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WITH THE POULTRYMAN

SQUAB RAISING FOR MARKET

SQUAB-RAISING, like any other industry, should be started in a modest way and built up as experience warrants. It is not wise to expect large returns at first, but with a love for the work, care of details and enough capital to handle the business, one can make out of it a considerable sum of spare money, or even a living in itself.

A squab is a young pigeon about four weeks old. Like any other animal used for food at this age, it is sweet and tender and much in demand for the better classes of hotels and restaurants, the price being from \$2.00 to \$4.00 per dozen at any season of the year. It is a safe industry and one which is not liable to vary much with time.

In the beginning, it is advisable to get good stock. Common pigeons do very well, but much more money can be made in the end if the best stock is secured. Certain breeds of pigeons will produce squabs that will sell for two or three times as much as those from the common kinds.

The first thing to do in squab-raising is to build or arrange a suitable house for the birds. Always make it a rule to begin with as little expense as possible. Some small unused building, or a part of such building, is good enough to start with. The loft of a wagon shed or a corn-crib makes a good pigeon house.

The house must be carefully closed at first. There may be cracks, but they must not be wide enough for the birds to get out, for the old birds will fly back to their old home if they ever escape. The young ones may be allowed to fly at liberty, for they never will, of their own accord, leave their babyhood home. Inside the house place nest boxes at some distance above the floor. It is a good plan to place them side by side and in rows, one above the other.

About twice as many nest boxes as pairs of pigeons will be needed. After being used once, a nest box should be carefully cleaned and whitewashed before it is used again. By having extra nest boxes the parent pigeons may begin rearing a new brood without loss of time.

On the floor of the squab-house must be placed straw, grass or litter from the barn floor. The parent pigeons need this for building their nests. The best squab-raisers furnish the nest boxes with artificial, bowl-shaped trays called nappies. The parent birds build their nests of straw or grass in these. One advantage of the nappies, as nests is that the nests can easily be removed at will. The nappies are earthenware and cost but a few cents each.

One great advantage in raising squabs is that the parent birds feed their young instinctively; they know the needs of the young so well that few die from improper feeding. The feed for pigeons must be placed in the house in a box or pan of some kind. Plenty of feed must be supplied at all times. They will not waste it, and they know when and how much to feed the squabs. Most people use a simple, wooden, self-feeding box. They can be purchased, or anyone can easily make one. Into this feed box, enough feed is poured to last for several days, and it gradually runs out on to a board as fast as it is eaten.

Pigeon feed consists of common salt, ground oyster shells, Canada peas, cracked corn, kaffir corn, hempseed, sunflower seed and a few others. All of these can be safely given but only a few should be given at a time, just enough kinds to make a variety. Frequent changes should be made to stimulate appetite. Grit, such as is used for poultry, should be before them at all times. This is absolutely essential, as they are confined, having no access to such from outside sources.

Bathing water should be furnished them in pans a foot or more in diameter, and four or five inches deep. The water should be changed once or twice each day. Before bathing, they drink as much of the water as they need. Then they splash in the water, wetting all their feathers and making themselves bright and clean. After the bath, the water is covered with an oily scum, and is not fit for use again. They bathe early in the morning, and bathing water should be placed in their pans the evening before unless one is a very early riser. Too much care cannot be taken of their bathing and drinking water. It is a necessity, both winter and summer.

In addition to feed and water, pigeons require exercise in the sunlight and fresh air. For this purpose a flying pen is built to the squab-house for the use of adult birds. Small meshed poultry netting is used for this purpose. A small flying pen will do, but the larger it is, the better for the health and comfort of the birds.

The flying pen may be built on the ground adjoining the squab-house. The door may be kept open all day, but should be closed at

night, especially during severe weather. If many pigeons are kept, some will be found in the flying pen at all times of the day, and especially when the sun shines. Where the loft of some building is used for the squab-house, the flying pen can be built on the roof.

