THE EGG QUESTION SOLVED

BY

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The Egg Question Solved

By T. F. McGREW

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By GEO. E. HOWARD
WASHINGTON, D. C.
THE EGG QUESTION SOLVED

Fresh-Laid Eggs, Their Value and the Appliances Necessary to Gain the Profitable Egg Yield

At the present time no marketable article has equal demand with fresh-laid eggs in winter. If people could depend upon the quality, this same demand would continue throughout the entire year; and this might be if the freshness of the eggs could be guaranteed. But to open an egg of a hot summer morning and find it bad in quality would destroy the temper of a saint, and rob the most sturdy of his desire to eat. If all eggs could be stamped with the actual date of production, then fresh-laid eggs would double in value, while the others would be of but little worth. As it is, we must depend upon the word of the dealer, who is too often misled by those who furnish him with questionable products. Only the shell of the egg is between the producer and his honor; and if you can avoid it never allow the breaking of this shell to cast discredit upon the business.

Egg Producers

The question is continually being pressed as to which breed or variety is most profitable as egg producers. All who contemplate keeping hens for winter egg production seek this information. Those who have egg farms contend for their own selection; but the fact is, it is the best management of hens that secures the best results as egg producers. One poultryman keeps Buff Cochin fowls for producing winter eggs and succeeds admirably with them; and others who keep both Leghorns and Wyandottes get no eggs at all in winter.
The Egg Question Solved

Beyond all question, the best producing hens are those that are the best managed for the purpose intended. Fresh-laid eggs in winter are quite as unnatural a product as is the hothouse vegetable, and quite as difficult to have.

The Best Hens to Have

For winter layers select one-year-old hens and early-hatched pullets. If possible, keep the hens in flocks by themselves, and the pullets by themselves. Pullets that are hatched later than June first are not likely to be profitable as winter layers. We have known Leghorns to be hatched as late as the twentieth of June, and begin to lay regularly by the end of November—but this is an exception, not the rule. Well-kept, one-year-old hens can be made to lay quite as well as the pullets. Hens that are more than two years old do not lay as well and are seldom if ever profitable to keep as egg producers.

If eggs that have white shells are desired, select some one of the Mediterranean varieties. Some one of the American breeds or varieties will give the eggs with brown shells. As to the cost of keeping them, it is doubtful if it will exceed ten cents per head per year difference in any of them. The cost of sustaining a hen for a year averages from seventy cents to one dollar and fifty cents. This is governed by location and cost of food. In the West, where food is lower in price than elsewhere, of course, it costs less to sustain them; while in New England the cost of feeding will come close to the higher figure named above. At the same time, the salable product of the hen is higher in price at all times in the eastern part of the country than in the western.
1. Milk Pan for Young Chicks.  2. Feed Box.  3. Water Box.  4. Feed Box.
The Egg Question Solved

The request has been made to name the breed or variety most profitable as egg producers. This is practically impossible; for the fact is, having fresh-laid eggs in winter must be credited three-fourths to those who care for the hens—the other fourth to the hens.

When equally good management is bestowed on all kinds of fowls for egg producing only, the Leghorn hen will produce the largest number of eggs at the least cost per dozen. But it must be remembered that at the same time her carcass as market poultry has the least value. For general purpose fowls, the American breeds go to the front. In classing them, the Mediterranean fowls would be called the egg producers, the American breeds the general purpose, and the Asiatics the meat-producing fowls. All of these have valuable positions in poultry life, and neither can supplant the other in its particular line; nor could the best results come from poultry keeping without them all.

To Make Hens Lay

The fact is, to have any number of fresh-laid eggs in the winter, the hens must be actually compelled to lay them—for they will not lay them ordinarily. It is not natural for them to lay in winter simply because conditions are not conducive to a full egg yield. There are several reasons for this the most apparent of which is declining or dying Nature, which deprives the hen of seeds, green foods, insect life, and the natural warmth of summer; for all of which substitutes must be supplied that will not only take their place but so invigorate the hen as to overcome the natural influences.

These being the conditions that govern, some set rule that will make the egg production not only possible but a forced condition with the hen must be followed. By
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so feeding, the one managing the hen can make it practically impossible for her not to lay in response to the treatment given. To do this is simple, if followed to the letter—yet it is quite as easy to fail. The whole process must be applied, for if any part is neglected the result will not be profitable. Like the works of a watch, if one wheel is missing nothing goes right. If proper attention, however, is paid to all the simple details good results will follow.

