

Soils and Crops

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Setting a Hen.

At first thought, setting a hen seems to be a very simple subject, but when I hear of so many failures and poor hatches I find upon inquiry that very few people know just how to set a hen, or if they do, they seldom follow the best methods.

The first essential in starting in the business is to purchase eggs of some good, reliable breeder who makes nothing but strong, vigorous birds. Place your order for the eggs, but do not have them shipped until you are certain you will have a broody hen when they arrive. When they arrive do not place them under the hen, but place them in a cool, dry place, and do not disturb them for twenty-four hours.

A day or two before you expect the eggs to arrive, arrange a place to set the hen. Whenever a hen is allowed to steal her nest away, she usually selects a cool, damp place, away from the flock, so that she will not be disturbed. These conditions should be duplicated as nearly as possible when a place is being selected for the hen.

When only a few hens are to be set, it is not always convenient to provide separate quarters for the sitting hens. Of the various styles of nests for sitting hens the following is recommended: The nests should be fifteen inches square, fifteen inches high in back and sides, and with a board six inches high in front to prevent the nesting material from falling out. Before placing the nesting material in the nest proper it is well to put three to four inches of damp earth or a piece of grass and in the bottom of the nest to provide moisture. The nesting material, which may consist of hay, chaff, or straw, is then put in. Pack the nesting material down firmly and shape a circular nest slightly deeper in the centre than at the edges. Some folks call it "saucer-shaped." A nest so shaped will prevent the eggs from rolling out from under the hen and becoming chilled. They must be kept warm to start incubation.

The number of eggs to place under the hen will depend upon her size and the season of the year. Usually fifteen eggs are considered enough. However, if the hens are set early, it is better to place only thirteen eggs under them.

Before the hen is set, she should be dusted with a good lice powder or sodium fluoride. Then she is ready for the eggs. It is well to repeat the dusting on the tenth and nineteenth days. Then hens should be released and fed each day. Feed them close to their nest, so they will have to hunt for the food. Feed whole grains and water. Avoid damp mash as they will make the nests dirty and require more time in cleaning. As a rule hens will return to their nests before there is any danger of the eggs chilling, but if they do not go back in half an hour they should be put back. Do not remove the hen after the nineteenth day.

The period of incubation for hens' eggs is twenty-one days. Usually some of the eggs hatch in the evening of the twentieth day; it sometimes happens, however, that the hatch will run over the twentieth day, especially during cool weather.

Examine the nest and eggs and remove when necessary any broken eggs and wash those that are soiled. If the nesting material is soiled replace with clean chaff, hay or straw. Nests in which eggs have become broken soon become infested with mites and lice, which will cause the hen to become uneasy and leave the nest. This is likely to cause the loss of a valuable sitting of eggs. When a nest is infested with mites the hen, if fastened in, will be found standing over, rather than sitting on, the eggs.

Frequently eggs that are laid in winter or early spring are infertile, and for that reason it is advisable to sit several hens at one time if possible. After the eggs have been incubated for from five to seven days, depending somewhat on the color and thickness of the shells, they should be tested, the infertile and dead-germ eggs removed, and the fertile eggs returned to the hens. Thus in many cases all the eggs remaining under several hens may be placed under one or two, and the hens from which the eggs were taken may be reset. For instance, thirty eggs are set under three hens at the same time; that is, ten under each hen. At the end of seven days, at which time the eggs should be tested, it may be found that

ten are infertile or have dead germs, leaving only twenty fertile eggs. These twenty eggs can then be put under two hens, and a new sitting placed under the third hen.

Planting for Pollination.

For the last score of years the pollination question has been receiving much attention by orchardists in general, many of whom have said that their trees bloom freely but set little fruit. There are a number of factors which may be responsible for this condition, among them being variety as well as the individual tree characteristic, general vigor of the trees, diseases and weather conditions.

Then again, the conditions seem to be ideal, splendid weather, trees in normal vigor, plenty of blossoms, but no fruit. The trouble here may be that the orchard was not properly blocked, so as to fertilize through the blossoms.

Even with all the conditions ideal, as far as above mentioned, should you have large orchards of single varieties, you may have a very light set of fruit. The reason here is that your variety needs crossing with some other variety before it will set its fruit well.

Some growers have practiced spraying the trees while they are in blossom. These spray solutions will injure the blossoms in many cases and will kill the pollen grains.

We find, upon close examination, that we can divide all fruits into two classes: First, those which are self-sterile—that is, those which will not set fruit with their own pollen; and second, those that will mature fruit with their own pollen. And then, a variety may be sterile in one part of the country but fertile in another.

