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HOW TO FEED FOR MILK

Rations Must be Well Balanced and Also Generous.

Special Indoor Feeding Required—Silage, Pulped Roots, Chopped Clover Etc., Recommended—Feed the Cows Liberally.

(Contributed by Ontario Department of Agriculture, Toronto.)

Pastures may produce sufficient nutriment for the average producing cow, but the heavy producer cannot eat enough grass to satisfy her hunger and the demand of her milk producing organs. To such heavy producers supplementary grain mixtures should be fed in quantity sufficient to satisfy the cow's hunger and make possible the full functioning of the milk secreting organs. On good pasture the average producing cow cannot make profitable use of grain feeds, but when on poor pastures the feeding of grain as a supplementary may be the only way by which the milk flow can be kept up.

Pastures Must Be Supplemented by Grain.

Cows producing 50 pounds of milk per day, testing three per cent. butter fat, should receive in addition to good pasture 8 to 10 pounds of mixed grain chop per day. Cows producing 30 pounds of milk per day testing three per cent. butter fat would benefit by the addition of four pounds of mixed grain chop each day at the milking time on return from pasture. In some districts the season of flush pasture may be very short. If such is the case provision for supplementary coarse feeds must be made. This may be most easily done by providing good silage. Many of the more progressive dairymen feed silage during the entire summer period in quantity in keeping with conditions in the pasture field, increasing or decreasing the quantity at the demand of the cow. The growing of soiling crops such as the oats and pease mixture, the growing of alfalfa and red clover corn, and roots in season are ways of keeping the cows working should the pasture fail. The cow's stomach should be kept well lined with feed if she is to be profitable as a producer of milk. As the grass or pasture crop dwindles, other feeds must be supplied or milk cannot be made. Many good feeders supplement the failing pastures in August with green fodder corn and second growth clover, newly made silage from peas and oats or corn may follow these. During October and early November, greystone turnips and sorghum are frequently used. All these feeds go the same route and produce much the same effect on the animal body, differing but little in degree. It is not so much what we feed if we would only feed enough and use a variety of feeds so that the cow can perform the work required of her.

Special Indoor Feeding Required.

With the closing of the autumn and cessation of outside feeding, necessitating all indoor feeding over a long period, provision for which should have been made during the growing season, by way of producing an amply quantity of silage, clovers, roots, grain feeds, and straw. How many cows can I carry through the winter, is the viewpoint too frequently taken by many dairy men. For profitable work this viewpoint is generally wrong and should be turned about to read, how few cattle can I keep to eat up all the feed. Lack of definite knowledge as to the feed requirement per animal, and of an easy method of figuring this requirement, has caused much loss through many farmers trying to winter more stock than the feed supply in their barns would warrant. When cows do so well on June pasture, it should be an incentive to all feeders to imitate in so far as possible the succulence of June grasses.

Silage, Pulped Roots and Chopped Clover Recommended.

Well made silage is the best substitute, with pulped roots and chopped clover a good second. Good red clover and alfalfa hays while not succulent are highly nutritious and palatable. With silage, clovers, roots and straw at hand, a sufficient variety has been provided and it is considered good practice to give producing dairy cows all of these feeds that they will take, without waste. In addition to these bulky feeds one pound of mixed grain chop per day should be fed for each three pounds of milk produced, over and above 10 pounds. That is a cow producing forty pounds of average market milk per day would require all the coarse feeds she cared to eat and ten pounds of mixed grain chop per day. The grain feed requirement can also be expressed as one pound of mixed grain chop per day for each pound of butter fat produced in a weekly period. That is if a cow were producing four gallons or forty pounds of milk per day, that tested four per cent. butter fat, she would produce in seven days eleven and one-fifth pounds of butter fat. This would entitle her to eleven and one-fifth pounds of mixed grain per day.

Liberal Feeding Is Absolutely Necessary.

Another rule that is practiced by the best dairymen is to feed all of a well-balanced ration that good dairy cows will take without making any appreciable gain in weight while in full flow of milk. The balancing of rations for dairy cows is very important and is not followed by many careful, business dairymen and farmers, but unfortunately many of those having the responsibility of cow feeding lack the knowledge of proper, pencil and figure it, and consequently hesitate or neglect this very important item in dairy cow management. —L. Stevenson, Secretary Dept. of Agriculture, Toronto.

PLUMBING ON THE FARM

Running Water Not a Luxury, But a Necessity.

Practical Hints on Home Installation—The Water Service Pipes—The Fixtures—Have a Good System of Drainage for Waste Water.

(Contributed by Ontario Department of Agriculture, Toronto.)

A plumbing system consists of three main parts: Water service, fixtures, and waste pipes.

The Water Service Pipes.

The duty of these pipes is to convey the water from the supply to the fixtures. They should be galvanized iron of first-class quality, and the size for the house is ½-inch, except the one that connects the hot water boiler to the kitchen range or furnace, which is ¾-inch in size. Pipe is bought by the foot in small quantities and by the 100 feet in large quantities, and the price for galvanized iron pipe at the present time is 10 cents per foot for the ½-inch, and 12 cents for the ¾-inch. The amount required for a house is about 120 feet, but it varies with the size of the house and the layout, particularly the location of the bathroom in relation to the kitchen, also whether soft water is on tap as well as hard water. Sections of pipe are joined together by threaded couplings, and red lead or a special paste is used on the threaded parts to make the joints tight and preserve the threads from rusting and becoming permanently set. The water in these pipes is usually under 30 to 50 pounds pressure, and all joints must be positively water-tight, particularly so if the pipes are laid under floors.

Test the Pipes for Leaks.

