

Farm Crop Queries

CONDUCTED BY PROF. HENRY G. BELL

The object of this department is to place at the service of our farm readers the advice of an acknowledged authority on all subjects pertaining to soils and crops. Address all questions to Professor Henry G. Bell, in care of The Wilson Publishing Company, Limited, Toronto, and answers will appear in this column in the order in which they are received. When writing kindly mention this paper. As space is limited it is advisable where immediate reply is necessary that a stamped and addressed envelope be enclosed with the question, when the answer will be mailed direct.

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L. G.: I set 65 trees (apples, pears, cherries) two years ago; mulched each fall with barnyard manure. Trees make a fair growth; ground grows medium intercrop. How much commercial fertilizer should I apply to each tree? Have some 2-10-2 on hand, or would nitrate be better?

Answer: As your trees are young the fertility treatment should be entirely planned to force growth as rapidly as is consistent with well rounded material, being careful not to force wood growth to such an extent that the twigs will suffer during the severe cold days of winter. First, therefore, advise the use of a fertilizer carrying 3 to 4 per cent. ammonia and 10 to 12 per cent. phosphoric acid. 2-10-2 fertilizer is better adapted to grain crops, but could be used with profit on orchard crops grown on a sandy loam soil. You have not mentioned the type of soil and my recommendations are made assuming that the soil is an average loam. The use of nitrate alone, I am afraid, would cause too rapid a wood growth, leaving the wood sappy and in such shape that there would be a tendency for it to suffer severely during heavy frost.

C. B.: What is the relative value for feed in ripp husked sweet corn and field corn?

Answer: Your question is rather indefinite. You may mean one of two things. First, what is the value of the fodder from sweet corn as compared with field corn? If this is your meaning the answer as given by Henry & Morrison in their book on Feeding is as follows:

Corn	Carbohydrates				
	Water	Ash	Crude Prot.	Fibre	Cellulose
Sweet	12.2	9.0	9.2	28.4	41.3
Field	9.0	6.5	7.8	27.2	47.3

Second, what is the value of the ear of sweet corn as compared with that of flint and dent corn? Here is the answer:

Corn	Carbohydrates				
	Water	Ash	Crude Prot.	Fibre	Cellulose
Sweet	9.3	1.8	11.5	2.3	67.2
Flint	10.5	1.5	10.1	2.0	70.9
Dent	12.2	1.5	10.4	1.5	69.4

Of course the protein, carbohydrates and fat are the feeding constituents of value. The differences in these figures will give you the answer to your question.

S. H.: I can't get clover or alfalfa to start on my soil. The soil is rather light sand. Would like to know what I should do to get clover and alfalfa to grow. Can alfalfa and clover be sown in the fall with rye?

Answer: I would not advise sowing alfalfa or clover in the fall when seeding fall rye, but you could very well sow the alfalfa and clover seed on top of the stand of rye in the spring as soon as good growth has started. By a light harrowing of the crop you could readily work the seed sufficiently deep into the soil. Excellent stands of clover and grass seeds have been obtained by seeding at such a time either on rye or fall wheat. In preparing your ground apply a good dressing of lime this fall, so as to sweeten the top areas of the soil where the young crop will grow. When seeding your rye apply 300 lbs. per acre of a fertilizer analyzing 3 per cent. ammonia, 8 per cent. phosphoric acid and 8 per cent. potash. This material will give the rye a good vigorous start and will provide readily available plant food for the young clover and alfalfa as soon as you see it in the spring.

T. B.: Please advise me what causes beans to get bugs in them, and what becomes of the bugs after they come out of the beans? At what stage are these eggs laid in the beans? If the beans were carefully picked over and beetles would the good ones become bug-eating? Is there anything that can be done to stop these bugs after they once get into a bunch of beans?

Answer: The bugs in your beans are likely the Bean Weevil. This insect passes the winter as a fly, appearing early in the spring after the beans have flowered and the young pods have formed. It lays its eggs on the surface of the young pod. As soon as these eggs hatch out they bore into the bean seed where the young larvae feed and grow rapidly. The next step of development is gone through inside the channels of the bean where the young larvae has been feeding. The husk or pupae in this cell and emerges as a full grown adult late in July or early August.