After some careful observations I suggest a list of apples that blossom together. A little observation, at the proper time, would soon prove whether they were adapted for other distant localities as well.

The varieties that work good together are as follows: For early, Gravenstein, Oldenburg, Red Astrachan, Yellow Transparent, Wealthy; late varieties, Baldwin, Ben Davis, Grimes Golden, Jonathan, McIntosh, Northern Spy, Rome Beauty, Spitzenberg, Wagener, and Yellow Bellflower.

Regardless of whether a variety is sterile or fertile, we believe that it is benefited by crossing—that it will pay to plant more than one variety in a block. However, one need not make the mistake of planting a great many varieties in the same orchard. Some fruit growers are asking the question, how does pollination affect the fruit that is secured?

Many fruit growers claim that the color, flavor and general characteristics of the fruit are changed by pollination. But after a more careful observation we are obliged to conclude that such characteristics are not influenced by pollination. The pollen affects the percentage of set, the size of specimens, and there also seems to be a close connection between the presence of seed and the weight of the fruit. Color is not influenced by pollination. Many changes that take place can be attributed to pruning, fertilization, tillage, and similar orchard management.

In choosing the varieties of fruit to plant, we must bear the pollination question in mind. First, the varieties that we plant must bloom at the same time. Second, if you have but two varieties, they should both be good pollen producers. My observation allows me to give a specific instance. The Winesap apple rarely produces pollen. Therefore, if you should plant Rome or Spitzenberg alone with Winesap the chances are that the crop of the two former would be very light, whereas the Winesap crop might be splendid.

The blooming periods will vary. The further north we go, and the higher the altitude we reach, the closer the varieties seem to bloom together. The list for early and late blooming varieties given above, will be of assistance in your plantings. Any variety in the early list will pollinate any other variety in the early list; likewise, any variety in the late list will pollinate any other variety in the late list. The Winesap, however, being perhaps the single exception. You will find, however, in many regions that the Gravenstein, for example, is overlapped by some late varieties by several days, which is sufficient for good pollination.

The Dairy

The dairy herd, to do its best work during the cold winter months, must be comfortably housed. Too close stabling in poorly lighted and ventilated barns is not only detrimental to the health of the dairy herd, but also lowers its efficiency to convert feed into profitable returns. To keep the dairy herd in good working condition the stable should be well lighted. Some stables, however, are quite difficult to light on account of north exposure; such stables can be greatly improved by whitewashing or painting some light color. Where the basement is low and dark it is advisable to arrange the stable around the outside so that the cows may have the benefit of the light as much as possible. It is better to arrange to have a feed room in the dark portion of the stable than to have stock. I find that in my stable a large feed room is invaluable and affords an arrangement whereby my stock has plenty of sunlight.

Safeguarding Health of Animals Used for Food.

The magnitude of the work carried on by the Health of Animals Branch of the Dominion Department of Agriculture is well exemplified in the annual report of the Veterinary Director General for the year 1920-21, recently issued. One of the tasks undertaken by the branch was the wiping out of mange on the range area of Alberta. When it is stated that this area comprised 2,082 townships, approximately 74,952 square miles, a territory as large as Scotland, it will be understood what "magnitude" in this connection means. Very careful details had to be arranged. Dipping was made compulsory. New dipping vats were built, to the expense of which the Department contributed \$400 each. No cattle had to be driven more than twelve miles to a vat, and every possible contingency provided for. In these efforts the cattlemen cordially co-operated. On June 24, 1921, 197,721 head had been dipped for the first time, and on July 2 and following days 197,914 were dipped for the second time. As a result, mange has been entirely eradicated and the restrictions have been removed.

The Veterinary Director General is further able to report that Canadian live stock retains its enviable reputation as among the healthiest in the world. None of the great animal plagues, such as rinderpest, foot-and-mouth disease, or contagious pleuropneumonia, has made its appearance, and hog cholera and glanders exist only to a trifling extent.

The report also details the work performed during the year by the Pathological division, which includes the biological laboratory at Ottawa, the research station and the branch laboratories, and by the Meat and Canned Foods division, which certifies to the quality and wholesomeness of all manufactured food products and supervises the importation of meat and meat-food products, as well as fruits, vegetables, milk and milk products. The fact is noteworthy that Canada is the only country in the world that possesses a law setting out standards to which all countries trading with her in food products must conform.

How to Graft Trees.

