement in the character of the young stock, and if followed by others as good or better, the improvement may be continuous and satisfactory.

Breeders of pure-bred stock are not, as a rule, the selfish, grasping class that the general farmer is apt to consider them, and are not making the fortunes they are supposed to be making, as their investments and expenses are heavy, and they are doing quite as much for the country as for themselves, whether they mean it or not, and they will be found, as a rule, willing to give the struggling farmer and the ambitious beginner as low prices as they can afford and as easy terms as can reasonably be expected. There are hundreds of young bulls, of both the beef and dairy breeds, fit for service now in the hands of Canadian breeders that ought to be secured by the farmers of the country, and which can be bought at prices which they will bring for beef when their term of service in the herd is completed, if they cannot be sold for more as breeding stock. Breeders, in their own interest as well as that of the country, should seek to cultivate this end of

the trade as well as the, for the present, more profitable section of it, for good blood, like leaven, spreads, and shows its influence wherever it goes. Like bread cast upon the waters, it shall be seen after many days, and the people only need to be educated to an appreciation of its value, when the breeders will be recouped by the greater and more general demand, and the whole country will be advantaged and enriched by the higher prices obtained for products of the best quality in the markets of the world.

Cultivation of Corn and Roots.

Now that the growth of corn and root crops has begun, nothing is of greater importance to the production of a successful crop than intertillage. The experience derived during the dry seasons of recent years has taught every thoughtful agriculturist that there are profitable lessons to be learned in the conservation of soil moisture. The advantages to be derived from frequent stirring of the surface-layer between the rows are so great that no farmer can afford to neglect this part of his work. Most soils at seedtime contain an abundance of water. Some well-known authorities state that it is present in sufficient quantity to nourish plants during their entire period of growth. The great problem is how to conserve it.

From the law of capillarity we learn that moisture tends to equalize itself throughout the soil. When land has remained undisturbed for a time, or after a heavy rainfall, small pores are formed by the compacting of the soil particles. As the surface becomes dried through solar radiation and evaporation of winds, the water from below rises through these minute channels, and if no interruption to its progress takes place, the supply soon becomes exhausted. By the use of a mulch or covering that will prevent the soil water from coming in contact with the air, this great essential to plant life may be retained. Since it is impracticable to supply a mulch in the form of farmyard manure or decayed vegetable matter of any kind at this period, the best plan is to loosen the surface by means of a scuffler or cultivator. In doing this, the pores are broken; the water rises until it reaches the point of "break-off," and, as the exhausting influences are beyond its reach, it is held for future use.

To secure the maximum amount of benefit, cultivation should begin as soon as the rows of corn and roots can be distinctly followed. Just as the corn plants are coming through, many give the field a stroke of the harrows and frequently a second one a few days afterwards. Cultivation should be kept up at least once a week and as soon after a heavy rain as the soil can be worked, discontinuing the practice only when the crop has closed the rows or has begun to mature. While the plants are small the weeder may be used by removing, in case of roots, the teeth opposite the line of plants; later, the scuffler will be most effective. In beginning with this implement, the usual, and perhaps best, practice is to cultivate deeply at first, gradually going more shallow as the plants develop root. For corn, four inches will be found about the right depth at which to start on most soils. According as the work continues it should be lessened to the least possible distance at which a complete mulch may be maintained.

While the benefits to be derived from the retention of soil moisture are sufficient in ordinary seasons to more than repay the expense entailed, there are others almost as important that go hand in hand. The destruction of weeds, aeration of the soil and making of plant food available are each advantages secured in some degree through the conditions which conserve moisture. Where weeds are troublesome, the constant tillage necessary to corn and root crops will not only germinate large quantities of seed which may be in the ground, but also destroy any plants aiming to reproduce their species. In most cases, at least once going through the fields with the hoe will be found necessary. In stirring up the soil air is admitted, and the oxygen necessary to the life of beneficial bacteria is supplied. Such eminent authorities in past ages as Jethro Tull have said that tillage is manure. To what extent that is true we cannot at this time discuss, but it is certain, as the result of experiment and the observation by practical men, that proper cultivation of the soil during the growing season liberates and makes available large quantities of food suitable to the sustenance of plants.

