Soils and Crops

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WINTER COVERING FOR STRAWBERRIES.

Strawberry plants may be injured by alternate freezing and thawing, which tends to lift them out of the soil and thus injure or break the roots. They may be injured during the cold of winter by the frost drying out the crown of the plant and the leaves. Heaving of the plants seldom occurs on a well drained soil, but on soils poorly drained the plants are likely to suffer considerably, particularly during the very early spring after the snow has melted. In certain situations there may be little loss from cold, as the drying effect of the cold may be lessened because of the natural protection afforded, or the snow may give the protection required.

In order to make sure of the plants carrying through the winter successfully it is wise to protect them with a mulch. A mulch of any material tends to hold the soil under it at a more uniform temperature. The soil will not freeze so quickly under a mulch and is slower in thawing than where no covering is given. Thus with a mulch the plants are better able to avoid the alternate freezing and thawing of spring, with its consequent disastrous results. If the injury is due to drying out, which often happens in exposed situations, the mulch will overcome this trouble. Plants exposed to the cold, and unprotected from dry, cold winds, may be completely dried out. Under such conditions, if the air is dry, a heavier mulch may be necessary than where the atmosphere is humid and the consequent loss from evaporation less.

In situations with a fairly moderate climate a light mulch is all that is necessary, as too heavy a mulch may cause injury because of the plants being kept damp and mould developing. In the colder sections a good blanket of snow can usually be depended upon, and under such condition a heavy mulch with the snow above may also produce unsatisfactory conditions for the plants.

Of all mulch materials good clean straw free from weed seed is the best. This is scattered evenly over the plants at the rate of 2 tons per acre. A covering thick enough so that the plants are nicely hidden from view is usually ample, and careful scattering, giving an even light covering, is most satisfactory. A light covering of clean marsh hay may be used, but more care is necessary to give a light covering than with straw, as the compact hay may hold dampness in the spring and result in decay of the plant. Spruce boughs make a good covering, but it takes considerable time to gather and place them.

The mulch should be placed in November when the ground is nicely frozen, and is removed in the spring during the last week in April or early May. It may be gathered when dry and used for bedding, or may be placed between the rows to serve as a summer mulch, thus conserving moisture and keeping the fruit along the edge of the rows clean from sand.

HOW CAN YOU KILL ALL THE LICE ON YOUR HOGS.

"My hogs still have lice after I dipped them and made a rubbing post. How's come?" This question was put at me frequently when I was practicing veterinary medicine. And my reply was:

"You have killed the lice that were on the hogs, but you haven't killed the lice in the cracks of the hog-house walls and floors. You haven't removed the source of the lice.

"Another reason is that the nits are covered with a thick gelatinous substance which renders them immune to most louse treatments. If the nits are not destroyed they infest the hog again in a week or ten days."

"Well, Doc, how can I get rid of these lice in the cracks, and how can I get rid of the nits?" the farmer would ask me.

"The best method I know of is to clean up the buildings and pens thoroughly, brush all the dust and dirt from the cracks, sweep it into a pile, and burn it. Don't throw it on a pile outside the fence for the lice to crawl back. Take a good stock dip and put one gallon in fifty gallons of water. Spray or soak the walls and floor of the hog house and feeding floor. Spray or dip the hogs. Don't let them get into the hot sun until they are dry, or it will blister them. This will not kill the nits, so the hogs should be treated again in ten days to kill the newly hatched lice."

"Crude oil is just as good, isn't it, Doc?" would often be asked me.

"No. Crude oil is not as good for treating lousy pigs as a good coal-tar dip. Dip has a healing effect on the irritation of the skin caused by the biting of the lice.

Many of my good farmer clients did not have any stock dip, and from them I usually heard this question: "I'd like to treat these lousy pigs, but I'll have to wait until I can get to town to get some dip."

"I am not sure," I'd reply. "If you have kerosene and soap, I can tell you how to treat them. Take two gallons of coal oil and one-half pound of common laundry soap and dissolve the soap in one gallon of boiling water. Add the coal oil to this solution while it is still hot, stirring vigorously for ten minutes, then add one gallon of this mixture to nine gallons of water. Spray the hog with it, after it has cooled. Keep sprayed animals or animals dipped in this solution from the bright sunlight. Best to apply in the evening. Keep hogs in fairly tight pen, as the rubbing against each other will distribute the solution. It is well to keep animals shaded for a couple of days after treating with the coal-oil emulsion. This can be applied with a spray pump or a sprinkling can."