When in the spring the sap begins to move in the stock, be ready; this occurs early in the plum and cherry, and later in the pear and apple. Do the grafting, if possible, on a mild day during showery weather.

The necessary tools are a chisel, or a thick-bladed knife or a grafting iron (with which to split open the stock after it is sawed off smoothly with a fine-tooth saw), a hammer or mallet to aid the splitting process, a very sharp knife to trim the scions, and a supply of good grafting wax. Saw off a branch at the desired point, split the stock a little way down and insert a scion at each outer edge—taking care that the inner bark of the scion fits exactly against the inner bark of the stock.

Trim the scions wedge-shaped, insert them accurately; the wedge should be a trifle thicker on the side which comes in contact with the stock's bark. Lastly, apply grafting wax. Each scion should be long enough to have two or three buds, with the lower one placed as shown. The "spring" of the cleft holds the scions securely in place, and therefore tying should be unnecessary. If both scions in a cleft grow, one may later be cut away.

You can't graft a pear or an apple on a cherry or plum tree, nor vice versa. The stone fruits and the pomaceous fruits are separate families and refuse to intermarry.

Hogs That Sell at a Premium



The illustration shows two hogs which are of the precise type to yield the highest quality "Wiltshire sides" for export, or if wanted, the most desired cuts for domestic trade. It is the only single type which exactly suits both markets. On the farm such hogs should weigh between 170 and 220 lbs. so as to be between 160 and 210 lbs. at the packing plant.

Diseases of Fowl.

Tuberculosis is a disease that man, beast and fowl are alike subject to. Efforts to decrease its prevalence are always being made, and it is satisfactory to be able to say with a large measure of success. So far as fowl are concerned, this disease has not been brought to public attention to any great extent, but for all that, a study of the complaint as it affects poultry, along with other diseases, is being made by experts of the Health of Animals Branch of the Dominion Department of Agriculture. To further the investigations that are being made a biological laboratory has been established in the new poultry building at the Central Experimental Farm, Ottawa. Black-head in turkeys is also receiving special attention, and much work has been done towards checking the inroads of both it and tuberculosis and in spreading knowledge of prevention and remedies. It has been shown that tuberculosis is communicable from fowls to hogs and possibly to other animals. Roup, chickenpox, canker and the causes of chicken mortality are also being made objects of investigation and research. As regards roup in its various forms, vaccine has been used to some extent with success. A survey is being made of the provinces in order to locate the parasitic conditions that exist in certain districts and to ascertain the steps necessary for prevention and control. Ducks and geese, which were formerly fairly immune from diseases affecting other fowl, have of late years contracted diseases common to waterfowl, and are now being made subjects of investigation. In relation to this work, veterinarians are being posted and illustrated lectures given at poultry meetings.

To Give Plants An Early Start.

We have devised a scheme which we have used for several years on our farm and find it very successful. It is an arrangement for giving plants an early start in the spring.

A small crate, with a tight bottom, is made to receive a number of tin cylinders. For these we removed the top and bottom from regular vegetable cans. This can be done by placing a can on the stove on its end until the heat melts the solder when a slight blow will knock it off.

These cylinders are placed on end in the crate and filled with the soil desired. The seeds are planted in them and the crate with its contents is kept in the warmth until it is time for the plants to be reset in the garden soil.

One side of the crate lifts out of slots. A flat piece of tin is then slid under a tin cylinder which is then lifted out and placed in the hole in the ground that has been prepared for it. Dirt is then pressed in about the cylinder, which is then lifted upward leaving its contents in the soil ready to begin its out-door growth. We have tried other schemes, but none were so efficient as this.—P. C. G.

How to Fail in a Dairy Business.

Paradoxically, sometimes the best way to show how to do a thing is to show how not to do it. Thus a West Virginia farmer gives some rules how not to succeed with cows. He says:

Don't weigh your milk, for then you might have to figure and think.

Feed the cows timothy hay; it is good for race horses.

Cow-testing associations are needless; they show you how to save and know.

Keep the barn hot; cows are like woodchucks.

Don't have many windows in the barn; the hired man might look out.

Keep the water ice-cold; shivering gives the cows exercise.

Avoid heavy milkers; they consume too much valuable time.

Frequent light dressings of barnyard manure are more economical than less frequent heavy applications.

Grooming puts pep into orchards as well as in horses. The orchard currysomes are the pruner, sprayer and cultivator.

What will hold the boys on the farms and multiply the wealth of the farmers? More power and less hand work.