The hen pigeon lays but two eggs. Both parents take turns in sitting on them, and they hatch after seventeen days' incubation. The young squabs are carefully warmed, fed and cared for generally by their parents. The first food given them is a liquid produced in the crops of the parent birds, and is known as "pigeon's milk." This liquid food grows gradually thicker, is then mixed with grain, and after a few days, the squabs eat whole grain, which is also supplied from the parents' crops.

In about two weeks after the eggs hatch, the female pigeon is ready to nest again, when the care of the squabs falls to the lot of the male. When the squabs are four weeks old, they are ready for the market. They can be shipped, either live or dressed, according to the season and other conditions.

SETTING HENS

If the poultry house is large enough it is well to set apart a room for the exclusive use of the setting hens. If a separate pen cannot be provided a place as much apart from the flock as possible should be used as hatching quarters. Wherever the place is, the first thing to do is to clean it out thoroughly and give it a good spraying with carbolic solution or zenoleum. In addition it should be fumigated with burning brimstone, before being used as a hatching place. Make provision for ventilation if such is required. A good plan is to take out a window sash and cover the opening with cotton.

For the nests get empty boxes of suitable size. Boxes the size of an egg case are about right. Turn each box on its side, the open top becoming the front. Nail a three or four inch strip along the bottom to keep the nesting material in and the eggs from rolling out. It's a pretty good scheme to place some moist loam or an inverted piece of sod in the bottom of each box, hollowed out to hold the eggs and conform to the hen's body. Loam or sod are required only when the floor is wood or concrete. On a dirt floor, remove the bottom boards of the box and shape the nest in the soil.

The front of each box should have a little door made of wire netting or slats to keep the hens shut in if necessary. If it is desirable to darken the inside of the nest a coarse piece of burlap may be hung over each box. This darkens the inside without shutting out the fresh air.

Drinking water in a dish raised a few inches above the floor, to prevent the hens scratching dirt into it, and a box or trough with whole grain for the daily ration, should be provided. In addition a box or two or dust should be placed in the pen for the sitters to bathe in, unless they can get outside and roll in the dry soil.

Before setting, dust the hen thoroughly with sulphur or some good insect powder, working the dust well down to the skin. It is advisable in most cases if the hen is to be removed from her laying place to the setting quarters, to move her after dark and start her off first on two or three china eggs and see how she likes the new location. In the morning, if she stays on the nest, and after feeding and drinking, returns to it, she may be given a dozen or thirteen eggs to do time on, with a pretty good assurance that she will stay on the job and make a success of the business. If she isn't disposed to take kindly to the new situation, the nest-box may be darkened during the day and the trial continued a little longer. Most hens accommodate themselves to their new surroundings in a few days. The ones that do not cannot be relied on as setters and may as well have the broody notion taken out of them as speedily as possible and set about their business as layers.

Always set several hens on the same day, so that if in testing the eggs at the end of six or seven days some prove infertile, which is most likely, these may be discarded, the settings filled up from one nest and one hen left free to start again on fresh eggs, or be broken off her broodiness and returned to the laying pen. There is a further advantage in starting several hens at once in that when the broods are hatched all at one time, the chickens may be given to as many hens as are required to look after them, and the rest of the setters started anew on fresh eggs, or turned off to prepare again for laying. One hen can take care of more chickens than she hatches out, and may as well be looking after eighteen or twenty as a dozen. This economizes her labor and makes possible the employment of the extra hens either in bringing out more chicks or paying for their keep in egg laying.

While sitting, the hens should be dusted with the insect powder two or three times at least, and the eggs tested after the methods that have been indicated in these columns frequently before. When setting it is also advisable to make a record on a card that may be attached to each box, of the time of setting the breed, or pen that produces the eggs, and any other item that might be of interest. As the eggs are tested results can be noted down on these cards and at the end of the hatch there is a complete record of results, a record

that may be of future use as a guide in mating the breeding stock or selecting setters.

