

Our Poultry Corner

If you have some things you do not understand in connection with your poultry and want some information, state your case briefly and to the point, writing on one side of paper only, and address it to THE MONITOR PUBLISHING COMPANY LIMITED, we will submit it to Prof. Landry, and when his answers are received we will publish them withholding your name if you desire it.

WHY DON'T HENS LAY?

If there is any one question which is asked more than any other it is, "Why don't hens lay?" and it is my intention to tell you some of the reasons why they don't.

In the first place, let us consider the breeding of the birds. There are many varieties and breeds, all of which have good producing strains and poor producing strains. Now, if these birds have come from a strain which has been bred more for fancy purposes, for feathers, than for utility purposes, or the production of eggs, it stands to reason that all the attention was given to the fancy, and none or practically none, to the other. And everyone knows that to get a good producing strain, we must give considerable time and thought to the selection of breeders.

Now let us consider the time of hatching. If the birds were hatched out late, say from the last of June on, unless they had the very best of care, they would not begin to lay before cold weather set in. You might have a flock of pullets which had developed well and which looked fine, but they probably would not begin to lay in cold weather. Pullets should begin to lay by the early part of November, anyway in order to be well under way before real cold weather begins.

Feeding is the next important factor to be considered. Regardless of the breeding of the parent stock, if the stock hasn't been well fed and cared for, it cannot lay. If the chicks have not been supplied with sufficient green food, a variety of foods, bone-forming material, good clean water in clean containers, clean hard grain, and plenty of shade, then they will have been neglected and egg production.

Housing is another factor which causes trouble. If the poultry house is cold, or damp, or nasty, or dark, or drafty, the hens cannot lay as they should. If the hens are crowded they cannot have sufficient room for exercise. The stronger birds will crowd the weaker ones from the food, eggs are liable to be broken if the nests are crowded, and the habit of egg-eating contracted, which, when once established is hard to break. They cannot get sufficient fresh air, the air becomes foul, the spread of disease is more rapid, and the general health of the fowl is affected. It is felt first in the egg production.

Since the foregoing are some of the reasons why hens do not lay, perhaps it would be well to point out some of the reasons why hens do lay. First, let us consider the breeding. If a person has, by constant selection of his stock, obtained a strain of fowls which are good producers, one ought to get a cockerel from that person to use with his own stock. From his own stock, select those pullets and hand those which begin to lay in October, or early in November, and then breed from them. If you wish to breed from yearling hens, breed only from those which molt late, even though they lay but few eggs the winter that you select them. Select a cockerel which is a good, vigorous, healthy bird, one that has never been sick, one which crows loud and often, and a fighter.

Feeding is next. From the very first the chick wants to be kept growing. There must not be any period in the life when it was stunted. The first feed should be given at 36 to 48 hours old, and should be sour milk. Feed the chick a variety of good, sound grains, give it plenty of range, with some shade, plenty of fresh water, and dry, clean quarters, and it will grow well. Give it grit, shell, ground bone and some meat scraps.

The brooding of the chick, especially when small, is a problem. For us in this climate, the open-front house of the Aubry type is very good. The coal-burning brooder is probably the best method yet devised for the brooding of the chick. It gives the heat to the chicks on their backs, there is no tendency to crowd toward the centre, there is a constant supply of fresh air under the hover, which is so essential, and there are different gradations of heat to which the chick can adapt himself. The house should be kept scrupulously clean and free from lice, as cleanliness is essential to the production of eggs.

The poultry should be housed early in the fall, in September, so as to get them used to their winter quarters, and also to teach them to scratch for their food, which exercise is a benefit in helping to develop the egg-laying organs. The birds should be housed in quarters facing the south, if possible, having no drafts and so ventilated that there shall not be frost in the interior. They should have at least four square feet floor

space, and six to eight inches roosting space per bird. In conclusion, would say that if the poultryman is familiar with the conditions which affect the egg production, he will be able to answer for himself, the question, "Why don't my hens lay?"

A. W. RICHARDSON,
Instructor in Animal Industry,
Poultry Division, Maine.

HATCHING AND RAISING CHICKENS BY AN ARTIFICIAL METHOD

We have always kept a few hens to supply our own table with eggs and poultry, and have observed that the usual custom is to raise what chickens are necessary to get the pullets one needs for the coming year, killing off the cockerels as soon as large enough for broilers. This way of doing business is not very profitable, from our view-point, as the cost of the day-old chick, together with the loss and feed necessary to get them to the broiler stage, leaves little margin for labor expended.