After they are installed and before they are covered up either under floors or in partitions, and before they are covered up for good, the water should be turned on under good pressure and a thorough test made for leaks, not only at the joints but all along the pipe line, as a small hole or split would cause a serious leak.

Be sure the man operating the threading tool knows his job and does it properly. It is very essential that the water pipes be located safe from frost, and therefore it is highly advisable to keep them away from the outside wall of the house or stable, if possible.

It is particularly imperative to keep the pipes connecting the hot water boiler to the kitchen range or furnace fire box from freezing, as a stoppage in this line would cause a blow-out upon the fire being started in the morning, and serious loss of life or property would likely occur, and lastly it is very poor economy to install anything less than the highest quality of galvanized pipe, never use wrought iron pipe for water, galvanized always.

Plumbing Fixtures.

These comprise the kitchen sink, laundry tubs, bathtub, lavatory sink, and closet. There is a considerable variety in the style and quality of these articles, and naturally a large range in prices. You should insist on a good quality of enamel coating on the fixtures, this is very important. The standard dimension of some of these fixtures are as follows:—Kitchen sink, 20 x 30 inches. This sink should have a back, and one drain board, at least, of wood or enamelled iron should be provided for, two are better. The sink should be located at the most convenient height above the floor for the women using it; not too low, else undue stooping has to be endured. A 5-foot bathtub is the standard size. It should be placed far enough from the wall to make easy cleaning around it possible. The lavatory sink may be secured in a shape either for side wall or corner installation. In the installation of a closet insist on a stop-cock on the feed pipe to the tank, so that if the tank needs repairing the water can be turned off just below the tank. Any standard type is satisfactory.

The cost of a standard outfit is about as follows: Lavatory sink, complete with trimmings, $24.50. Closet complete, $35.00. Kitchen sink, 20 x 30 inches, with bibbs and trap, $23.35. Laundry tubs, $55.00. Bathtub, 4½ or 5 feet, $66.50, or total of $204.35. The cost of the soil pipe, water pipe and connections including labor for installing them and the fixtures is about $195, making a total of about $400.00.

A Drainage System.

This part of the plumbing system consists of the soil pipe or stack that extends from the sewer up through the house and out beyond the roof. All the wastes drain into this pipe and by it are carried to the sewage disposal system. Each fixture is connected to this main drain by a smaller pipe having a trap to keep bad odors from coming back from the sewer. The stack is 4-inch cast-iron pipe made in 5-foot sections, and the joints are caulked with oakum and lead. The other pipes are 2 inch and 1½ inch, either iron or lead. Installing this part of this work, also the water service pipes, is commonly known as "roughing in.' Space will not permit of further treatment of the subject.

Write the Department of Physics, O. A. C., Guelph, for advice, and for a copy of Bulletin 267, "Farm Water Supply and Sewage Disposal."—R. R. Graham, O. A. College, Guelph.

Few gardeners realize the importance of pulverizing the soil as deeply as it is ploughed. No matter how perfectly the surface is prepared, if the soil is coarse and lumpy below, the plants will not thrive. Large air spaces in the soil are a detriment, but a large number of very small air spaces in the soil are a benefit.

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MAKE YOUR NITROGEN

Growing Legume Crops Will Help You Do It.

Clovers, Peas and Vetches Store Up Nitrogen From the Air—Good Bacteria Will Work for You—Determining the Need of Chemical Fertilizers.

(Contributed by Ontario Department of Agriculture, Toronto.)

Nitrogen costs money when purchased through the medium of the chemical fertilizer dealer, usually about twenty cents a pound. Some of our farmers are spending from ten to forty dollars per acre a year for nitrogen to increase crop production. With five million pounds of nitrogen floating as a gas over every acre of land such expenditure may not always be justified. That nitrogen is highly valuable as a plant food is appreciated by comparatively few of our farmers. If those who do appreciate its value are willing to pay twenty cents a pound for it, and these are the men working on small areas with intensive culture crops, why don't those larger area farmers who have a few billion pounds of nitrogen floating above their farms wake up and get at least a small quantity into the soil of their fields?

The Fertilizing Value of Legumes.

Legume plants such as the clovers, peas and vetches, together with the bacteria that are parasitic on the roots of this class of plants, form a link between the nitrogen of the air and the plant food nitrogen of the soil. This link is an implement always available to the farmer. A ton of alfalfa or clover or vetch hay may contain as much as fifty pounds of nitrogen. The roots that go with the alfalfa plants covering an acre may contain as much as three hundred pounds of nitrogen. The roots of the red clover or vetch plants that cover an acre may contain as much as one hundred and fifty pounds. The roots from wheat, corn or oat plants covering an acre may contain twenty-five pounds of nitrogen.

The Bacteria Work for Nothing.

The point is, a great quantity of nitrogen is collected by the bacteria which alone work on the clovers, peas, vetches and other legume plants. With one million dollars' worth of nitrogen over every acre of land would it not be good policy to make sufficient use of legume crops and their parasitic soil bacteria to at least provide the needs of the farm in crop production. The nitrogen accumulated by growing legume crops is taken largely from the air, while the small quantity accumulated by corn, oats or wheat roots is gathered from the soil.

All Gain and No Loss.

There is no loss of nitrogen in growing legumes but considerable gain. There is a distinct loss with all other classes of farm crops. Plan to use clovers, peas and vetches and thereby tap the fertility supply now resting above your land for future use in the soil of your fields. If you can figure out a rotation to suit your own special needs and have legume crops growing two years out of four there will be little used to worry about the nitrogen supply.—L. Stevenson, Secretary Department of Agriculture, Toronto.