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ABOUT THE ATTIC TANK

Useful for Rural and Small Town Houses.

Not an Ideal System, However—Something Better Later On—The Making, Installing and Filling of the Tank Described.

(Contributed by Ontario Department of Agriculture, Toronto.)

My last article described how the farm pump on shallow wells may be located inside the house or stable, thus doing away with the carrying of water. This arrangement, of course, will not provide for water under pressure, and, therefore, a complete plumbing system is not possible, nor is hot water made available. To secure these great advantages, it is necessary to either elevate the water to some form of tank at least a few feet higher than the highest fixture in the house, or pump the water into a strong metal high pressure tank against the enclosed air which when compressed into about one-half to one-third the volume of the tank will create sufficient power to force the water out when the faucets are opened. The first arrangement or system is usually called the Attic Tank water system, the second, the Compressed Water System.

Why Called "Attic Tank System."

This system is popularly known as the Attic Tank System because the water supply tank which supplies water under pressure is usually located in the attic of the house. To get enough pressure to force the water through the hot water boiler and the coils in the furnace or kitchen range and supply any fixture as sink or bath tub with water at a reasonable rate of flow, it is necessary to get the water tank a considerable distance above the highest fixture. To secure say 35 lbs. pressure at the kitchen faucets the tank would need to be at least 80 feet higher than the kitchen, so you see that in order to get any pressure worth while the tank must be located at the highest possible level inside the house, hence the attic location. More pressure and hence faster flow at fixtures may be had by locating the tank outside the house on the top of a high tower, for example, just above the wind mill, but outside tanks are not popular for evident reasons.

The System Is Not an Ideal One.

The Attic Tank System has given pretty fair satisfaction where properly put in and cared for, and therefore has been really worth while. It is doubtful, however, if many more of this type of water system will be installed, as the more modern ones, which I will describe in subsequent articles, are very much superior. The chief objections to this system are, first, the water tank is liable to freeze unless well protected, the tank may spring a leak and seriously damage the interior of the home and the furnishings, the supply is not high enough to give good pressure, you have to wait a long time to get a pail of water, and as the tank must of necessity be pretty small, pumping must be resorted to very frequently in order to keep enough water on hand; and lastly, the water has to be pumped up to the tank by hand pump and few people enjoy pumping even if the pumping is done indoors.

How to Make the Tank.

The tank itself is usually constructed of pine or spruce plank, tongued and grooved, well held together by iron rods and the inside lined with A1 quality galvanized iron. A tight top should be used in order to keep dust and dirt out of it On one side near the top there should be installed an overflow pipe leading to the outside or to a sink or some fixture below, preferably in the kitchen, so that the one who is pumping may know by flow from pipe when the tank is full. The tank should be large enough to hold at least three or four barrels of water. In some houses it is possible to arrange for running part of the rain water from the roof into this tank, in which case considerable pumping is eliminated.. The tank should be located preferably over a partition so that the weight of water would not cause a sag in the floor of the attic. A tight metal tank about five feet long and two feet in diameter strapped to the ceiling above the bathroom might be used instead of the wooden one in the attic.

The Filling of the Tank.

As stated, the tank is usually filled by a hand pump located in the kitchen or cellar. The pump used for this purpose must be a force-pump in order to lift the water to the required level. If electricity or small gas engine were available either might be used to pump up the water. Sometimes the tank is filled by windmill and sometimes by an hydraulic ram operating at the spring a considerable distance from the house. Write the Department of Physics, O. A. C., Guelph, for further particuars. Make modern conveniences for the farm home your special study this winter.—R. R. Graham, O. A. College, Guelph.

Some "Don'ts" for House-Cleaning.

Don't use water on waxed woodwork. Rub with a waxed cloth, then with a clean flannel cloth.

Don't wash all the curtains at one time and don't starch them. Use a little rice water or thin starch in the last rinse water. New curtains are not starched; why advertise that your curtains are old by starching them?

Don't beat rugs such as Brussels or Wilton on the right side. Lay them face down on the grass, beat and sweep on the wrong side. When replaced on the floors wipe the surface with a cloth wrung from hot salt water. This brightens and freshens the rugs.

THE FOODS OF PLANTS

Like Human Beings, They Need a Balanced Ration.

