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THE DOMINION BANK

Our School Department.

Some Farm Problems.

The manual issued by the Ontario Department of Education mentions, to those teaching agriculture, problems constructed around farm work and rural conditions. The country is full of problems. The little schoolhouse itself suggests dozens of arithmetical tasks. The school garden and the school grounds can be used as the basis for many knotty little problems in arithmetic, and owing to the local flavor these problems can be made interesting as well as educative.

The farm itself, as suggested by the manual, is rich in arithmetical problems. Let us first consider a farmer in the spring of the year computing his seed requirements, and as this paragraph progresses the reader will find many problems, the solution of which will afford good practice in arithmetic. The farmer on a hundred acres will probably be sowing ten acres to oats, either Banner or O. A. C. No. 72, and he will wish to sow in the neighborhood of two and a quarter bushels of seed per acre. He may want some barley for hog feed, and will sow five acres of O. A. C. No. 21, perhaps, at the rate of seven pecks per acre. It is good practice, too, to mix oats and barley when seeding, because the mixture gives a better yield than either grain grown separately, and the best mixture is a bushel of oats and a bushel of barley per acre. This makes splendid chop for hogs or cattle, and the farmer will probably wish to sow ten acres. In corn-growing districts, perhaps the hundred-acre farm should have in the neighborhood of ten acres of corn, seeded at the rate of about twenty-five pounds per acre. Generally speaking, farmers seed down in the spring, or on the fall wheat, and we shall assume that this farmer is going to sow grass seed on the twenty-five acres where grain is to be grown. On ten acres he may put clover, timothy and alfalfa; seven pounds of red clover three pounds of timothy, and three pounds of alfalfa per acre. On the remaining fifteen acres he may seed with the following mixture: Ten pounds of red clover, three pounds of timothy, and two pounds of alsike per acre. This farmer desires to know how many bushels of oats, how many bushels of barley, and how much corn he will have to get ready for the seeding, and he is also anxious to ascertain how many pounds of red clover, how many pounds of timothy, how many pounds of alsike, and how much alfalfa he will have to purchase. Can you help him?

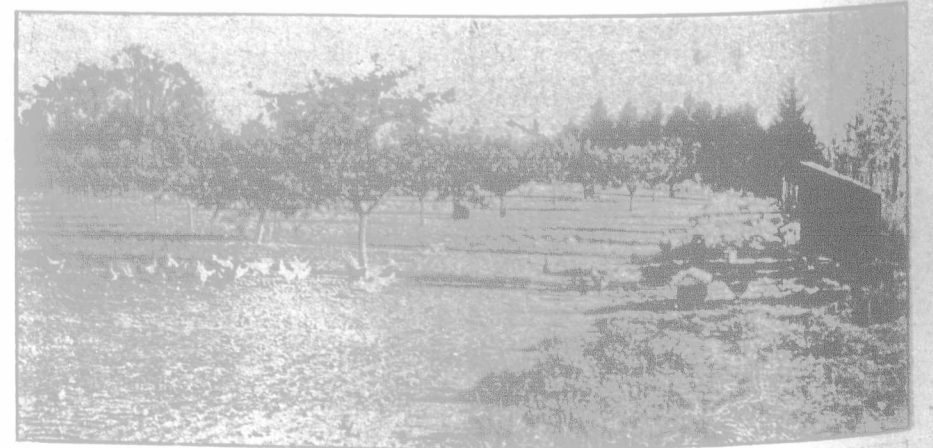
There is often some doubt in the minds of farmers whether hog production is profitable or not. Perhaps with a little figuring we could estimate pretty closely whether that farmer in your neighborhood, who just sold a load of hogs, made or lost on the transaction. Let us assume that when the pigs were weaned, at seven or eight weeks old, they weighed thirty pounds each. Let us also work on the basis that four and a half pounds of feed will produce a pound of gain. This tells us approximately how much grain or millfeeds the hogs consumed. Perhaps to help us a little we may furthermore

assume that the hogs were fed a mixture of oat chop, 100 pounds; barley chop, 100 pounds; shorts, 100 pounds. By looking up market quotations during, say, the early part of September, we can find out what these feeds were worth. We know how much the hogs weighed, how much they sold for per pound; then by placing the cost of production against the selling price we can find out what the profit was.

Every successful dairyman does considerable figuring, and the dairy suggests many arithmetical problems. The herd may consist of, say, six cows. No. 1 only gives 4,000 pounds of milk a year, No. 2 gives 5,000 pounds, No. 3 gives 5,500 pounds, No. 4 gives 6,000 pounds, while Nos. 5 and 6 give 6,500 pounds of milk a year. The average butter-fat test of this milk is 3.5 per cent. Find out what farmers in your district are getting for butter-fat (not butter), and see how much revenue the dairy herd would return if all the cream were sold on the basis of present prices for butter-fat. There would be skim-milk left on the farm, the value of which might be put at around 40 cents per hundred. The returns from cream and skim-milk will give the gross revenue from the herd. Perhaps the milk is sold in the whole condition for city consumption, or to cheese factories. In this case the problem is a simpler one.

The round silo which stands at the end of a barn can be made the subject of many calculations. Let us consider a few of them, and perhaps at the beginning we shall tell you how to find the capacity of a silo. The bottom of the silo is a circle, and to find the area of this the radius is squared and the result multiplied by $3\frac{1}{7}$. This gives us the number of square feet in the bottom of the silo. Then if we multiply this by the height of the silo we find out its cubical contents, or the cubic feet inside the silo. A cubic foot of silage at the bottom will weigh in the neighborhood of 40 pounds, while a cubic foot of silage at the top would weigh considerably less than 30 pounds. When estimating the weight of silage, it is safe to figure that a cubic foot, averaging the whole contents, will weigh 30 pounds. We have told you enough about computing the capacity of a silo; now let us assume that the farmer has eight cows and ten young cattle. The cows are to receive 25 pounds of silage per day and the young cattle will average 15 pounds per day. If silage is fed from the first of December to the first of May, how big must the silo be to hold corn enough for the period mentioned? There is another problem in connection with the building of silos that is a trifle more intricate, and it arises out of the fact that two inches of silage should be taken off the surface each day. With the number of cattle given, and on the basis of the amounts mentioned, what must be the diameter of the silo in order to insure that at least two inches of silage will be required each day to feed the live stock?

These are just a few farm problems. There are hundreds more; some difficult of solution and other quite easily solved. The pupils can bring little problems to school with them and parents can help in making arithmetic in the rural school both interesting and educative.



The Subject of Interesting Calculations.

The farm flock can be used as a subject for many interesting arithmetical problems, which can be made as difficult or easy as the teacher desires.