The hens should be allowed to come off the nests daily. If the doors of the boxes are kept closed they should be opened for half an hour at a regular hour each day. At the end of that time it is well to see that each hen is back at her job. Half an hour is as long a time as a hen should be off her eggs each day. While the chicks are coming out, and for twenty-four hours after, leave the hen alone. Assisting the chicks from the shell is seldom required and does rather more harm than good.

HOW MANY EGGS PER FOWL?

How many eggs should a fowl lay to make her profitable? I think on most of our farms the hen that lays 100 eggs a year pays for herself. I believe, however, that we should not be satisfied with hens that lay less than 200 eggs a year, for we want to get reasonable pay for the labor we put upon them. At the present prices for eggs 100 eggs will bring at least \$2, and they have not cost more than a dollar. But there is another element that enters into the cost of eggs, and that is the number of fowls that are lost from various causes. It is possible to lose so many fowls while they are growing up that this will reduce the profits of the ones that live. Some men figure out that they are making a profit of a dollar off their fowls, but at the end of the year can find no profit. They cannot understand why, if their birds are making them a profit of a dollar each, they should not have as many dollars in profits as they have birds. The fact is, that they had a large number of fowls that were fed from one month to six and then died. In some flocks the cholera appeared and in another roup was the devastator, in others skunks and cats reduced the size of the flock. It is the vanished cost of supporting these that reduced the profits on the eggs to about nothing. The longer I take care of poultry the more I realize that success with fowls consists very largely in keeping them free from fat, lice and disease.—Southern Poultryman.

PIGEON NOTES

Pigeons must have grit; don't forget that. There should be one bath pan for every twelve pair of birds. It is estimated that a pigeon will consume a half bushel of grain a year.

AROUND THE FARM

THE CONSERVATION OF SOIL MOISTURE

NE of the most important factors in the successful production of a crop is moisture. Hardly a season passes in which our crops are not reduced in yield to a greater or less degree because of lack of sufficient moisture to bring them to maturity. The soil may have been put in the best possible condition at seeding time, plant food may have been favorable for a bountiful harvest, yet with a deficient supply of moisture a partial or complete crop failure is sure to follow. The question naturally arises, is there any method or methods by which we may till the soil in order to control or store moisture for the use of crops during the oft recurring periods of drought?

To answer this it is necessary to know the forms in which moisture exists in the soil. These are three free, capillary, and hygroscopic. Free water is not directly used by plants, in fact, is detrimental to plant growth. It furnishes, however, the source of supply for water in wells and springs, and is valuable as a source of supply from which capillary water is obtained. Hygroscopic moisture is of no importance in agriculture. Capillary water is the important form in which moisture is held in the soil.

Capillary water exists in thin films around the soil particles and it is in this condition that water is available for plant growth. Capillary movement may be upward or downward, usually upward. In times of drouth, it may be sufficient to raise the water through a distance of three to six feet, depending directly upon the physical condition of the soil. Should the soil be coarse or cloddy, then water cannot rise to take the place of that carried away by evaporation or that used up by the growing plant. If, however, the soil is fine and in good condition of tilth, then water passes readily through it. If the capillary pores near the surface be enlarged by tillage so as to break capillary connections and stop the water in its upward course, then very little water is lost by evaporation. This loose cultivated surface stratum is the soil mulch which is so essential in conserving the moisture in the soil by preventing evaporation. This brings us directly to the question of the best tillage methods for storing and conserving moisture.

The first step in conserving moisture must be a thorough preparation of the soil so that all the precipitation will sink down readily into it and not be carried away by surface drainage. Generally a deep, well cultivated, mellow soil is best suited for rapidly absorbing and retaining water. This deep preparation of the soil is very important, as much of the precipi-

itation occurring in the spring and summer months falls in hard, dashing rains, and it is imperative that we provide a soil condition which allows of rapid and complete percolation of the water in the subsoil.

