

Soils and Crops

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HEN-HOUSE LIGHTS HELP POULTRY PROFITS.

During the last few years the subject of artificial illumination for poultry flocks has been a topic of keen discussion. When the idea first became popular it was supposed that by some psychological process the hen was made believe that she was going through two days instead of one and naturally the old erroneous adage, "An egg a day" would mean two eggs a day. The process is purely a physiological one, however, and not one of psychology at all.

At present we can find records at most college plants and experiment stations which all point in the same direction—more winter eggs.

The underlying principle of artificial illumination is a problem in feeding. It is said that the crop of a hen will contain only enough feed to keep the digestive tract busy for a period of four or five hours. In other words, in the short winter days a hen goes to roost about 4.30 or 5.00 p.m. We have always attempted to send her to bed with a full crop, but now we see that this supply is going to be well on its way before midnight. Then where is the heat and energy to come from for body maintenance? We know that an animal body makes demands on the food and stored materials first for body maintenance. In other words, heat must be supplied. Broken-down tissue must be replaced, energy must be supplied and the natural secretion must be kept up. These functions we find take from three-fourths to four-fifths of all the feed consumed. The excess, if any, will be used for production, or in the case of a hen, for reproduction. We find that in the short winter days the hen has a small amount of excess food to be used for production, due to the short feeding hours and the long hours of inactivity.

The economies of artificial lighting reveals an increase in winter production which means an increase in profit when the price is high. While a slight increase can be expected in early production this is not great enough to add materially to the profits. We really take the heavy spring laying and distribute it over the winter months while prices are better.

Electric, gasoline and kerosene lights are used, but the most economical and successful is electric current. We find many people using gasoline lights and having excellent results. They are not quite as satisfactory, however, for a large plant, due to the labor in tending the lights. Kerosene lanterns do not give very satisfactory results. Automatic devices can readily be arranged for electric lights, thus reducing materially the labor. Where electric current is available two forty or fifty W. T. lights will light a pen 18x20 quite nicely. These lights should be arranged at a point slightly forward of the middle of the house and spaced about evenly from the ends. This reduces the shadows to a minimum. A single light tends to produce more shadows. The lights may be fastened to a rafter or joist. It is not necessary to drop the light closer than six or six and one-half feet from the floor. A reflector will aid materially in lighting up the floor area. One gasoline lantern will illuminate a pen 18x20 quite efficiently.

Since lighting is essentially a feeding practice it will be seen that it must be very regular and never failing. This has led to the use of several automatic devices being invented, to turn the lights on and off. This is practical only where electric lights are available. Many large plants use a time switch. This is an instrument designed to turn the lights on and off automatically. While the original cost is rather high it is doubtless a good investment on a large plant where many birds are being kept. We have, however, many simple home-made devices which rank with equal satisfaction and at a much less cost. These usually consist of alarm clock attachments. Possibly the simplest is an ordinary tumble switch set out from the wall. The alarm clock is then placed so the winding stem in turning throws the switch over. I have seen several modifications of this same idea

Distributing Liquid Manure.

A prosperous farmer who owned two hundred acres of valuable land also maintained a large herd of dairy cattle. The barns were carefully cared for, and all refuse was collected in a manure pit.

One end of the pit contained a sump in which the liquids ran. Since this liquid represented the most valuable part of the manure it was hauled out onto the fields as fast as it accumulated.

But so much time was consumed when disposing of it in the usual manner that a more economical means was sought. The farm owner had a two-ton truck, which was a sort of a general-purpose conveyance. It was decided to equip this with a tank and, by means of the exhaust gases from the engine, spray the liquids over the fields.

The tank held three hundred gallons. A faucet six-eighths of an inch

but they are all relatively simple, inexpensive and reliable. Any one who has a mechanical turn of mind and a genius for invention can easily fix up a home-made device at a very small cost.

EARLY BREAKFAST OR LATE SUPPER. Poultrymen are employing several systems of illumination which might be summarized as follows:

1. Morning light.
2. Evening light.
3. Combination of morning and evening light.
4. Night lunch method.

These possibly explain themselves. Where morning light is used the lights are turned on about 4.00 a.m. and off at daylight. This system has an advantage where electric lights are used. No dimming device is required as is necessary with evening lights. Feed and water can be put in the pens the night before and the attendant gets away from late hours at work. This system has a strong appeal to the bird man whose interests in the evenings are not in the chicken coop.

The evening light is often used where gasoline lanterns are used. The lights are put in at dusk and allowed to stay on until 8.30 or 9.00 p.m. A dimming device is necessary with this system in order to get the birds to roost. With lanterns this is accomplished by gradually turning down the light.

A combination system is commonly used by farmers who make a practice of turning the lights on in the morning when going to do their chores, and again in the evening.

The night lunch system consists of allowing the birds to go to roost as usual and putting the lights on about 8.00 o'clock for an hour while the birds are given a feed of scratch feed. This system is most economical on fuel, the lights being on but for a short time.

It is considered that a fourteen-hour day is possibly the correct length of lighting. We would not recommend using lights in excess of that amount.