Poor Plant Growth Without Nitrogen—Phosphate Also Required for Best Results — The Dieting of Plants Explained.

(Contributed by Ontario Department of Agriculture, Toronto.)

Plants, like animals, require food. Their food consists of simpler substances, but it is none the less necessary. In general farm practice we do not feed plants; but we grow them in a soil, from which and the surrounding air, we expect them to gather their food. In nearly every instance there is an abundance of food around the plant, but it is not always in a form that it can be absorbed. Sometimes there may be an abundance of some of the food constituents and very little of others. We recognize the importance of a balanced diet for man, but fail to realize that it is just as important for the plant.

The Soil Must Have Nitrogen.

Fortunately, while there are quite a number of essential parts to the balanced diet of a plant; there are only three or four that it has difficulty in getting, and, of these again there are two that are more frequently deficient than others. These are nitrogen and phosphoric acid. There is a great store of the former in the gaseous form in the air around us, as much as approximately 70,000,000 pounds over every acre of land. Yet, because the plant takes its nitrogen in a soluble form through the roots of the plant, this inert, gaseous nitrogen is of no use until it is taken into the soil and rendered available. Among other methods of getting this nitrogen into the soil, nature has provided that if we grow legumes, such as clover, peas, etc., we will get some of this nitrogen built into the plant. Then on the decay of the accumulated vegetable matter from these and other plants, the nitrogen is left in the form that is of use to plants. This means that decaying vegetable matter in the soil is the main source of nitrogen as a food for farm crops other than legumes. We may be quite sure tha. if the soil is low in decaying vegetable matter there will be a small amount of nitrogen. Without plenty of available nitrogen we cannot get the abundant growth of leaf and stem that is necessary; necessary, because it is in the leaf that the carbon dioxide taken from the air is built up into sugars, starch, and other compounds of like nature, and that anything that limits the size of the leaf just as surely limits the plant's ability to make and store these compounds. Nitrogen forces big leaf and stem growth, hence its great value in crop production.

The decaying vegetable matter, however, does more than furnish nitrogen; it improves the physical condition of the soil, thus making it easier to work. It increases the ability of the soil to hold water, thereby insuring better returns in dry weather, and in its decay furnishes acids which help to bring insoluble plant food into an available condition. These are strong statements to make about any constituent of the soil, but they show the importance of growing catch crops to plough down as frequently as possible in the rotation. A legume naturally is the best crop, but where this is not possible, or too expensive, grow rye, rape, or some crop that will furnish organic matter to the soil.

Phosphate Also a Necessary Food.

The element next to nitrogen in importance is phosphorus. Nitrogen can be got from the air by leguminous plants, but the phosphorus supply in the soil can be supplemented only by adding some form of manure or fertilizer. The supply in the soil is comparatively small, and is naturally held in an insoluble form, so that losses by leaching may be reduced to a minimum. So firmly is the phosphorus held, that in our study of the soils of the Province, we find that after nitrogen, no plant food constituent that may be added will give so decidedly good results as phosphorus. This is especially true when applied for the cereal grains and turnips. On fall wheat, 400 pounds of acid phosphate per acre has doubled the yield, and basic slag on heavy soils has given even better results. On soils fairly rich in vegetable matter, and thus well supplied with nitrogen, there is usually no need of supplementing the general manuring with anything but the phosphate, the exception being when fall wheat has wintered poorly and is having a hard time to make growth in a cold backward spring. Then an application of nitrate of soda at the rate of 100 to 150 pounds per acre on the poorer parts of the field will usually pay well.

Turnips have difficulty in absorbing phosphates, hence although the ground is usually well manured for this crop, it will pay to add three or four hundred pounds of acid phosphate per acre. On ground that was rich enough to grow twenty-five tons of turnips per acre we have raised the yield five tons by the use of three hundred pounds of acid phosphate per acre.

The points to be kept in mind are that while nitrogen is so valuable there is a very large supply in the air which can be got through the growing of leguminous crops, and that the phosphate, for various reasons, have a peculiar value when used to supplement good general manuring and good cultivation.—Prof. Robert Harcourt, O. A. College, Guelph.

"Water in the farm house" should come either before or just after the automobile.