There are various plans practiced to combat the insect. One is to heat the beans up to 145 deg. F. as you have suggested. This kills the insects that may be in the beans. Another method is to put the beans into an air-tight barrel or box and put in a dish of carbon bisulphide. About 1 lb. of this chemical for every 100 bushels of seed is the quantity to use. The bisulphide is a very volatile liquid, that is, it changes to gas quickly. It is very disagreeable in odor and is quite inflammable, so that care must be taken not to have any fire in the vicinity when treating the beans. The treatment is best carried out by pouring the bisulphide into saucers or deeper receptacles which are set immediately on top of the beans. After the liquid has been placed, cover the barrel with several thicknesses of bag or clover woven material, or put an air-tight top on the barrel. Since the fumes from the carbon-bisulphide are heavier than air they sink down between the beans and kill the insects which have formed within the seeds.

Some bean growers find it good practice just before seeding to empty their seed lightly into a tub or bucket of water. The infected seeds are usually so light that they float. These can be skimmed off and the remaining seeds spread out to dry immediately.

Wheat and Flour Storage.

Among the most interesting tests carried on by Dr. C. E. Saunders, Dominion Cerealists, described in his recent bulletin on Wheat, Flour and Bread, is that of the effects of storage on wheat and flour. These tests covered a number of years, as many as thirteen as a matter of fact. He remarks that there seems to be a general opinion current among millers and bakers that flour from new wheat is of inferior quality for bread-making, but that in the course of a very few months, whether kept as wheat or flour, a considerable change takes place, and that it is believed that flour retains its highest baking qualities only for a few months. Dr. Saunders found that flour from Yellow Cross wheat, made from the 1905 crop, showed a baking strength of 86 in March, 1906, and of 104 in February, 1907; that Tasmania Red showed a baking strength of 95 in February, 1907, and of 101 in March, 1908; and Downy Riga, grown in 1906, and strength of 81 in February, 1907, and of 104 in February, 1908. In order to study more thoroughly this important problem of storage, seven kinds of wheat were chosen from the 1907 crop at Ottawa, and when baked indicating when ground and when baked showing that wheat generally improved by keeping a few years. Huron kept a month after grinding showed 82, kept three months after grinding in 1913 it showed 101 of baking strength. Red Fife under the same conditions showed 88 in 1908 and 104 in 1913. Yellow Cross showed 74 in 1907, the year each sample was grown, and 102 in 1913. Stanley "A" showed 76 in 1908 and 96 in 1913. Chelsea showed 84 in 1907 and 96 in 1913. Dawson's Golden Chaff showed 71 in 1907 and 91 in 1913. Turkey Red showed 88 in 1909 and 101 in 1913. Some samples showed better in intervening years after only one month from grinding. Red Fife, for instance, in 1910 showed 108, Stanley "A" 100 in 1911, Chelsea 102, also in 1911, and Turkey Red the same year 103. Storage of flour from only three kinds of wheat is tabulated owing to the destruction of other samples. These show that after the best year a gradual decline in baking strength takes place. All were ground September 16 or 17 in 1907. In January, 1910 and 1911 the baking strength of Huron had reached its pinnacle, namely 107; in 1912 it had decreased to 87. Red Fife's best year was 1910, when the strength was 109; in 1921 it was 95. The best year for Yellow Cross was 1911, when the strength was 111. In January, 1921, it was 100. In 1907, the year of grinding, Huron's strength was 86, Red Fife's 98, and that of Yellow Cross 74. The decline of the baking strength after the peak year had been reached was more gradual in the case of Red Fife and Yellow Cross than in that of Huron.

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Storing the Potato Crop.

The lightness of the potato crop in Ontario and the eastern provinces owing to the long continued drought earlier in the season will render it profitable to save all agricultural surplus. Reports from the field indicate that even the light crop being harvested is in many cases affected with rot. It is useless to put away in permanent storage potatoes that are affected with disease because those that commence to decay are likely to contaminate the rest of the pile. If potatoes are found to be diseased at digging time a good plan is to fix up a place in the barn where it is dry and where frost can be kept out for a time, and spread the potatoes in shallow piles. If, however, the crop is small and no rot is evident, the storing can be done as well first as last in the cellar. Boxes or crates make better receptacles than deep bins and are much to be preferred to keeping the potatoes in bags. Moreover, when the potatoes commence to sprout, as they will do during the winter, more especially in cellars where a furnace is operated, they will be more quickly noticed when in boxes and can be more expeditiously handled from the boxes than if the whole pile has to be turned over in order to take off the sprouts. To prevent the sprouts are removed as they appear the better the potatoes will keep, but the better plan is to keep the potatoes in the cool and dark that sprouting is discouraged. It is highly important that potatoes be stored only when quite dry.