FEEDING BIRDS UNDER LIGHTS. Birds under lights must be fed more than they otherwise would and must be kept on a constant diet. The birds are in heavier production and are exposed to just as much severe weather. The grain ration should be increased. Fourteen pounds of grain per day to each 100 hens would not be too much. This should be given in four feeds.

The common practice where morning lights are being used is to feed the birds before for morning. Grain is fed again at 8.00 o'clock, right after dinner, and again before the birds go to roost. The last feeding should be the heaviest, with a liberal feeding in the morning. If the birds do not consume large amounts of grain they are sure to lose in weight and go to pieces in the spring. A dry mash is kept before the birds at all times. It is advisable to increase the corn content ten per cent. to aid in maintaining body weight. The common practice where evening light is being used is to feed three times a day on grain. In the morning about three pounds; at noon about two pounds; and at dusk about three pounds per hundred birds. Then when the lights are turned on a feeding of about six pounds.

In addition to the above methods, care must be taken to keep a supply of clean water before the birds at all times. This is sometimes difficult in mornings when the water freezes over night. If there is snow on the ground dump the water in the evening and fill the dishes with snow. This will give very good results until water can be supplied a little later in the morning. Do not neglect the green feed and oyster shell.

LIGHTS IN SPRING.

Many persons using lights have had an unhappy ending to a productive winter by turning the lights off too suddenly in the spring. Any sudden change must be avoided and we usually take from two to three weeks to complete the change, cutting them down gradually a few minutes each day. This should be done about April 15. We plan on having the lights off by May 1. The early and late feeding must be continued even after the lights are turned off.

In diameter was attached to the outlet. The exhaust pipe was continued back of the muffler, and it terminated just beneath the rear end of the tank. Fifty cents paid for a heavy galvanized iron dustpan of suitable type. This was soldered on the pipe and the seal also soldered, so that the exhaust would emerge and spread far wide across the upper side of the dustpan.

A short piece of hose was attached to the faucet and brought to within two inches of this outlet. After reaching the field, the driver set the faucet to discharge the proper quantity, then went on over the field, the exhaust throwing the liquid over an area from six to fifteen feet wide, depending upon the rate of discharge.

The great problem is to learn how to gain wealth honestly and efficiently and to distribute it justly while, at the same time, we continue to live together as neighbors.

Storehouse or Junk Heap.

A farmer friend of mine broke a better for me if given some feeding. Plants that are kept in pots year after year, like ferns and begonias, will require constant feeding, as well as re-potting now and then. It is better to keep up liberal feeding than to report on. Repotting will always check the plant some, provided it has not become so crowded for root room that it is already checked. I have known ferns to be kept growing well, with very little soil left in the pans, just by feeding regularly and well.

I never feed a weak plant or a sick one. A plant should be healthy and growing normally if feeding will benefit it, and a weak plant is likely to be killed outright by even a light dose of plant food. Neither do I feed plants when the soil is dry. The strength of the solution should be weak at first and gradually increased, while an application once in two weeks at first may be increased to weekly, and with heavy feeders even to twice a week.

For mixing into the soil, bone meal is a safe fertilizer. Most of the prepared plant foods have it as a base. Nitrate of soda and ammonia are good nitrogen carriers, and will make the foliage luxuriant and a deeper color. Too much nitrogen is likely to give foliage at the expense of flowers, and to dull the colors of some of the foliage plants. Bone meal is rich in phosphorus, and has some nitrogen.

English farmers learned during the war that sulphate of ammonia, of which the country had been exporting thousands of tons, was good for increasing crop production. Now they are using 230 per cent. more of this product than before the great conflict.

I find a six-inch rule the handiest thing in sewing, to turn hems, to measure widths in seams.—M. R. M.

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How I Feed Plants.

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Home Education

"The Child's First School is the Family"—Freud.

Correcting Faults—By Edith Lochridge Reid.

Many a well-meaning mother is laboring under a false idea of what really constitutes a training in right habits and proper attitudes in her child. Often she thinks she is correcting a fault when in reality she is only nagging at the child, or at best shouting very wildly around the mark.

Here is Edward. He is careless with his napkin. "I've been trying for six months to get him to fold it and put it in the ring," his mother observed, as we were clearing the table; "but he does it only about one time in ten." Now Edward's mother was actually sincere in her remark. Imagine! By her own admission she had struggled six months on the one little point of discipline. At the next meal I watched Edward. It was noon and before he was quite through his lunch his boy chum rang the doorbell and Edward dropped everything and dashed to school, of course, without folding his napkin. At dinner that night, we were going for a ride and everyone hurried, Edward included, and no one paid any attention whether he folded his napkin or not. Without elaborating any further, you mothers get the point. It would have taken perhaps a week of time and patience to sit right there at the table and keep an active boy right there also until he had learned to fold his napkin automatically. Anything worth while

takes time, but very few points in children's discipline require six months if properly handled. If we make a child do a thing himself one time in ten, and then do it for him the other nine times, it is absolutely every wasted all around, just like sewing the new patch on the old garment which is too thin and worn to hold the stitches.