Proper Housing Necessary

It is absolutely necessary to have comfortable quarters for hens that are expected to give a winter egg yield. Their houses must be as dry and warm as it is possible to have them in winter. Absolute freedom from dampness is of vital importance. When building, it is well to bear this in mind and have an eye to this important feature, and equally important is proper ventilation. Do not get the erroneous idea that fresh air should be kept out of the henhouse. Let it come into the houses at all times, except when it is so cold as to freeze their combs and wattles; and when cold enough for that the houses should be closed as tightly as possible. But when the temperature is not below 25 degrees the windows should be opened so as to let in plenty of air; but avoid draughts. At night close the windows. This free circulation of air prevents dampness.

When it rains or snows, or when the wind blows, have muslin screens to put into the open windows to prevent these disturbing elements from coming into the houses. Through these screens the air will get in and thus benefit the flock. When building houses for the hens it is well to have a loft overhead that may be filled with straw,
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and the dampness from within will pass through the openings that should be left in the floor of this loft and into the straw, which will absorb the moisture and thus dry the air. Small doors should be provided in each end of the house above the straw level—these to be opened when the weather is moderate so that a circulation of air will dry the straw and prepare it for gathering more moisture when the house is closed.

When the ground about the houses is damp elevate the houses and dig dry wells under the floors down into gravel or sand under-soil—deep enough to have under drainage. Fill these dry wells with stone, and over this gravel and sand. Build either a stone, brick or log foundation under the house so as to fill in a foot or more above the level of the ground, and thus turn the damp and wet away from the house. If this method is followed dry dirt floors may be maintained, otherwise the floors would be quite damp. Cement floors, when properly constructed are even better than the dirt floors.

Cement Floors

The building or laying of cement floors demands care in construction. Dig out the ground four feet deep, and have the excavation, at least three feet wider and longer than your building will be. Fill in with broken stone, old brick and coarse gravel to within eighteen inches of the top. On this put six inches of dry soil or sand—packed as closely as possible—and cover with six inches of coal cinders, moisten and pack firmly and closely with a setting mall or tamper. On top of this put six inches of stone concrete, to be made of three barrels of sand, six barrels of broken stone, and one barrel of Portland cement, which pack as closely as possible with the
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tamper. This will bring the cement to the surface, which is to be smoothed over nicely with the bottom of a shovel, so as to have it nice and level for the floor when dry. This will make a splendid cement floor which is cheap and lasting. By having this somewhat longer and wider than the house is or will be, you can set the house on the cement and insure against both moisture and vermin.

Dirt or Sand Floors

No matter whether you have board, cement, or ground floors to your henhouses, they should be covered during the winter months with six or eight inches of dry soil or sand, which provides dry earth for the hens to dig in. Over this should go a covering of dry straw for the hens to dig amongst for food and exercise—both of which are of vital importance—the food for sustenance and the hunting and digging to invigorate the hen and induce a profitable egg yield. As previously stated, the larger portion of the egg yield in winter may be credited to proper care; and quite a considerable part of this care consists in keeping the hens busy, contented and out of mischief. When busy and contented they will not acquire such bad habits as egg eating and feather pulling—both of which should be classed as idle habits, and neither of which will they acquire when kept constantly employed.
GENERAL MANAGEMENT

How to Select and Grade for Best Results

To Succeed with Poultry.—There are but two barriers to success in poultry raising. One of these is lack of knowledge regarding poultry, and the other carelessness or an utter disregard as to the few absolute necessities requisite for success.

If it were possible to have the entire farming community pay even reasonable attention to poultry raising there would be an almost inexhaustible food supply of the very best character within the reach of all, and the cost of production would be so reduced as to return a far greater profit than can possibly be made from any other live stock. To this should be added the proposition of selling the products of poultry when most profitable to do so. It is the custom to hold and grow to maturity the greater part of all the chicks hatched, when many of them should be sold at the broiler size—at which age quite as much may be realized per head as is usually obtained for full-grown stock. If the rule of feeding that will prepare the young stock for the spit at one pound or over in weight be followed it would be fit for market at all times—and well-flavored broilers bring the best price of all kinds of poultry, if ready to sell early in the season. The early broiler is the most valuable of all poultry prior to June first, provided it is plump and well flavored.