We resolved to begin our operations with a different idea in view, namely keeping hens as other have kept turkeys, wintering only what hens were necessary for breeding stock, raising the cockerels and pullets to maturity and marketing the former when roosters bring a high price, and selling the pullets for egg producers in the early fall. We have tried this method for several years, and proved to our satisfaction that for labor and capital expended it is extremely profitable.

We began the year with 23 fancy White Wyandotte hens and two large vigorous cockerels, choosing this breed because of their prolific laying qualities, as well as attractive appearance when dressed—yellow legs and skin and no dark pinfeathers. Our particular strain is also valuable on account of size, pullets weighing as high as nine pounds and cockerels 11 pounds.

The 244-egg incubator was started February 19 and kept in operation until May 15, giving us 600 strong healthy chicks, a little over 60% hatch. Of this number we sold 328 as day-old chicks at 15 cents each, and of the remaining 280 we raised to maturity 247, or 88% of the original number. The chicks were put into outdoor brooders.

Feeding the Baby Chicks

The first food given when 24 to 34 hours old, was bread crumbs moistened with milk and was continued, one feed a day, during the first week. Fine grit and wheat bran were kept before them from the first, and they were given as much chick feed as they would eat up clean three times a day. Once daily for three weeks we fed hard-boiled egg, shell and all, mixed with pinhead oatmeal. Caution should be used in feeding the egg. One egg for 25 chicks at first is all we have found safe to give them.

After three weeks old they were fed three times daily, gradually changing from chick feed to fine whole grains and a liberal proportion of cracked corn, with bran and growing feed constantly before them. This was their diet until maturity, the only change being that the grain was given in two feeds instead of three when about six weeks of age. At that time they were taken from the brooders, having been gradually accustomed to go without heat, and placed in a building 14 feet square, which was their shelter at night during the summer.

In this building we placed a large dry feed hopper which holds 250 pounds, and we have seen our 250 chicks empty it in one week. This box was not allowed to stay empty, as plenty of food is necessary for good growth. The chickens were allowed the free range of an orchard of about five acres, which contained a stream of running water. We find it quite simple to feed poultry on free range, as they can pick up the necessary elements for a balanced ration.

The Cockerels Specially Fattened. Some time before marketing the cockerels were confined in movable runs and fed especially fattening ration, together with milk, until they were large enough to dress 6½ lbs on the average. All the pullets we did not need for breeding stock the next year were ready to lay in October and sold for 30 cents a pound live weight.

Itemized account for the year is as follows:
Expenses.—Grain, \$168.55; eggs for hatching to introduce new blood, \$20; kerosene, \$5; total \$193.55.
Receipts.—119 dressed cockerels, \$164.02; seven breeding cockerels, \$28; 76 pullets, \$109.22; 220 day-old chicks,

IT'S TIME

you sent some more Zam-Buk to your soldier friend. The men at the front are asking for it. They say there is nothing to equal Zam-Buk for the many little accidents incidental to a soldier's life; nothing ends pain and draws out inflammation so quickly.

When an injury is sustained, if the wound is neglected and left exposed to germs, festering is liable to follow, so that even a very minor injury, neglected, may have serious consequences. If, however, a soldier has a box of Zam-Buk in his pocket, to apply at the right moment, much unnecessary suffering can be avoided.

See to it, therefore, that your soldier friend is kept supplied with Zam-Buk. Remember, too, Zam-Buk is just as useful in the home! All druggists 50c., or Zam-Buk Co., Toronto, for price.



\$48; dressed fowls, \$21.69; eggs \$72.78; increase of value of stock on hand, \$70.00; total, \$513.71; profit for year, \$320.16, or \$12.80 per head.

A Few Lessons From Experience

Eggs should not be kept over 10 days before incubating. Brooders and henhouses should be sprayed and then fumigated with sulphur.

Chicks must be hatched early and rapid growth promoted, in order that cockerels may dress over five pounds in August and September, when the prices are highest.

Feed breeding stock plenty of green food of some kind so that we may have fertile eggs.—A. E. Shelburne in N. E. F. & H.

BEST RESULTS WITH THE SITTING HEN

Once During Each Twenty-four Hours an Opportunity to Eat, Drink, Dust, the Broody Hen Should be Given Exercise, Relieve and Rest Herself From the Strain of Long Sitting.