Training children is like a business proposition: we get just what we go after. If we invest patience, time and thought in the task of correcting a child's habits the results are inevitably successful. It isn't always easy, nothing worth while is; but a week spent in correcting a fault takes less attention and energy than nagging for months with no definite object achieved after all.

Another point is very important in correcting faults. Be very sure the fault is a real one, that it bears directly on character training. If it is not one on which you are willing to expend time and patience to correct, then why mention it at all? But if a habit is really annoying and one that will prove embarrassing to the child and his friends through his life, then attack it at once and definitely and finally uproot it. Concentrate on that one thing until you and the child have conquered it, and never again will you have that particular trial to meet.

then there was a terrible 'bang.' I ran as fast as I could and hid in some bushes. In a few minutes I peeked out. What I saw I shall never forget! Mrs. Rolly Rabbit's hind foot hanging out of his big pocket. That was the last I saw of her."

I Fooled Dad.

My dad doesn't believe in bothering with accounts, but he comes to me time and again and asks how we are coming with this cattle deal and that crop. I'm for accounts, and exacting ones, all the time.

Because we keep accounts we know the cheaper method of fattening our calves. We know the cost of hired labor at harvest of each crop. We don't need to gamble and wait for high markets, for we sell when our cost figures are covered by a fair margin of profit in the market.

We've learned what crops in different fields pay more for the fertilizing costs, and why. Labor and time expended are all figured out. Not a sale or purchase is made but is entered in the right departmental column. My account of Mother's chick incubation and final sale was proof that when she thought she was making big profit she was barely covering costs. Accounts showed that her vegetable sales were bringing her big profit. She added acres on both sides of her vegetable patches and made lettuce her star seller and profit winner.

I've proved to Father that one big truck of high horsepower did more service and cost less in upkeep than the two small trucks we had the year previous, figuring cost, repair, and gasoline.

All these little accounts mean more intelligent farming, with a complete knowledge of all branches of farm cost. The savings made have paid for my typewriter, book supplies, and many farm improvements, and have made farming 100 per cent. more interesting to me.—I. S.

Sods for the Pigs.

Before it freezes up store a wagon load or two of good, tough, green sods away in the barn cellar, pit or shed. Such will be very useful to toss into the pig pens now and again during the winter months. The pigs need mineral matter and this is an easy, cheap and efficient way to give it to them.



Would Craze Him No Doubt.

Wife (in humor for fun): "How do you like my new Egyptian vase effect dress?" Of course, it's guaranteed not to crack nor craze."

Hubby: "Went crack nor craze, eh? It'll craze me to pay for it. I don't doubt."

Democracy loses much through its apathy toward experts.

Co-operatives can weather the storms when founded on the rock of fidelity, but not on the sands of distrust.

Whatever progress is made in our rural program will come largely the result of education and organization.

There are said to be 3,424 spoken languages and dialects in the world, of which America has 1,624, Asia 937, Europe 587, and Africa 276.

CANADA'S DAIRY TRIUMPH

For some time Canada has been steadily climbing to dairy eminence, rising step by step, through improvement of stock, until for three successive times she produced a world's champion cow. Such superb stock has been developed all over the Dominion within the brief period of time since the Dominion turned her attention seriously to dairy cattle, that it has occasioned a demand from many parts of the world, and is yearly exported on a substantial scale. Nothing, however, has so summed up Canada's position of eminence in the dairy field as her triumph at the National Dairy Show held recently at Syracuse, New York.

At this show the best dairy cattle that could be procured in Eastern Canada came into competition with the superior herds of all the states of the Union and a greater aggregate of cattle than has ever been drawn together in a similar event on the continent. A total of 1,329 dairy cattle were entered, and when it is realized that in many cases only one animal was entered by one breeder, it will be seen that the pick of the herds of America were present to compete for honors. For the purpose of the show the provinces of Canada were given the standing of states, and Ontario and Quebec had its "state herds" in the competitions.

THREE STATE HERD AWARDS.

The results of the competitions were unprecedented, and gratifying to the fullest extent from Canada's point of view. In addition to carrying off a goodly number of first and seconds and other prizes in the various classes, Canadian herds won the junior championship for bulls in Holsteins, and the senior and grand championship in the female section for Ayrshires.

The state herd award for Holsteins went to the collection of animals of that breed representing Ontario. The similar award for Jerseys also went to the Province of Ontario. The best Ayrshire herd at the show was adjudged to be that from the Province of Quebec. Thus the premier honors in the three great dairy breeds were brought home to Canada. This was a very remarkable performance as not more than two animals from any one herd can be shown in these classes, and probably indicate more than anything else the average quality of the pure-bred dairy herds in Canada, and the showing leads to the conclusion that the average quality of Canadian pure-bred herds excels that of the average quality of the herds in the United States.

Altogether in the three classes in which it entered Canada won away sixty-three high awards, sixteen for Holsteins, twenty-one for Jerseys, and twenty-six for Ayrshires,