"Say, Doc! Do you think it would pay me to build a dipping vat?"

If my clients kept both hogs and sheep, I usually advised it, for both could be dipped when they required it. I knew that if they must be treated by hand that most times it was neglected. During such discussions my farmer friend and client would likely say:

"Well, I see a number of my neighbors use these rubbing posts, and I wonder why they wouldn't do."

"Rubbing posts undoubtedly help to keep hogs free from lice," I'd reply. "But you should keep in mind that the only thorough way is to destroy the hatching and breeding place of the lice and then destroy the nits when they hatch. If you don't do this, your work is not effective, for your hogs become reinfested every few days."—Dr. George H. Conn.

Management of the Young Gilt

By Prof. Wade Toole, Ontario Agricultural College

Care and feeding during development.—The young gilt selected for breeding purposes should not be forced along as if she were going to be marketed for pork, but rather the system of growing her as followed during the early stages of her life should be followed. A healthy, thrifty gilt in moderate flesh should be the objective, so that instead of being soft and flabby when she is called upon to carry her first litter, she is strong, firmly fleshed and in a condition to nourish and develop the foetus she is carrying with no undue forfeiture to herself.

During the summer months possibly there is no more economic and satisfactory method to develop the young gilt than to turn her out on good clover pasture. An annual pasture such as peas and oats, sown at the rate of 2¼ bushels of oats and half a bushel of small peas or 1 bushel large peas to the acre, together with a mixture of clovers (red 8, alsike 3, sweet clover 4) at the rate of about 15 pounds to the acre, gives very good satisfaction. Pigs are turned into this crop when it is about 8 to 10 inches high. Rape is also a suitable pasture crop on which to develop young gilts being kept for breeding purposes. Shade of some description should always be of easy access.

While on pasture, the young gilt does not require very much grain. A six to seven months old gilt would not require more than 3 to 4 pounds of mixed grain per day along with about 10 to 15 pounds of whey with water "ad lib." to keep her in good growing condition; the amount of grain, of course, to be governed by the age, size and condition of the gilt and whether or not whey is available.

Age of breeding.—A gilt which is well-developed should be bred when between eight and nine months of age unless she is intended for exhibition purposes, when it is advisable to give her a couple of months more to grow. A gilt should not be bred too young because the young sow will not usually have the strength and properly nurse her litter without sapping her own vitality to such an extent as to hamper her own development. If she is unfortunate enough to lose some of her first litter through lack of nourishment, her mammary glands will not develop properly, and as a consequence, subsequent litters will suffer, all of which tends to deplete her future usefulness.

It is not advisable, however, to allow a well-developed gilt to run too long before being bred, since there appears to be a tendency toward the development of coarseness when a gilt runs barren too long.

Care during pregnancy.—As the young sow commences to show signs of pregnancy, she should not be called upon to rely altogether on the pasture for her maintenance. Not that she should be taken off it, but she should be getting a sufficient amount of grain to maintain her own body as well as develop the foetus. The value of pasture to the pregnant sow is not only because of its succulent nature and nutritious variety, but because there is in it a considerable amount of mineral matter available which is essential to the development of the young.

If, on the other hand, a young sow is being carried through the winter months, the aim should be to provide her with as near summer conditions as possible, with respect to exercise, succulent feed in the form of roots, access to a mineral mixture and a grain ration of equal parts barley and oats fed with skimmilk or buttermilk, if it can be spared, or in lieu of skimmilk feed about 10 per cent. tankage. The care given a young sow previous to her farrowing her first litter is a strong determining factor in her development and future usefulness.

In 1921 the Department of Animal Husbandry of the Ontario Agricultural College supervised the problem of investigating 800 litters of each of seven different breeds, viz: Yorkshire, Tamworth, Berkshire, Hampshire, Chester White, Duroc Jersey and Poland China. This investigation covered this number of litters farrowed in one year. The 5,600 litters farrowed numbered 49,400 pigs, or an average per litter of 8.82 for a twelve months' period. This average is higher than most people would believe, and serves to place pure-bred swine in a better light than many see them. But when 5,600 litters of pigs from pure-bred sows and pure-bred boars of seven different breeds average all told, 8.82 pigs per litter, the pure-bred pig, so far as fecundity is concerned, stands above criticism; and while some breeds are more productive than others it will be noticed from a summary of results that each and every breed has a creditable record.

The data from which the results were obtained was secured from the Canadian Live Stock Records, Ottawa. When a breeder makes application to register the progeny of pure-bred sire and dame he must furnish:

1. The number of pigs in the litter
2. The number of males in the litter.
3. The number of females in the litter.
4. The date of farrowing.