It will be well, more especially a year like the present, to see that the storage is as perfect as possible. A dry, well-ventilated cellar is the best sort of storage to provide. The expense of providing a good system of ventilation would be soon offset by the better condition in which the potatoes keep. Experiments carried on at Ottawa would indicate that very good results are obtained by providing air space below and around the potatoes stored. To do this slats should be nailed a little distance apart about four inches or more from the wall. This will give a circulation of air behind the pile. A temporary floor should be put down about six inches above the permanent floor with cracks between the boards. This will permit air to circulate under and through the pile. Then if large quantities are to be stored together ventilators of wood made of slats and running from the top to the bottom of the pile could be put in here and there through the pile. This, with the ventilation afforded at the sides and bottom will give very good conditions for storing. If, however, as already pointed out, it is more satisfactory to keep the potatoes in crates or boxes more particularly if disease is feared. The temperature in the cellar or store house should be kept as nearly 33 to 35 degrees Fahrenheit as possible. Not only will the disease and sprouting be delayed but the tubers will keep much firmer than if a warmer temperature is allowed. To keep the temperature down before hard freezing weather arrives, it is well to admit outside air at night, closing the windows or other openings during the warmer hours of the day.

Don't forget—the housewife is an important party in the farm business. The sting of a bee is only about one-thirty-second of an inch in length.

Among the Women's Institutes of Ontario

Getting Ready for the Conventions. These are busy weeks among the Institute Convention Committees of rural Ontario. Five annual conventions must be held this autumn to meet the growing needs of the Branches. One will be at Port William for the northwestern area, another at North Bay in the north, and three others at Ottawa, Toronto, and London for the three divisions of old Ontario.

All are stressing the study of methods of improving the local branch, the court of last resort in Institute work; also how the various Government departments, Public Health, Education, Child Welfare, and Agriculture may more effectively serve the home-maker and country community. The close and effective partnership between the local Institutes and the Institute Branch of the Department of Agriculture has resulted in a very efficient bit of administrative machinery whereby the busiest women in the busiest neighborhood can avail herself of the best results of the work of the college and other provincial departments. Is the baby sick? There is Dr. MacMurphy's Canadian Mother's Book to be had for the asking in every Institute.

How much should it weigh? How should it be fed? There is an attractive set of Child Diet booklets available from the Public Health Department.

Does the engaged girl want to know "How to build the Canadian home"? There is a preparation that delightful Home Series, "The Little Blue Books" which again may be had for the asking by any Institute from the Department of Health at Ottawa.

Do the girls want a place? There is the Girls' Branch or Circle.

A Community Party. The successful Women's Institute believes vigorously in a balanced life and a balanced Institute program. "Something to see, something to hear, and something to do, and you will have an interesting meeting," say the members. Demonstrations accordingly are in high favor.

The St. William's branch gave a remarkable demonstration, all un-

known to themselves, to the rest of the province of a community party at their last meeting. Several new families, some of them from outside our own country, had moved into the neighborhood, one family were leaving, another had been bereaved. It was the beginning of another Institute year's activities after the harvest and the holidays. Welcome, send-off and sympathy were all expressed in the evening's doings.

Every member of every family was invited, also a neighboring branch. The young people responded in a way that was a real inspiration. The two orchestras played. "Old girls and boys" dropped "over home" from cities and towns and delighted the home folk with the part they contributed as their bit in solos, piano and vocal, readings, and short story talks. A tender touch was the omission of dancing and the heavy orchestral music out of consideration for those who had been bereaved.

The outstanding feature of the evening was the President's address in which she outlined anew the aims and objects of the "For Home and Country." She referred briefly to the remarkable but, as she said, past, Institute achievements, in the Great War, and laid before the gathering the plans for a better and happier community for the coming year, and improved homes. These plans included teaching to advantage modern home-making and the use of labor-saving machinery and methods, helping the girls of to-day prepare to take over the responsibilities of the future, beautifying the community centers, getting wholesome recreation and educational entertainment for this winter, securing the Chautauqua for the five winter months, welcoming the newcomers, and carrying out in practical ways the principle of the Institute, co-operation.

After a merry time over the refreshments, the party broke up at eleven o'clock, refreshed and benefited by a wholesome evening's recreation and wondering "where the time had gone so fast."

And there was nobody to feel badly because he "hadn't been invited to the party."