It is never too early to prepare for the next breeding season. The selection of the best hens for breeding stock should always be borne in mind, and the sooner hens of poor quality are discarded from the flock the
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better progress will be made. Consider one point for or against the improvement of the egg yield in the pullets raised next season. If no consideration is given to selecting the hens that are to produce these pullets more than likely the greater part of the eggs used for hatching will be from hens that have failed to lay all winter. Such hens are most likely to begin laying about the time for hatching our spring chicks. 'If no forethought is used in this direction, we are quite apt to go on growing a lot of hens that have no hereditary tendency for winter laying.

To Have Winter Layers.—If winter layers of the best quality are desired for the mothers of such pullets, hens that have proved themselves prolific layers both as pullets and as hens must be selected. The use of hens for this purpose is advised because the most vigorous chicks will come from well-matured hens possessing constitutional vigor. Know the very best laying pullets of the flock, and band them for future use. Of these, all that do well as hens and continue to lay well should be set apart to produce the pullets of the coming season. Of all these hens the very best should be selected to produce the early cockerels which should be raised for breeders another year. This care in selecting is based upon the egg yield alone and their producing pullets that will be prolific layers.

When high quality exhibition stock is the aim, then select as breeding hens those that combine proper size, shape and exhibition qualities. Have all these requirements in the highest degree. Size, shape, and exhibition quality should govern absolutely their selection. They may not lay an egg during the entire winter; but if so, they will maintain their ability for the production of eggs for hatching in the spring. A few eggs
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from such hens have more value during the hatching season than have a hundred laid by them and sold in market. This distinction is a guide in the selection of hens for the purpose desired. When it is intended to grow pullets for egg producers, select the prolific egg-producers to lay the eggs from which to hatch them and it is equally important when it is purposed to grow exhibition stock of quality, to select the very best exhibition hens to produce them.

As the winter goes on, select from the flock the hens that will meet the demand for producing that which is wanted, whether for egg-producers or exhibition. Select the hens that are to be used for breeders, pen them alone or with the males to go with them, and feed them rather sparingly, so as to keep them in good condition without stimulating for egg-production. The fewer eggs these hens lay until they are wanted for hatching, the more vitality will they have to impart to the eggs that are to produce the chicks. The best layers having been selected when pullets, are marked with leg-bands. All that is necessary to know is that the best of them continue to lay well as hens; then select and pen them separately, and allow them to rest without being fed for a large egg yield.

To Grow Standard-Bred Stock.—The high quality exhibition hens being selected for their quality alone, it is only necessary to pen them alone and away from other hens, and allow with them only males of their own kind and of equal quality. All those selected for breeding should be made rugged by having free access to the open air either in open scratching-sheds, runways, or yards. They should have plenty of exercise, and be so fed as to keep them in good, moderate condition—neither fat nor lean—but in fairly good condition all the time, so that
when the eggs are wanted for hatching, it will be necessary only to feed for eggs to have them. By paying attention to this line of selecting you are laying the foundation for success in hatching when the time comes for this work.

The more care given the laying stock, to keep it warm and sheltered from the storms, the better will be the winter egg yield. For breeding stock, the very opposite is the best. Make them strong and vigorous from a reasonable amount of exposure. Allow them to go out at all times—unless snow or rain is falling, then confine them to the henhouses and covered sheds. House them comfortably at night; and never allow the frost or cold to cut their combs or wattles.

Well Considered Plans.—Planning ahead if properly done is of great value in the future. It is impossible to begin too early to plan for the morrow. It is well to begin in the fall and get ready for spring. Plan ahead. Keep your work ahead, and never get behind. That is the way to succeed in keeping fowls. Make all preparations to begin spring hatching in March and April. Do not delay until then to get ready. Get ready in time so as to have the chicks hatched during the last of March and all through April, and have plenty of early hatched pullets for the coming winter. The early hatched chicks outgrow, outlay, and outweigh any and all later hatched chicks.