These application forms furnished the source of the information which is reliable. The following table shows the average number of pigs per litter:

Breed.	No. of litters	Average per litter
Yorkshire	800	10.2
Tamworth	800	9.4
Berkshire	800	8.3
Hampshire	800	8.2
Chester White ...	800	9.3
Duroc Jersey	800	8.4
Poland China	800	8.0

This table is of interest for several reasons. Besides proving that each and every breed is fairly prolific, it shows that the bacon breeds are in the lead with the Yorkshire at the top. This is important in Canada where the bacon hog is most in demand. It is well to notice, too, that the Berkshire and Hampshire breeds, which are sometimes considered as in between the strictly speaking bacon type and the pronounced lard type, are, when grouped together, lower in fecundity than the three lard breeds, viz.: Chester Whites, Duroc Jerseys and Poland Chinas, while the Poland, with an average of eight pigs per litter, stands at the bottom. So far as size of litter is concerned they line up:

1. Yorkshire	10.2
2. Tamworth	9.4
3. Chester White	9.3
4. Duroc Jersey	8.4
5. Berkshire	8.3
6. Hampshire	8.2
7. Poland China	8.0

Some think that the Canadian climate is too severe for best results in swine. This may be so, but the results of investigational work covering 85,000 litters in the States, showed a litter average of 8.17. While not so many litters were studied in Canada, our average of 8.82 pigs per litter looks favorable to this country.

Other interesting information was revealed in the work. The percentages of males and females in the 49,400 pigs studied ran 48 per cent. males and 52 per cent. females, showing that the balance of the sexes is fairly well controlled in nature.

Why pay more per pound for one animal than for another? There is a reason and it is this: Cattle dress from forty-eight to sixty-six per cent. of the live weight; hogs from seventy-five to eighty-five and three-tenths, and sheeps and lambs from forty-two to fifty-eight and three-tenths per cent.

POULTRY

Fowls have many diseases of the head and throat, similar in character and quite difficult to diagnose. In all cases of a mild nature, where the nostrils and eyes are affected by a catarrhal condition, and small bubbles are noticed in the corners of the eyes and nostrils, with but little if any odor, a simple but very efficient remedy is the use of two parts kerosene and one part sweet oil. Inject into the eyes, nostrils and throat by the use of a small spring-bottom oil can. A few drops of camphor added to this will be a further aid to breathing.

Where the throat seems to be most affected and fills with mucus, use the remedy more freely in the throat than in the nostrils.

Carbolated vaseline may be used quite successfully in mild cases, and where the flow of mucus is slight. Rub it in the eyes and nostrils and force a small quantity down the throat.

To minimize the spread of the disease, all sick fowls should be separated from the well ones. Roup can always be detected by the acrid odor which it throws off.

The drinking water may also be medicated with permanganate of potash, at the rate of about one-fourth of a teaspoonful to a gallon of drinking water. This is a very good preventive to use for all the fowls, especially where there is any trouble of the kind in the flock.

The roosting quarters should be kept clean at all times, and especially during an epidemic. Feed good, wholesome feed in moderate quantities, being careful not to overfeed. See that the drinking water is clean and fresh at all times. A good supply of green stuff and a good roughage like bran mash, should be constantly before the fowls. If possible, do not allow pools of stagnant water to stand about for the fowls to drink from. Do not crowd too many fowls in one roosting place, and see that the houses have plenty of fresh air and sunshine.

SHEEP

Some flock owners consider it a feasible practice to breed ewe lambs the first year. While perhaps conditions alter cases, I do not believe it advisable to breed ewe lambs until they are two years old and have reached full maturity. It is true that some breeds of sheep come to maturity much earlier than other breeds, and again some individuals in all breeds mature much more rapidly than others, but I have always found it poor economy to mate sheep of any breed, too young.

The first years of the life of growing animals is a most important period and I believe more depends upon this period of growth and development than any other time. When animals are young they should be given every possible chance to grow large bone, strong muscle and high vitality. Mating too young reduces strength and life-giving qualities and ultimately weakens the power of profitable mutton and wool production.

Mating too young impairs constitutional development and makes sheep more susceptible to minor ailments and diseases. Sheep of low vitality do not possess the essential physical strength to overcome attacks of disease and while they may not succumb they are apt to prove unprofitable. By good care and feeding while the ewe lambs are young, more can be accomplished in building up strong, robust, disease-resisting constitutions than at any other time in the life of the lambs crop.