BABY'S HEALTHOGRAM

In the interest of Baby who too often knows what it is to be dandled and kissed but is made to suffer in its "little healths," we publish the following good Healthogram:

I AM THE BABY
I am the Baby.
I am the youngest institution in the world—and the oldest.
The earth is my heritage when I play.
I come into being, and when I go I leave it to the next generation of Babies.
My mission is to leave the earth a better place than I found it.
With my million little brothers and sisters I can do this, if the World does not impose too many handicaps.
Now I need Pure Milk and Fresh Air and Play.
When I am a little older I shall

BABY WILL BE WELL AND HAPPY IF HE—
Has the right food.
Is kept dry and clean.
Sleeps alone in a quiet, cool place.
Is given pure, cold water to drink.
Has his meals served on time.
Breathes fresh air, day and night.
Is dressed according to the weather.

BABY WILL BE UNHAPPY AND CROSS IF HE—
Is allowed to go thirsty.
Is fed at the family table.
Is not kept dry and clean.
Is taken to the movies.
Is teased and made to show off.
Is dosed with medicines.
Is bothered by flies and mosquitoes.

IT IS EASIER TO KEEP BABY WELL THAN TO CURE HIM WHEN HE GETS SICK.

Hogs

Usually at this season of the year there is an increase in the amount of dry disease in the swine herds. The aggravating cause often is the change from dry to green corn. Hogs accustomed to dry feeds all summer are put upon green corn quickly without being allowed enough time for their digestive systems to become accustomed to the radical change in feed. Then disease which had not been able to get a hold upon the hogs when healthy begin to affect the weaker ones of the disease attacks. Prevention of such radical feed changes. By allowing ten days or two weeks time for the change to green corn with a gradual elimination of dry grains, there will be less chance of lowering the animal's resistance to disease. Feed also with the green corn some protein feed, such as tankage or linseed meal. Experiments show beyond a doubt that hogs so fed are healthier and make more rapid and cheaper gains than those fed on corn alone.

Wanted—A Man to Lead.

"There isn't a lad but wants to grow Manly and true at heart,
And every lad would like to know
The secret we impart.
He doesn't desire to slack or shirk—
Oh, haven't you heard him plead?
He'll follow a man at play or work
If only the man will lead."

SELECTING THE BREEDERS

There are two ways of selecting good breeders; one is by trapping and the other by observation and study. That traps are a part of the greatest importance in this particular has been demonstrated by the experimental stations and by others who make poultry raising a business. In trapping for the selection of breeders, attention must be given to other factors besides ability to lay. For instance, a hen lays 200 eggs in a year, but has had some contagious disease earlier in life, she should not be permitted in the breeding pen because the disease is liable to be transmitted to her offspring. A hen with a trapnest record of 200 eggs, and with ordinary precaution one can not go far astray in selecting her for the breeding pen.

In selecting by observation, health and vigor must be the main factors. The individual selected should be an erect and carry her body in an erect and proud fashion. The comb should be bright red in color, soft and velvety; the eyes should be steady and clear. A fowl that stands moping around or roosts in the daytime is either weak or sick, and should never be selected, no matter what her record may be. Although feathers are only a covering for a bird, some attention must be paid to them also. Good feathered birds not only look better but sell better. Size and shape are also important in a dual-purpose hen; good, heavy layers, of large size and uniform shape, with vigorous constitutions, are the ideal stock to breed from. A good layer can invariably be distinguished by her actions and willingness to scratch for food. If examined on the roost at night, it will be found that she has a full crop. This, too, is a good indication of health. A hen may be compared to a small factory—food is the raw material and eggs are the finished product. The output is greater when the factory runs efficiently and consumes larger quantities of raw material. A soft, red comb, lying to one side (in single-comb varieties), a short,

Bedtime Stories

My Garden.
I have a little garden.
I planted lots of seeds
And watered them and watched them
And pulled up the weeds.
And now I have a pansy
And a pumpkin and a bean
And three tall hollyhocks
With leaves big and green
And best of all, a daisy
I dug out on the hill.
I dug it up and brought it home,
And it is smiling still!

The Frog Pond.
I wonder what is down that way,
In the water brown and deep?
What makes the little goggies say,
"Kr-r-reke, kr-r-reke, kr-r-reke?"
They hop along the bank and plunge,
But only they rise to speak.
I think they say, "Come in and play!
"Kr-r-reke, kr-r-reke, kr-r-reke."
I wade around; they keep so still
I cannot hear a peep.
When I come out they raise a shout,
"Kr-r-reke, kr-r-reke, kr-r-reke!"
They seem to play a funny game;
It's like our hide and seek.
Look, there sits Tad behind a pad,
And calls, "Kr-r-reke, kr-r-reke!"
Ambition is always attained by
travelling a tedious, tiresome road.