Conclusions of tests made at the O.A.C. indicate that good table butter can be made from whey-cream, and of fair keeping quality if the whey-cream has been pasteurized.

It is more profitable to try out fertilizer elements separately on a farm to find out what its particular needs are than to use a mixed fertilizer containing possible ingredients that the soil does not require.

SMOKE OLD CHUM

The Tobacco of Quality
1/2 LB. TINS
and in packages

The Welfare of the Home

Property Rights of Our Children

BY EDITH RILAND CROSS.

Are the property rights of our children respected in the home? Do we recognize their right to their things as we wish them to respect ours?

These are questions which have come to us in the training of our two and four-year-old boys.

Every one knows how strong is the instinct of possession, and how early it manifests itself in the tendencies of little children.

Our oldest son, Jerome, is of a very cautious, deliberate nature, prizing very highly everything that is given to him. So I decided, when he was two years old, to allow him to have one of the drawers in my own personal desk. It delighted the child, gave him a place to keep some of his own particularly personal things, and at the same time aided his mother by keeping out of sight the hundred and one little insignificant keepsakes so dear to the heart of a child.

One look into his drawer would assure you of the great necessity for such a place, for there we find all of his Sunday School papers strung with yarn into a neat booklet. There, too, his small paper-covered books, such as the miniature set of the famous Jessie Wilcox Smith's Mother Goose. Two tiny silver fish received at Sunday School for bringing in new school-repose in the drawer, beside a small piece of an old bed-spring given to him by a ten-year-old boy, his idol in the neighborhood. Toy paper money, Easter cards and Valentines, a box of nuts, bolts and washers for fixing his conister wagon, scissors, crayon, bits of string, yarn, a blunt needle and a

dozen smooth pebbles are but part of the miscellany in that drawer.

Occasionally we clean out the drawer, rearranging things and discarding those that have little value. This gives the child an idea of the present value of things, and he is the judge, with only suggestions as to what things shall be thrown out.

One day, when other children were playing in the house with our boys, I noticed that Jerome became very nervous because the children were rummaging through his drawer. At first I thought it very selfish of him. But I soon realized that that was his own very personal property, and other children, or even other members of the family, had no right there.

Since then, playmates may always play with the many toys in the play corner near this desk, but they are not allowed to go through Jerome's drawer without his permission.

When brother John became two, I gave him the lower drawer in the desk, and his rights as owner are respected in the same way.

Some of you may say that this would tend to make selfish children, but in our case it has been just the contrary, for these boys are happy in that they know where their things are. And instead of having to hunt to the bottom of a basket of toys for some trivial thing, they go at once to the desk drawer, and find it easily.

Let us give our children a definite place for their own personal use, and see what a pride they take in having their own recognized rights in the home.

The Korean girls laughed, for it was the first time they had ever heard any one call these things pretty, but Korean thimbles are often brightly colored and embroidered.

A day or two later the girls came to the house of the teacher-mother with the things she had asked them to get.

"My box of thimbles!" she exclaimed, and held out her hands, smiling her thanks.

The girls laughed merrily.

"It has taken us two days to get them," they said. "They were not easy to find."

"I am sorry to have given so much trouble. I thought one could get them anywhere. How much do I owe you for them?"

"But they cost nothing at all," said the girls, and then they darted back, because the teacher-mother gave a scream—first one scream and then another, as over the white cloth of the tea table twelve spiders—big, hairy spiders and tiny, black spiders—escaped at last from imprisonment, were tearing about in every direction.

"I said thimbles (kol-mo)!" she cried in dismay.

"I thought she said spiders (kol-mo)!" gasped one of the girls. But, as you see, the word in Korean is almost the same.

Do not neglect the ice harvest. The best business sagacity is treating the other fellow fair.

It will pay to keep a close watch on the poultry flock from now until the breeding pen is selected. The latter should be composed of the earliest and best layers.

A hen is underfed when given less than she will eat, and overfed when uneaten grain remains in the litter after she has gone to roost at night. Ability to lay depends very largely upon ability to eat and digest food; the good layer is a good feeder.

OUR 1922 GARDENS

Did the garden of last year contain all the kinds of vegetables that the family wanted, and enough of each kind? Specialists of the Department of Agriculture say that, as a rule, not more than 15 or 20 kinds should be planted in the average home garden. That's good advice for the "average" garden, but our garden of 1922 is to be more than average; it's to be the best garden that we ever had. We will want a greater variety than we had last year, and perhaps larger quantities of some of the kinds that we grew. If we haven't yet sent to our favorite seedsmen for a 1922 catalog, or to two or three seed firms, if we liked, we should do so at once. A catalog fresh from the printer's is like a joy and a friend in time of need.