(By Otto E. Hackman, Fort Wayne, Ind.)

The natural method of incubation still seems to be the only method of hatching chicks on many poultry farms to-day. On large poultry plants, as well as on city lots, the hen is depended upon to get out the season's crop of chicks. Those poultry keepers who have given time and thought to the subject of natural incubation, as a usual thing are rewarded with satisfactory results, while others seemingly are never able to do well in handling a broody hen.

Really, a great deal depends upon the individual who sets the hen, and more upon the way the hen is set than many care to believe. That there is a right and a wrong way to set a hen is not often taken into consideration by unthinking poultry keepers. Any "old way" or place, regardless of the hen's comfort or convenience is not conducive to good results in hatching.

For best results the sitting hen should be removed from the distraction and activity of the laying and breeding pens and all other conditions should be made as favorable for her period of quiet as possible. Have the nests for hatching in a quiet secluded place with a suitable yard for exercise attached. The nest boxes should be of medium size, American varieties requiring a nest about fifteen in square and the same number of in high. The front of the nest, however, should not be of the same height as the sides and the back. The front should be open, excepting a space of five inches high at the bottom of the nest, where a board of that height is nailed across the front for the purpose of keeping the nest and its contents intact. The top of the nest should be covered, though it is not advisable to have it nailed down. A great many times it will be found convenient to lift the hen from the nest through the top of the nest, for sometimes in removing her from the front opening eggs are pulled out with her and broken. The top may be hinged, hooked down, or weighted to hold it in place.

If the broody is trustworthy the front may remain open for the hen to leave and enter at will, but in case she is not to be trusted, this same method may be employed at certain intervals, during the day, taking care not to leave the front open for any great length of time. The hen should never be allowed to leave the nest or enter it by means of the top opening, except when removed by the poultryman, because of her liability to break the eggs by jumping down upon them. After selecting the location and the nest for the broody, cover the bottom of the nest with several thicknesses of paper to prevent drafts from entering through cracks in bottom of nest. Then cut a piece of sod just a little larger than the inside dimensions of the nest box, and place in the bottom of the nest with the grass side down. The corners and outer edges of the

sod should be filled under with fine straw or other nesting material, to give the nest a slightly concave shape. This slight hollow in the centre will have a tendency to keep the eggs together and prevent their rolling out and becoming chilled. The hollow should not be so deep, however, that the eggs will bunch up in the centre. Have it in such shape that the eggs will stay together nicely and at the same time may be shifted around easily. Fill in with some soft material that packs down well.

A good hatch often depends upon the number of eggs placed in the nest. Fifteen eggs are many times put under a hen, but I find that unless the hen is very large and the weather warm, that this is too many. If the hen cannot properly cover the eggs, those on the outer edge are constantly shifted about, all the eggs will be on the outer edge at some time during the hatch, and the entire hatch may be thus endangered. Some may think that because they have extra large hens, fifteen eggs will not be too many, but it is never advisable to use very large hens for sitting purposes, since they are almost invariably more or less awkward and clumsy on the nest. A medium sized hen if in good flesh and of good disposition, always gives the best results in hatching and rearing chicks.

When the weather is cold it is well to limit the number of eggs to eleven, but as the season advances and the weather becomes milder, the sitter may be given thirteen eggs with safety. During the hot summer months a hen may properly incubate fifteen eggs, for at that time there will be closely. Should any eggs become no need of keeping them covered broken during the hatch be sure to wash those soiled with tepid water immediately.

Early in the season it is advisable to set the broodies inside a building. The floor should be of earth if possible and it is well to loosen up the earth a bit that the hens may be able to dust themselves when off duty. This aids greatly in keeping down lice which in turn is quite essential in keeping broodies contented. Before being placed on the nest—and at least once before the hatch comes off, the hen should be well dusted with a good loose powder.

Give the broodies good wholesome grains. Soft food is not advisable during the sitting period. Any good grain is relished, but whole corn is preferable, as it aids most in maintaining bodily heat. Green food should be supplied and fresh water should be before the sitting hen at all times. Once during each twenty-four hours the broody hen should be given an opportunity to eat, drink, dust, exercise, relieve and rest herself from the strain of sitting for three weeks, (and sometimes six or more weeks), in practically one position. Give the sitting hen a chance and she will show you what she can do.