Chicks that are hatched after June 10, seldom, if ever, are of much value for winter layers or for exhibition stock. Fall is here before they are fully matured, which retards their growth; and but few of the late hatched pullets will lay before March or April. Plan against having the late hatched chicks, and avoid the necessity of having them by hatching all you will need prior to the
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coming of June. Make ready for having a full complement of young chicks. Get them all out early, prior to June first, if possible. Have more than ever before; and learn to cull them closely as soon as they are large enough to show undesirable qualities. Grow them fast, feed them strong, so as to have them in the finest broiler condition, from a pound to a pound and a quarter. Sell all the undesirable ones at this size for broilers, and make room for those of better quality.

If all these points are considered and plans in advance are taken to carry them out, a long step forward toward better results the coming breeding season will be made. All of this may be readily carried out with but little additional trouble. In fact, it takes almost as much time to tell of it as it would to put it into operation. Planning the work and a knowledge of the fowls are the most important factors. The actual labor of selecting, mating, and caring for the breeding stock until it is time to begin hatching is the most trifling part of all. What is most needed is careful attention to the stock so as to have it in the best condition for future work.
CARE AND FEEDING

Methods That Must Be Observed to Succeed

The Value of Litter

Next in value to proper feeding is the exercise that laying hens must have in winter. This exercise is an absolute necessity, and without it the hens will not be profitable as winter layers. Too much value can not be given to this. The natural exercise for the hen is scratching and digging for her feed; and means must be provided to keep her hunting and scratching as much as possible for her food. It has been demonstrated how to prepare the floors and houses to have them dry and healthy, and the covering of the floors with dry soil or sand so as to have a good foundation for the litter, which will provide the exercise for the hens has been advised.

Fresh, dry straw should be scattered over the floor so as to have a covering of it at least a foot deep. Do not be afraid of having it too deep—just so the hens can move it about when scratching for grain is the only limit. What is wanted is a deep covering over the dry sand or soil of the straw so that when small grains are thrown into it the hens will be kept busy all day hunting, digging, and scratching for the grain. If the floors are perfectly dry the straw will last a long time. The dry earth or sand will provide a dust bath for the hens; and the dust they raise in digging and hunting will settle all about and destroy the hen lice that come in contact with it. Lice can not live where there is a settling of very fine dust. When you go into the henhouse and hear the hens singing, and see them hunting and digging and a cloud of dust flying, you may feel assured that the floors
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are dry and the hens happy and contented, and in a fair way for a good egg production.

How to Feed

The feeding of laying hens in winter so as to force a profitable egg yield is almost an art. All may be successful if they will follow closely the rules of regularity, promptness, and care—regularity as to time, promptness in seeing every demand or change required, and care and judgment in providing for their wants. When the litter gets damp it is too heavy for the hens to scratch about. This should be removed, the floor nicely raked over and fresh straw provided. The grit box and water vessel should be constantly full; the houses and dropping boards kept clean; and the nests so located as to have them out of sight of the busy or idle hens, as it may be, so they will not be tempted to eat the eggs. “Out of sight, out of mind,” applies to hens, as they may be tempted into bad habits, which should be avoided as much as possible.

Every bit of grain food fed them should be scattered in the litter. Not one bit of it should go into troughs or on the bare ground floor. This way of feeding compels them to hunt and dig for the grain or else go hungry; and the exercise they get from this continual scratching for grain invigorates their systems, warms their blood, and induces an active egg production. For these reasons, how to feed and where to throw or scatter the grain are of much importance.

When to Feed

During the winter months hens should have their first or morning meal as early in the day as they can see to eat
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it. This should be of grain scattered in the litter the night before, after the hens have gone to roost; or if the morning is selected, the grain should be scattered for them by daylight, so they can begin to hunt and dig as soon as they come down from the roost. This will start the blood flowing and thus warm up the whole system. An hour or two later the water vessels may be filled—not with ice cold water, but with water a little warm. Hot water or feed is quite as bad as ice water, either or both of which create an unnatural condition which has its bad effect.

At noon they should be fed, again toward evening more grain should be scattered in the litter, and the last task for the day should be to close up the houses, and remove all water from the drinking vessels so they will not freeze. At noon feed the mash. Give them a fairly full feed of this. Noon is selected as the best time for the mash feed because it is an opportune time for the hens to rest, dig in the soil or sand, or bask in the sun—which they are more likely to do after a full feed of mash from the box or trough.