With a catalog at hand, we are not likely to overlook anything when we examine last year's garden plan with a view to preparing a new plan for the coming spring. If certain vegetables gave indifferent results last season, they should either be omitted from the next planting list, making certain first that some essential to proper growth was not overlooked, or be substituted by some other variety or varieties of the same class.

If one's cabbage and onion patches were poor, for instance, the failures may have been caused by club-root disease or onion fly respectively. If the garden grew good crops of vegetables other than those named, it should grow cabbages and onions successfully, provided that the troubles mentioned or other possible causes of failure are remedied. Then again the nature of the season itself may have had much to do with poor results in growing certain crops. Perhaps the thing that failed would prove successful the next time tried.

One should meditate also upon cultivation and fertilizers. Deep cultivation with proper fertilizing is the real secret of success in growing quality vegetables. Was our garden properly cultivated and fertilized last season? If it was not, we should not blame the vegetables for not producing best results. Rather, we should resolve to do things and have things right next time. From the seed catalog we might order a supply of garden fertilizers at the same time that we order our seeds.

Having decided that our methods were right, or that we will make them right, we should make an outline map of the new garden-on paper, indicating the direction of the rows, the distances apart, the location and amount of each kind of vegetable to be grown and, if desired, the approximate dates for sowing and setting. After the garden is thus planned, the seed catalog should be consulted earnestly. We should remember that many varieties of vegetables have been greatly improved in recent years, and that many entirely new varieties have come into existence and general use. Although it is wise to stick to those sorts with which we have had success, there may be better varieties which will give heavier yields and improved quality. For a home garden quality is really more important than quantity, but there are lots of varieties available that yield both.

On the pages of the catalog, check the varieties that have been decided upon. Then calculate the amounts of each kind required according to the plan. It is usually best to order a little more of each kind than apparently would be needed, to be on the safe side and to have a few extra seeds for testing as to their power of growth. The list should be made out early and sent to the seedsmen without delay. The earlier that seeds are ordered, the more certain the gardener is of securing fresh seed and exactly the kinds wanted. Insist upon having the best, regardless of price. Buying cheap seed is a gamble.

In spraying materials, we might need a new sprayer of some kind. According to size of garden, and whether or not it will be needed for fruit trees as well, there are hand sprayers, knapsack sprayers, bucket sprayers and barrel sprayers from which to choose. Arsenate of lead, Paris green, commercial lime-sulphur, and Bordeaux mixture, or materials for making these latter two at home, tobacco compounds and various proprietary compounds are available in variety and quantities suitable to anyone's needs.

In tool implements, there is a host of things old and new from which to select labor savers. In common tools, like the garden fork, spade, rake and hoe, the important thing to consider when choosing is strength. The so-called ladies' sets and individual tools often are weak and unsound. A woman who gardens in earnest will of necessity put as much strength into the work as a man would; otherwise, she could not accomplish the operation. Long-handled tools should have the metal of the actual tool itself carried well up the handle and both metal and wood strong.

Besides these tools, there are many novelties in weeders and cultivators that are a great help in any garden. Probably the best one all-round garden tool—it's really an implement—is a combination seed drill, weed hoe, cultivator and plow. It is easily operated by hand and will last for years. So here's to the 1922 gardens. May they be fat and flourishing.

Cheap feed is usually the most expensive in the end.

Poultry

R. S.: How many turkey hens can a tom take care of? Is whole wheat ground more economical to feed than to sell wheat and buy bran to feed? What per cent. of protein is contained in whole wheat flour?

A tom to every four or six hens is the usual plan in mating turkeys. Whole wheat flour contains 13.8 protein. In feeding poultry, a balanced mash is necessary for best results in egg production. Under ordinary circumstances it pays to sell whole wheat and buy bran to mix with the egg mash which, of course, will contain other ingredients. Many poultrymen

buy the commercial mixed mashes and have good results and find the purchase economical.

A great deal of wheat can be fed to poultry as scratch feed and very few poultrymen have any surplus of wheat above their needs for that purpose. It will be fine for the growing stock next summer and it will hardly pay to have any wheat ground which can be used for scratch grain. Bran contains very little nourishment and is only useful to give bulk to the hen's ration and keep the digestive system in good order. A farmer with much poultry to feed can hardly afford to sell the wheat at present prices and buy other feeds as the wheat is about as big a bargain in poultry feed as it is possible to find.