Of the implements for conserving moisture the plough is of most importance and the plough that pulverizes the soil most thoroughly is the one best adapted to fit a soil to retain moisture. The time and depth of the ploughing is also important. For example, spring ploughing for early crops should not be as deep as fall ploughing for the same crops. On stiff, clayey adobe soils, spring ploughing should not be as deep as fall ploughing for that type of soil, as new unworked subsoil is turned up in which the plant food is not in an available form for the use of the plants. It is generally desirable to plough sandy or sandy loam soils deep, as the plant food is easily available in this style of soil, and deep ploughing brings more plant food into the root zone of the growing plants.

In the semi-arid districts, deep ploughing may prove to be positively detrimental to a crop during drouthy periods if proper methods are not employed to firm the soil and close the interspace between the furrow slice and the subsoil. In this section the late fall and winter rains are not sufficient to settle the soil, hence we must resort to some mechanical means for doing the work. As an implement for firming the soil and packing the subsoil, the so-called subsurface packer is the best tool yet invented. If the packer cannot be secured, then the disc harrow with the discs run nearly straight will do fairly good work. By firming and pressing the furrow slice well and evenly upon the subsoil, capillary action is restored between the upper and lower layers of the soil. Follow the packer with the smoothing harrow in order to provide the soil mulch which is highly effective in preventing evaporation.

Tillage of the soil not only conserves moisture but it liberates plant food, aerates, and warms the soil. This does not mean to infer that moisture is the all important factor necessary for the successful production of a crop, for it is just as necessary that there shall be heat, light, air and soil fertility. In the fertile plains of the semi-arid west, there are few soils but what would produce large crops if moisture was supplied at needed intervals or if we could but store the natural precipitation that fell for the use of the crop. It may even be necessary to store up an extra season's moisture in the soil to produce one crop but let us remember that some means must be provided for keeping up the fertility in the soil, for the greater the crop we harvest the greater amount of fertility we remove from it. Rotation of crops will not keep up this fertility unless some method is employed for returning to the soil every pound and every ounce of plant food we remove from it. Stock raising and grain farming must go hand in hand. Every pound of manure must be used upon the land. Moisture conservation methods must be employed in order to furnish sufficient moisture to decompose the coarse manure, rot the heavy crop of stubble turned under by the plough and to bring the crop to maturity. There is no occasion or excuse for burning a heavy crop of stubble after heading the grain, for we thereby destroy the humus which might result from rotting the straw and that burned out of the soil by the fire. Plough the stubble or manure under to a good depth, thoroughly pack the subsoil and follow the summer culture plan of summer fallow or use a cultivated crop, then there is no need to worry about the land becoming too light by the straw or manure not rotting. Study well percolation, evaporation, capillary attraction, as they are important factors in determining the amount of moisture which may be stored in the soil.

ONION GROWING

As the onion is now being recognized as something of a medicine, and is allowed in society for the virtue there is in it, a trial growing of this much abused and slandered vegetable may result in considerable profit to the experimenter.

The people, as a general rule, have an idea that onions cannot be successfully grown from seed in the West. This I know, from actual experience, to be a mistake on their part, for I have grown them for years with great success.

On a small farm, or on a place where one is seeking to furnish him or herself with employment at good wages, if not some profit, the onion crop is perhaps the best solution of this problem. Most years the supply is hardly up to the demand, and the labor required by hand to raise a good crop will not be given by most farmers, who can do their work on large farms with machinery and horse power. For this reason, and the fact that it takes very rich land to grow good onions, the small farmer will do well to investigate the possibilities of the onion crop.

First of all be sure you have good seed, and of a suitable kind for the West. The Yellow Globe Danver and Extra Early Red have both done well with me. The Yellow Danver is a good onion both for home garden and for market, combining reliability in ripening with large yield. The skin is pale yellow, flesh pure white.

The Extra Early Red is one of the best onions for the Northwest. It can be made to produce fine marketable onions in ninety days from the sowing of the seed. It is of mild fla-

vor, and keeps well. The color is deep, rich red. It is hardy and reliable, solid and heavy. Some prefer the Yellow Danvers, but I do not know of a better one than Extra Early Red for Northern latitudes, where the season is short and cool.