How Much to Feed

The average daily ration for a hen is about four ounces of all kinds of feed. Some will eat more, others less; but they should always have enough. And the only way to be sure of this is to study the demands of your flock, and meet these demands. Feed them enough, but not too much. Hens may be taught to run for food every time they see you, and at the same time be over-fed. This is habit, not hunger. For the evening meal they should have about two and one-half ounces of grain on an average. The amounts given are the best guides,
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but they are not absolute. Fowls will need more food on a very cold night than when it is warmer. Fowls in a close, warm house will consume less than will those in colder or more exposed quarters. All of these facts must be considered when deciding the question of quantity. With the above as your guide, and a lot of good common sense mixed in with care and judgment, you should be able to apportion the proper amount for each lot of hens.

What to Feed

The natural ration for the laying hen is seeds, grain, grass, and bugs or small insect life. From this, as she has it in the early spring and summer, she makes more eggs, finer appearing and larger eggs than she will in winter. This is because the insects, worms, and grasses furnish what might be called living foods for her use; and in these she has a plentiful supply of the most beneficial protein, which forms or provides the delicate albumen of the egg. Protein she must have or she can not complete the egg. So keep in mind at all times this demand of nature, which must be supplied continually or the egg supply will be scant.

To have a full egg supply in winter, the hen must, first of all, be provided with food to sustain her system throughout and to keep her warm; and the proper amount of the food must be assimilated through the system prior to her turning any of it into the yolk, white or albumen, the thinner lining of the shell or the shell of the egg itself. That there may be a full and equally distributed food supply which will provide for all these needs we mention the balanced ration. This means a food supply which will furnish just the proper
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amount of protein, carbohydrates, and other material necessary for all demands. If it were not that the same ration will not meet the demands of all fowls, this would be an easy task; but the fact is, scarcely any two demand identically the same ration at the same time. So we must do our best to approximate their several needs or demands by furnishing enough of each and all material required for the purpose desired.

Wheat, corn, meat, and clover hay may be so apportioned out to the hens as to form a splendid winter ration. To do this more meat must be fed when the corn dominates the ration than when more wheat is fed. Corn furnishes an excess of fat and but little protein, and lean meat will make up for this if fed with the corn. So we must consider all of our foods, and in using them for hens see to it that they do not have too much heating and fattening food when eggs are hoped for. If wanted for market then feed to develop plumpness and fat; if eggs are wanted feed for eggs.

The best mixture of grain for egg producing in winter is wheat, hulled oats, cracked corn, barley, and millet-seed. Of this mixture one-half should be wheat and hulled oats, and the other half equal quantity of cracked corn, barley and millet-seed. Wheat and oats make a fairly good egg producing ration alone. We say “hulled oats” because the hull of the oat is of no value as a food; in fact, it is injurious. Cracked corn is better than whole corn because it takes the hens longer to find it when thrown in the litter. The millet-seed is of value because the hens will dig and hunt for these bright little seeds and thereby obtain healthful exercise. A little buckwheat is good; so is any kind of grain that they will eat with the exception of rye. Don’t feed rye to hens. They do not care for it, and it is not good for them.
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Any grain or food which they will eat is beneficial to them if it will provide the proper elements to manufacture the eggs.

The Morning Meal

That you may have full directions for feeding for eggs in winter we will begin with the morning routine just as it is followed by those who succeed. First, presuming that you have studied all we have written on the producing of eggs, as to floors, foods, litter, and care, we shall go to work to gain from our hens the best possible egg yield that we can have as the result of proper feeding. Cut into two even pieces a basket full of mangels; have just what experience teaches you that the hens will eat out of the shell that day, so none will be left to freeze at night. This is a splendid green food for the hens, and they should have some every morning. With these take your basket of mixed grain, made of one-fourth wheat, one-fourth hulled oats, one-fifth cracked corn, the balance barley and millet-seed, and scatter as much in the litter as the hens will clean up nicely before noon. Feed all their grain by scattering it in the litter for them to scratch for. The feeding of mangels is not absolutely necessary, but they are a splendid vegetable diet for the hens, contain considerable water, and do not taint the eggs as will too much cabbage, turnips or onions. Where mangels can not be fed provide some kind of green food in their place. Do not hang up cabbage on a string and make them jump to get it: this jars them to no advantage. If you hang the cabbage up for them, hang it within their reach. Too much cabbage, turnip or onion will taint the eggs the same as it will the milk of cows fed on them. Plenty of clover or
1. House and Open Shed.  
2. Summer House for Bantams.  
3. Open Shed House for the South.  
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alfalfa leaves are a splendid substitute in winter for green food.