Bulb Growing.

In many parts of Holland, during the blooming season, the country appears like a huge flower garden. Up to the time of the late war, the choicest varieties of flowers grown from bulbs came from Holland. The flower farmers require much patience, as some of the choice bulbs take as long as seven years to mature. Many other bulbs, from three to four years. The gathering, sorting, packing and shipping are all important, and it requires skilled workers. Since the war, a greater interest in bulb culture and good results are being accomplished. Flowers and shrubs greatly add to the beauty of a farm home.

Keep plow colters sharp, especially on trashy ground. Sharp colters properly adjusted assure clean furrow walls.

It took the Roman farmer four and a half days to raise a bushel of wheat. The Canadian farmer does it in nine minutes.

What would you think if your wife left her sewing-machine out in all kinds of weather like you do your farm machinery?

Storing pumpkins: Place them in a room or barn where they will not freeze or become too damp. Set them on a wire netting that is fastened on a frame or on an old wire cot or bed-springs that clears the floor by two feet. The free circulation of the air around the vegetables prevents decay.

Three farmerettes attired in overalls, flannel shirts, high boots, etc., arrived at Moose Jaw recently. They are Miss Madge Simpson, Miss Doris Horn and Miss Ann Gueak, graduates of the Angus Experimental Farm of British Columbia. "What do they do?" they were asked. "Harrowing, stooking, binding, breaking, plowing and riding on any kind of a horse," was the answer. "We love the work and wouldn't live in a city," they declared.

Saskatchewan's live stock associations are province-wide and engage in many activities for the betterment of the livestock of the province. Annual cattle, sheep, swine and horse sales are proving more popular each year. Buyers from every section in the province attend these sales for the purpose of securing purebred sires or foundation females as the case may be. These associations also make important investments in the boys' and girls' stock judging and feeding competitions.

UNANSWERED

"I've come," Mrs. Hilton said, "to ask you to tell me the best books about prayer."
Dr. Mercer's answer was prompt. "There's only one best book about prayer, and you've had that all your life, Mrs. Hilton."

Mrs. Hilton's tired eyes filled with tears. "But I've prayed and prayed and never got an answer. Surely prayer is the most important thing in the world—real prayer—the kind that gets answers. And I do want to learn. I've bought all the books I could find—"

"Burn them," Dr. Mercer advised her crisply.
Mrs. Hilton stared at him. "Burn them?" she cried.
"Yes, but understand me, Mrs. Hilton. There are some valuable books on prayer that have helped many people. But you might read them all the rest of your life and never learn to pray. Prayer is a matter not of study but of practice."

"I don't know what you mean. I always pray. 'Thy will be done.'"
Mrs. Hilton's voice sounded hurt.
"I am going to ask you some questions, Mrs. Hilton," Dr. Mercer said. "I don't want you to tell me the answers. I want you to go home and think them over and see whether somewhere among them you do not find an answer to your puzzle. For you are right about the importance of prayer. When you pray for certain things do you pray in a spirit of love toward everyone so far as you know? The first words are 'Our Father.' Then do you care deeply about the coming of God's Kingdom upon earth? Are you working for it, giving for it, praying for it and trying to make it come everywhere that your influence reaches? Is your first concern not to fail God in any of the tasks and the opportunities that He has put before you? Are you pressing the great sorrow of the world to your heart until it hurts, and you have to go and tell God about it? Or have your prayers been only for yourself and one or two who are dear to you?"

"You make it sound so—hard," Mrs. Hilton faltered.
"Hard at first perhaps while we are wrestling with the envy, the jealousy, the bitterness and the selfishness that come between our hearts and God's great love; but not half so hard as going year after year without the knowledge that the infinite Father is working through us. And when that knowledge comes—when we surrender the last thing between us and it, and his love comes flooding in—then we shall not need any soul on earth to teach us how to pray, dear Mrs. Hilton."

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While Others Stay at Home

With dad and me it's half and half.
The cow I own was once his calf.
I'm going to stick right where I am,
Because my sheep was once his lamb.
I'll stay with dad—he gets my vote,
No town for me—I'll stick right here,
For I'm his tractor-engineer.
It's "even-split" with dad and me
In a profit-sharing company.
We work together from day to day—
Believe me, boys, it's the only way.

The city is a place where people must dwell; the country a place where people may live.
The ruber farmer of ten years ago had to shave off his whiskers the other day because they kept blowing into his eyes when he drove into town in his \$5,000 hypercar, and he was constantly running over newspaper wiseguys who had been poking fun at him.