Eggs and Chicks

Barred Plymouth Rock. Beauty and Utility Strain—Winner of Best trophy at recent Amherst Fair on Barred Rocks. Mating pens made up of Amherst, Kentville and Yarmouth winners. Opportunity to get the finest stock in the Province. Eggs \$1.50 to \$3.00 per setting. Utility day-old chicks 17 cents each.

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Thomas A. Edison, at a dinner in Orange, insisted—as he has insisted from the start—that the Allies will beat the Germans in the end. "But, Germany," said a German-American, "is building ships at a tremendous rate. She will soon have her navy up to her army. Germany since the war began has added twelve Dreadnaughts and ten Cruisers to her fleet, you know!"

"Humph," said Mr. Edison. "If she keeps on at that rate she'll soon have to enlarge the Kiel Canal."

A lady of great beauty and attractiveness who was an ardent admirer of Ireland, (once crowned her praise of it at a party by saying: "I think I was meant for an Irish woman.")

"Madam," rejoined a witty son of Erin, who happened to be present, "thousands would back me in saying you were meant for an Irishman."—Tit Bits.

"One of the meanest men I ever knew was Misair. He smoked his cigars to the last half inch, chewed the stumps and used the ashes for snuff. Then he wasn't satisfied, and gave up smoking."

"What for?"

"He couldn't think of any way of utilizing the smoke."—Exchange.

"Anyhow, there's one advantage in having a wooden leg," said a certain veteran.

"What's that?" asked his friend.

"You can hold your socks up with 'thum' tacks."—

Horticulture

(By Prof. W. SAXBY BLAIR)

THE CONTROL OF POTATO DISEASES

It is a difficult matter to give an actual estimate of the annual losses for the Dominion, due to plant diseases affecting the potato crop. Judging from a considerable number of cases, the total loss must be enormous in some years particularly.

The loss from so-called "storage rot" amounted in some cases to 40 per cent. The yield, owing to the use of diseased seed, as far as can be judged from "misses" in the fields, has been occasionally reduced by some 30 per cent., and diseases affecting the growing plant may also cause considerable damage to the crop.

In order to prevent such loss and make the cultivation of potatoes more profitable, it is necessary to strictly follow certain lines laid down for the elimination of diseases, when it is reasonable to expect that the diseases will be eventually exterminated or reduced to a minimum. Any objections a farmer may have to carrying out the following suggestions will disappear when he finds from experience that their observance results in a greatly increased and higher profits to himself.

The Diseases of the Seed Tuber

1. The presence of the following diseases or insect pests, scheduled under the "Destructive Insect Pest Act" of the Dominion of Canada shall qualify any lot of potatoes for seed purposes, viz: Potato Canker, Powdery Scab and Potato Tuber Moth.

Potato Canker is not known at present in Canada.

Powdery Scab occurs in the Maritime Provinces; no cause of this disease has been observed west of the Province of Quebec. In order to prevent the dissemination of this disease, all potatoes grown in the "infested area" are being officially inspected and certified before shipment. All bags or other containers labelled "First Grade Potatoes" will contain inspected potatoes that were grown in the infested area, from seed not infected by powdery scab and on land that has not previously produced an infested crop. Only potatoes so certified may be safely used for seed.

The Potato Tuber Moth is not known to occur in Canada. Information concerning same may be secured by writing to the Dominion Entomologist, Department of Agriculture, Ottawa.

2. Potatoes entirely free from all diseases or blemishes are the ideal potatoes for seed purposes.

3. When selecting potatoes for planting, all bruised, decayed, externally diseased or unsound tubers should be removed.

4. Tubers showing Common Scab should, preferably, be all removed. The chances are that scabby seed will produce a scabby crop.

5. After the first two applications have been made, we continue spraying regularly, seed should be soaked in bags or bulk for three hours in a solution of bichloride of mercury, 1 part in 2,000 parts of water. After treatment, spread out and dry.

6. When dry, cutting the potatoes for "sets" will commence. Provide each person engaged with a potato knife, and keep a number of knives in a wooden pail containing a solution of 1:100 bichloride of mercury.

7. The stem end of the tuber is the seat of several internal diseases. Cut a thin slice off the stem end of each potato; if perfectly sound and free from brown streaks, rings or spots, continue cutting it up to required size.

8. Discard at once all tubers showing discoloration, when cut as above, at the stem end, and throw out those showing any kind of spotting inside, though the stem end itself may have shown no disease.