The O. A. C. Course Discussed.

To the Editor "Farmer's Advocate":

Sir,—Having noticed lately in the columns of the "Advocate" a couple of letters dealing with the Ontario Agricultural College, and having given considerable thought to this question, I should like to express my views, as a student, through the medium of your excellent paper. At the outset let me explain that this is not intended to be in any sense a personal criticism, for of the personnel of the staff I have a high opinion. It is a criticism of subjects, not of the professors who teach them; of methods, not of the men who adopt or use them.

What is the purpose of the O. A. C.? Is it to train an additional number of our best men for professional positions abroad, or is it to give the rank and file of Ontario farmers such a useful education as will enable them to achieve the maximum results in practical agriculture? The greatest misfortune of Canada has been the pronounced tendency of her educational institutions to educate so many of her best men for the so-called higher professions; these becoming overcrowded, the surplus has been forced to new fields in foreign countries, thus robbing Canada of much of the flower of her population, to contribute to the building up of her Republican rival. What we need in Canada to-day is as large a proportion as possible of our best men upon the farms to demonstrate by actual achievement the advantages and possibilities of our best and greatest industry—agriculture. Professors are all right—and they should not be dullards either—but I contend that we have got to combat the all-too-prevalent idea that any man can be too clever or too able to find ample and remunerative scope for his energies in practical agriculture, and that the best men, therefore, should necessarily go on to fit themselves for professional positions. The tendency of our Agricultural College has been to draw too many of her best students from the farm to fit them for professional positions in American colleges—a good thing, no doubt, for these colleges, but a serious loss to Canada. The O. A. C. boasts that about eighty per cent. of its students return to the farm, and, comparing this with High School statistics, seeks to draw a comparison in its favor. But the fact is that comparatively few of our High School pupils go there with the intention of fitting themselves for agriculture, but the O. A. C. students are drawn almost entirely from the ranks of intending farmers, and the fact that twenty per cent. or more of these promising students should leave the farm is in itself an indication of a weakness somewhere in the course. Why, as "Truthseeker" asks, is there such a relatively small proportion of our farmers' sons attending the College? Now, I do not mean to condemn the whole course, for, despite weakness, it is a very good one, and I accordingly intend to return to complete the two-year course.

The O. A. C. course should be intensely practical. It is not enough that it be more practical than the High School, for the radical defect of this is that it is not practical. It is not enough that our College be more practical and successful than those across the line, for many of these are notoriously neglected and deficient. Besides, as Canada has not as yet the wealth of production of her southern rival, we must make up for this by the greater excellence of our methods and the superiority of our agricultural products. Therefore, we need a better college than any in the States; and, consequently, it behooves us, while recognizing the real merit of the O. A. C.—and it has much—to insist upon its being improved to the utmost limit.

One respect in which the O. A. C. is behind the High School is in the method of teaching. Now, I am well aware that the lecture system is in vogue in colleges and universities, so that the O. A. C. is not behind them in this respect; but it is behind the High School. Having had some personal experience in each, it seems to me that far less relative progress is made in the O. A. C. College than in the High School, and the reason is that in the former the instructor simply talks to his pupils and dictates notes, which must afterwards be "plugged" by the student himself, the consequence being that the information can be fixed in the pupil's mind only at the expense of infinite pains. Too often it is never really learned at all, but is simply "plugged" for the exams., and is then promptly forgotten. Academic resolutions against "plugging" are then passed and various preventive expedients resorted to, but the fact is that the system places a premium upon cramming. How, then, can the practice be stopped and the students made to learn instead of cram? By abandoning the lecture system for the High School system, by adopting suitable text-books and then following these systematically, assigning each day a lesson to be prepared, and then making this prepared lesson the basis