The Noonday Mash

At noon give them a feed of mash or mixed food. Make this of equal parts by measure of ground oats, corn meal, wheat, bran and middlings in which mix some meat scraps—about one-fifth is not too much. Mix this with either boiling hot milk or water—milk is best. Do not feed it hot. Have it just a little warm and mixed into as dry a mash as possible—have it crumbly so it will break to pieces. Give them of this as much as they will clean up within ten minutes. At the same time give them some clover hay or alfalfa hay cut up small—when cut as small as possible in a cutting box this makes the finest of green food for winter; and it can and should be thrown to them to dig and scratch about and eat all they want of it.

The Evening Grain

Toward evening give more grain feed. The evening feed should be two parts wheat and one part cracked corn. According to our ideas, whole corn should not be fed to laying hens. Cracked corn is much better because it takes them so much longer to find the smaller pieces in the litter; and when corn is cracked or broken and the fine meal sifted out there is less of the fattening substance left than in the whole corn. All the grain being fed in this way—in the litter—the hens will be kept busy a greater part of the time and thus prevent the possibility of their acquiring such bad habits as egg eating and feather pulling; and as stated above, the exercise invigorates them for an active egg production.
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And this is why we mention so often the absolute necessity for winter exercise, this hunting in the litter for small grains.

The Dry Mash

Nothing is better than the dry mash as a vehicle in which to feed cut green bone or meat of any kind. Mix equal parts by measure of wheat bran, ground oats, and cut green bone, or granulated meat scraps—mix it well so the meat and meal will be thoroughly mixed—and feed it dry to the hens in the feed troughs. This is a splendid food for alternate days with the wet mash. Hens to do their best at winter laying should have about one-fifth of their entire ration meat of some kind; and this can be most equally distributed among the hens either in the wet or dry mash. The dry mash is good because they will not eat it so fast, and all the particles of the meat or cut green bone will be preserved in the dry mash and easily apportioned to the hens. And the advantage gained in the time it takes to eat the dry mash is of benefit.

Grit, Shell, and Vegetables

Every henhouse should contain a divided box for grit, shell, and broken charcoal. This box should be well supplied at all times so the hens may never want for grit to grind their food, the shell for forming the egg shell, and the charcoal to tone up the crop and gizzard and sweeten them—just as a soda tablet aids the digestion of man. Vegetables of all kinds are good for fowls. They are best when cooked and cut up finely and fed either in the mash or dry. It is a waste to feed many
of them green in winter or at any time. Nothing is better for green feed than the cut clover or alfalfa hay. Give them plenty of this as it is by far better than to mix ground clover in their mash. Where clover or alfalfa hay is about the barn all waste or loose leaves of it should be gathered and fed to the hens.

**Water**

At all times the fowls should have plenty of water where they can help themselves. Warm, not hot water, is best for filling the drinking vessels in winter. These vessels should be emptied at night so they will not freeze; and be filled in the morning with water that is warm enough to take the chill off the pan or fountain. If no water is given them until the sun is up it will be as well; in fact, they are better off for an hour or so of a cold morning without water, for the cold chills them and thus retards the egg yield.

**Nest Boxes**

All nest boxes for laying hens should be up from the floor, and sheltered so the hens will not see the eggs in the nests while they are running about the floor of the henhouse or on the roosts. It is best to have the henhouses so constructed that the hens may be shut in during the winter weather as they will do better when confined in well constructed houses than they will running about in the wet or cold.

Select and keep only well-bred stock,
And train them to a profitable yield,
Through proper housing, feeding, and care.
Select and grade your breeding stock for better results.
The Egg Question Solved

Only use for producers of laying stock the best laying hens,

And mate them to males that are direct from your best laying hens.

Feed your hens small grain in the litter, and make them scratch for it.

Select their food with reference to its egg-producing qualities; if eggs are wanted feed for them.

Do not feed fattening foods when you desire an egg yield. Have a purpose in view and feed to maintain it.

Follow the rules herein mentioned and you will succeed.
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