I have never practiced mating ewe lambs, but on several occasions I have observed instances where ewe lambs were mated the first year and I am convinced that lambs from ewe lambs are generally weak and puny and low in vitality. Then, too, the ewe lambs never recover from the strain of reproduction when bred too young, as food and strength intended by nature to make bone and flesh has been required in growing and nursing the offspring.

The flock owner who is desirous of building up a fine, attractive and profitable flock of sheep will look a year or two ahead and so manage his ewe lambs that when they have come to full maturity they will be strong, robust, and have the power of delivering strong lambs. Give the ewe lambs the best of care.

CANADA SPENDS $108,000,000 IN EDUCATION

Canada's appropriations for education increased from three and a quarter millions in 1871 to one hundred and eight millions in 1921.

The chart also shows, at left, public school attendance, 1891, 129,600; 1911, 235,600; 1921, 355,500. University students, 1891, 3,700; 1915, 16,500; 1921, 34,700. Teachers and professors, 1891, 3,700; 1891, 23,400; 1921, 63,300. Delinquency, 1891, 19 per cent.; 1901, 14.4 per cent.; 1921, 10.5 per cent.

Home Education

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

Do You Appreciate Your Children—By Helen Gregg Green

I happened to be chatting at my neighbor's across the way, when her little daughter Hilda, and her niece, a year older, came home from school.

"Look at my report, Aunt Maybelle," said Marie, thrusting her report at her aunt.

"And where is yours, daughter?" Hilda's mother demanded.

"Oh, darling, don't call me 'daughter,," evaded Hilda.

Then coaxing the child's report card from her, the mother began to scrutinize it.

"I suppose you've disappointed me again," she exclaimed, while Hilda stood pulling nervously at her little handkerchief.

"Why is it," the mother asked, "that one member of the family has all the brains? Oh, Hilda, this is too disheartening!" she added.

"But look, Mrs. Field," begged Hilda, handing me the report, "Don't you think my art grade is good?"

It was excellent, and so was her music grade, both of which the mother seemed to have ignored.

A few days later I met Hilda's teacher.

"How is my little neighbor, Hilda, getting along in school?" I inquired.

"Well," the teacher hesitated, "I don't know. There's something wrong. Some one is killing that child's spirit. I can't fathom it. She has a beautiful voice, quite the loveliest in the room, but the other day I noticed she was not leading the children in the singing as usual. That afternoon I called her to me, as she was washing the board. I asked, 'Why is it, dear, that my little girl hasn't been singing lately?' And to my surprise, she began crying, 'I can't sing. All I do is to wish I could get grades like Marie's'."

I said, "Oh, I thought so!"

And Miss Reid, seeing I was interested, continued.

"Poor little child! She has tried so hard, and she does good work in school. As for her cousin Marie, she is a brilliant child, but she is not a lovable one. I had several unfortunate experiences with her, while Hilda," her brown eyes danced, "is the pride of my heart. She has, oh, so much personality."

And then I told her the little incident of the report.

"Ah, at last we have the answer. Well, I don't need to go down town, anyway. I'm going to see Hilda's mother," she declared.

The next day my neighbor across the way came to see me.

"Oh, what a foolish mother I've been," she said, "breaking the spirit of my little girl. I am so grateful to her teacher for opening my eyes. I have learned there are other assets besides high grades. I guess—I—didn't appreciate my little girl."

And I thought, "I wonder how many of us do appreciate our children?"

Rainfall Affecting Potato Rot.

Very careful records of the rainfall at the College have been kept by the Department of Agricultural Physics in each of the past sixteen years. In comparing the amount of rainfall during the months of July, August and September with the amount of rot in the potato crop in each of the past sixteen years some interesting information has been obtained. The annual amount of rainfall for the three months referred to for the eight years in which there was no rot was 7.1 inches, for the four years when there was a moderate amount of rot 9.8 inches, and for the four years in which the rot was abundant 11.7 inches. The amount of rainfall, therefore, appears to have a very marked influence in making conditions favorable or unfavorable for the development of rot.

Storing Potatoes.

If potatoes are grown only for home use the crop is usually stored in the cellars of the houses or of the barns. Occasionally potatoes are stored in pits. When the crop is grown commercially, however, it is generally placed in a potato storage cellar erected for the purpose. In all cases it is important to store only well sorted, sound, clean, dry potatoes and to keep them constantly in a dry, cool, dark and well ventilated place. The temperature usually recommended for the best results is from 33 deg. F. to 35 deg. F. It is stated that potatoes when placed in storage shrink about two per cent. per month for a period of six or seven months.