9. Having used the knife on a tuber showing any kind of discoloration inside, throw it at once into the disinfecting solution, and take out another knife before cutting up a new tuber. A knife that has cut through a diseased tuber conveys certain diseases to the new tuber, hence it is very important to change the knife after having thrown out a diseased tuber. It is waste of time to cut out brown spots and use the rest of the tuber.

Disease Infested Land

In the case of Powdery Scab and a number of other potato diseases, the casual organism persists in the soil for a number of years; it is, therefore, necessary to avoid too frequent succession of potato crops. Ordinarily potatoes should not be grown oftener on the same land than every fourth year. Where Powdery Scab has existed, it is advisable to change to land that has not previously produced a diseased crop of potatoes. The infested land may be used for any other crop with the exception of potatoes.

(To be continued.)

THE USE OF GROUND LIMESTONE

(Prof. Harlow.)

The soils of Nova Scotia, especially those in the Annapolis Valley, are deficient in decayed organic matter, and are decidedly acid. A soil may be very rich in plant food, nitrogen, potash and phosphoric acid, but if organic matter is lacking and acid present, very few of our staple crops will flourish. Under these conditions, ground limestone may be considered the key to the problem, as it destroys the acid and favors a luxuriant growth of legumes, as clover or vetches which, when plowed under or fed and returned to the soil as manure, give the organic matter.

Further, the amount of nitrogen in organic matter from different plants, varies a great deal. Two tons of clover hay per acre has 80 lbs. of nitrogen, or twice as much as timothy hay. More than this, practically all of this nitrogen the legumes get from the air, a feat performed by no other plant. 80 lbs. of nitrogen at 15c. per pound means \$12.00 taken from the air.

Well drained soils, with enough limestone or lime to destroy the acid will favor good, strong clover plants, which will live through the winter. While the limestone benefits the soil in other ways, this is the strong point in its favor.

8 tons of limestone applied to two acres of sandy soil at the Agricultural College Farm, Truro, gave 2.2 tons more clover hay than 2 acres unlimed. This at \$10.00 per ton would be worth \$22.00 with enough limestone left to keep the soil in good condition for at least five years. The extensive use of limestone depends upon the price. Limestone may be procured from private companies, as the one at Windsor, N. S.; by portable crushers owned privately, visiting the rock deposits of the various landowners, as in the Stewiacke Valley; or by Government owned portable crushers, grinding at cost at various centres, as in New Brunswick.

The chemistry Department of the Agricultural College, Truro, will determine the amount of limestone required per acre to put the soil in good condition. Write for directions for procuring samples.

THE CHEMICAL ANALYSIS OF SOIL

(Prof. Harlow.)

The plant gets seven of the ten important chemical elements from the soil. These are calcium, potassium, phosphorus, nitrogen, sulphur and magnesium. Since chemical analysis determines the amount of the various constituents, it is quite natural for one to say, "I'll get my soil analyzed and find out what fertilizer I must put on." And since such analysis is a slow expensive process, costing from \$20.00 to \$50.00 per sample, it is well to state the value of such analysis.

Generally, soil analysis is of value in forming an estimate of the plant food and characteristics of the soil on extensive areas, such as the Annapolis Valley. Samples are tested from the foot hills of the North Mountain, from the Valley itself and from the South Mountain area. The average of the samples from each area will give a general idea of the three types South Mountain soil, Valley soil, and North Mountain soil.

Locally, suppose a farmer wishes to grow timothy for three or four years. The soil is analyzed and found to contain .2% phosphoric acid, .3% potash and .2% nitrogen which are equal to 4000 pounds phosphoric acid, 6000 pounds potash and 4000 pounds nitrogen per acre, 6 inches deep. At the end of the season he finds only one ton of hay per acre containing eight pounds of phosphoric acid, 32 pounds of nitrogen and 19 pounds of potash. Why this failure when the analysis shows that there is plenty of food? The reason is that the plant food was not soluble and so could not be obtained by the plant.

The value of the analysis then is limited, because the methods used give approximately the total plant food, only a small part of which is dissolved during the growing season. In the second place, other factors such as lack of drainage, soil acids, may operate to overcome the effect of a good supply of plant food.

Chemical analysis, first, can give the total amount of plant food in the soil; second, can roughly give the amount which is available; third, can determine whether there is enough decaying organic matter; and fourth, the amount of lime needed for destroying the soil acids.

The chemistry department of the Agricultural College, Truro, is ready to test soils and give such information as may be of value. Write for directions for getting samples of any soils in which you may be interested.

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