The seed must be sown very early in spring—just as soon as the ground can be prepared. Remember that freezing and thawing does not hurt onion seed as much as a great many other plants or seeds. If the seed does not show for three or four weeks don't be alarmed, they will be ready to sprout at the earliest opportunity—it starts very slowly.

Be sure the ground is thoroughly worked and well mixed with short rotted manure, for onions require a very rich ground. The surface should be fine and smooth as possible.

I hope you are so fortunate as to own a Planet Jr. seeder and cultivator combined, then your work will be easy and pleasant. Sow the seed in rows, running east and west, at least a foot apart. I have found it a good plan to mix about one quarter of radish seed with the onion seed. The radish, having earlier sprouting tendencies than onions, will act as a guide in early cultivation. Never allow the weeds to get ahead of the young plants. Keep the rake and hoe in use, taking care not to stir the soil too deeply or to collect it about the growing bulbs. Do not work in the garden when the ground is wet.

When the onions are about two inches high, they should be thinned out and the radish plants removed. This thinning should leave a good onion about every four inches in the row. You may think it foolishness leaving so much space, but they will require it. Never allow them to crowd and do not leave a single weed. When the bulbs have attained a good size—about half grown—begin to roll down the tops flat to the ground. See that every top is broken, laid flat and kept there. If you succeed in breaking them, and then neglect them a few days you will find new tops growing, and after that you will need more skill than I have to ripen them perfectly.

It is wonderful how the bulbs will enlarge after the tops are bruised. A garden roller is the best to do this with, but I saw a man roll his down with a bar, and it seemed to answer the purpose all right.

When they are full size, or the cold weather is coming on, it is time to harvest them. Pull them and leave them in rows on the ground for a week or even longer, if the weather is favorable. Then leave them in wide spreading piles, after having cut the tops off close to the crown, so that they can be covered up at night and be exposed to the sun in the daytime. If you have a warm dry floor on which you could spread them, so much the better. Unless a person has a proper place in which to store them, it is best to sell them in the fall, as they are rather hard to keep. There is a ready sale and a good price for them every fall.—Dell Grattan, in Farmers' Advocate.

HUMOR THE COW

So far as possible the same persons should milk the same lot of cows. No greater nonsense was ever promulgated than that all talking and whispering should be prohibited in the stable. The cow should be familiar with the voice of her attendant, and she should never hear it in other than kindly tones. She should be called by name, and talked to individually, when he has occasion to speak to her. Whistling and singing to a moderate degree are not objectionable in the stable.

H. B. Currier says that the cows invariably fell off in their yield under the care of a certain attendant. The man was kind, and seemed to give the same care as others. Still, he could not keep up the flow of cows under his charge. It was noticed that he rarely spoke in the stable, and still more rarely to the cows milked. His attention was called to the fact, and he was asked to change his methods and familiarize the cows with the tones of his voice. The cows had never become acquainted with him. Cows like to hear the voice of the attendant, especially when in a kindly manner he speaks their names.

Milking should be done quickly, kindly and cleanly. If a part of the flow is left in the udder each time, the cow soon learns to secrete just that amount less, and there will be a corresponding falling off in the flow. The same sequence of milking should be followed, each day, so that each cow will know when her turn comes. Attendants have probably noticed that when they sit down to milk one cow, the udder of the next one will begin to fill, and milk will often begin to flow from the teats before they get to her. If she is not milked in order, she will manifest her displeasure by her nervous actions, indicating disappointment. The first few streams of milk from each teat should not be put in the pail. Bacteria gather in the end of the teats between milkings. These in the milk will increase with great rapidity, often seriously injuring its quality for butter and cheese. As soon as drawn, the milk should be removed from the odors of the stable. There is nothing that will more readily absorb noxious odors than cooling milk.