To Get Rid of Vermin.

When animals are troubled with vermin, dip them in a bath of commercial coal-tar dip made and used according to directions given by the manufacturer. In winter dust infested parts of skin with powdered pyrethrum, flowers of sulphur, and tobacco. Powdered sabadilla is effective for lice of cattle, but is poisonous if licked off. Blanket animals after applying above powders. Use fluoride of sodium on poultry.—Dr. A. S. Alexander.

Measuring Auger Holes.

While boring holes in wood with the brace and bit it is possible to determine with a fair degree of accuracy the depth of the bored hole without measuring, simply by counting the turns of the brace and allowing sixteen turns for each inch of depth. The pitch of the screw tip, which feeds the auger forward, is a sixteenth of an inch, and the cutting blades advance this much for each turn of the brace. This method is quite a time saver.

Hoe all grass and weeds away from the trunk of the tree. This destroys a winter home for mice.

An ad man has a tip for farms with roadside markets; start your signs four miles or so down the road and lead the buyer to your door.

Better put a little good rich garden soil in the cellar or where it will not freeze. It will come in handy to start those early vegetables and flower seed in next spring.

In spite of the fact that milk is seven-eighths water, it is one of the most important of foods. It is suitable for persons of all ages, and excels other foods by reason of the variety and quality of material it furnishes the body.

In scalding a hog, try laying it on a platform of any sort, cover one side with one or two thicknesses of gunny sacks, and pour boiling water on the sacks. Leave a few minutes, then scrape the hog. Repeat on other side. The sacks retain the steam and scraping is an easy matter. Simple—thorough.—E. S. P.

THE CHILDREN'S HOUR

WHY ROLLY RABBIT LIVES ALONE.

Rolly Rabbit made a fine nurse and doctor. Soon he had Bruin very comfortable; so comfortable, in fact, that he began to forget about his pain and remember that he was really hungry.

Rolly Rabbit was hungry, too. After he had done everything he could to ease poor Bruin's bee stings, he said, "Let's have breakfast. I'm quite hungry. I had just gone out to gather a little wood for the morning fire when I heard you call 'help'."

"How grateful to you I am for helping me. I never could have gotten away from those horrid bees. I was just after some honey for my breakfast when they came after me. Now you have made me so comfortable, I really do feel hungry again."

In short order, Rolly Rabbit had breakfast ready. There was porridge and fresh dewberries. Just a fine breakfast! As these two odd friends ate, they talked of many things.

A strong friendship seemed to have grown up between them and soon they were chatting like old cronies.

"I don't see why those bees came after me so," said Bruin. "My mother got honey just that way last winter and they didn't bother her."

"Very true," said Rolly Rabbit, "but this is summer time. Didn't you know that bees went to sleep in the winter time?"

"Say, now that you remind me, I do remember my mother having told me about that. You are so clever, Rolly Rabbit. But I believ I shall have that sweet-tooth of mine pulled before it causes me any more trouble—"

Bruin never finished that sentence. He didn't need a sweet-tooth to cause him further trouble. Just as he reached for his cup of water, he clumsily caught his sleeve on the spoon which he had carelessly left in his porridge and now the whole dish was bottom-side up in his lap.

"Oh, what a mess!" said Bruin as he tried to scramble the most of it back into his dish with one hand. "I really must be more careful with these big hands of mine. Just look at your nice clean tablecloth. I am so sorry."

"Oh, we all make mistakes, and it will come out in the wash," comforted Rolly Rabbit as he bustled around cleaning up the spilled food.

But down in his heart, Bruin knew that it did matter. He had been careless again, forgetting his table manners when Rolly Rabbit had been so kind to him. He remembered now how many times his mother had corrected him for the same thing. Right then he resolved that it should never happen again; and it never did, for it was a lesson for Bruin.

A Human Incubator.

The pastor of a church at Gadsden, Ala., was calling upon a sick member who lived out of town. Lavinia—or "Viney," as she was called—had inflammatory rheumatism, and was confined to her bed, where every movement meant acute pain.

Upon this occasion, her eyes were alight with interest. The mother explained, "Viney's chickens are hatching to-day." Upon inquiry, it developed that a number of eggs had been placed about Viney's motionless, fevered body, and the downy chicks were produced in evidence.—J. S.

Don't try to grow house plants in a very warm room with a dry atmosphere, for it can't be done.

Cicero held that there were two kinds of contentions, one by reason, one by force; the former is proper to men, the other to brutes.