Farm Crop Queries

Conducted by Professor Henry G. Bell

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. 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.

Fertilizers and Early Ripening.

The lesson of the past year is clear. Of the 450,000 acres of corn in Ontario, but a comparatively small per cent. was fully ripened when early frost cut short the life of the crop. Seed corn is consequently at a premium.

Granted that sufficient seed corn can be located to care for the 1918 planting, is is surely high time, it is surely good business for Ontario farmers to do all they can to mature the 1918 crop.

Moreover, farmers who are fortunate enough to have silos know that the feeding value of the silage is materially improved if the corn is fairly ripe before it is cut.

How is the situation to be helped? How can Canadian farmers avoid a repetition of this disastrous condition in 1918? The answer is by abundant fertilization of the crops, with fertilizers for grain crops, high in phosphoric acid. This advice is amply supported by experimental evidence.

Director Hall of Rothamsted wrote in 1910: "It (phosphoric acid) is in some way closely bound up with grain formation, being always found in greater proportions in the reproductive parts of the plant than elsewhere. This ripening action is very clearly seen in the Rothamsted experiments on barley; the plots without phosphoric acid being, as a rule, about a week behind those which received this fertilizer . . . As might be expected, this ripening effect of phosphoric acid will be particularly seen in a wet year when the crop is late to harvest."

A diagram in connection with these statements shows how the fertilized crop matures earlier and more uniformly than does the unfertilized.

Ohio Bulletin 182, published in 1907 has a frontispiece showing a bird's-eye view of the ripening wheat plots at that station. The foot-note reads: "Wheat on section C of the 5-year rotation as seen from the tower of the main building about a week before harvest in 1905. This picture shows the early maturity of the plot receiving acid phosphate as part of the fertilizers. The average unfertilized yield of this wheat was only 5 bushels per acre, but plots 11, 12, 14 and 15 yielded 24, 25, 22, and 21 bushels respectively."

In the Middle West of the United States it is the corn crop which is most effected by early frost and slow growing season. Probably the necessity of an ample supply of available phosphoric acid for growing corn is best shown by the exhaustive studies made by Houston and Jones of Indiana and published in Purdue Agricultural Experiment Station Bulletin No. 175. An area of corn was planted on May 28th; the variety used, Riley's Favorite. The soil was very carefully prepared. It had in the past ten years, received one liberal dressing of stable manure, and three applications of acid phosphate and muriate of potash. That the land was in a fair state of fertility was shown by the average yield of 76.3 bushels of corn per acre. Frequently the yield of corn is cut short by drouth, so to avoid this contingency the experimenters arranged to irrigate the corn once a week. Samples of the crop were taken periodically from June 16th to November 12th. These were subjected to chemical analysis which clearly showed the amount of nitrogen, phosphoric acid and potash taken out by the growing crop at various stages. These researches showed that the pounds of phosphoric acid taken out by ten thousand plants rose from nothing to 4.3 pounds by July 24th; almost 14 pounds early in August; reaching a maximum of 41.8 by October 8th; and receding to 40.2 by November 12th. The big practical point, however, is brought out by the figures shown by the analysis of the plant at husking time. This showed that 86 per cent. of the phosphoric acid removed by the plant was found in the corn ears. Bernberg experiments show that when wheat is ripe 76 per cent. of the phosphoric acid removed by the plants is found in the wheat kernels.

But the Indiana experiments show more than the final analysis of the crop. As indicated, these experiments reveal an increasing need for available phosphoric acid from early in August until the corn is ready to husk. This is the all-important point for the farmer, especially in late, cold seasons. If the soil is short of this constituent which is most largely responsible for the ripening of the crop, the result is immature corn and large quantities of inferior seed for the following year. Fertilizer agents and progressive farmers can render a great national service at this time by so impressing the foregoing facts so that corn growers in general will actually pay attention to this means of hastening the maturity of their crops.

The Dairy

The food value of alsike clover for cows does not differ materially from that of red clover. As a matter of fact, there is not enough difference in the food value of the two plants to make any difference in compounding a ration; one would take the place of the other. Alsike makes just as good hay when it is cured under just as favorable conditions. Cattle like it just as well. But in their growing habits, red clover and alsike vary considerably and a farmer would take this into consideration, whether he grew alsike or red clover. For instance, alsike will grow in soil that is too moist and too sour for red clover to thrive in. Alsike clover grown alone is much more inclined to lodge than red clover because it has a weak or reclining stem. It is a pretty good practice to mix some alsike clover in with some red clover in seeding down, for on much of our soil a portion of the field will be more adapted to the growth of alsike clover than of red clover, consequently, one is reasonably sure of getting a larger yield of hay if he mixes them than he would to grow either one separately. They do not mature just at the same time, yet the difference isn't enough to prevent cutting both plants at the same time without very much lessening in the value of either as a food. We most always mix a little alsike clover seed in with the red clover seed for the reason stated above.

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Poultry

The production of eggs in winter from pullets, and to some extent from hens, can be greatly stimulated by good methods of feeding, housing and handling. Very few eggs are secured on the average general farm during the fall and winter when eggs bring the highest prices. Poultrymen, however, by better management secure a fair production during these seasons.

In order to get the greatest egg production in fall and winter it is essential to have well matured pullets which were hatched in March or April.

Feed the grain in a deep litter on the floor and make the hens exercise for all of their grain. The mash may be fed either wet or dry, and should be so regulated that the fowls will get about equal parts of mash and of the starch grains. It is necessary to give the fowls plenty to eat to get good results, but the birds should always be eager for each feed. In cold weather feed about one-third of the scratch grains in the morning and two-thirds at night, in which way the hens are forced to exercise more than if given all the grain they desired at the morning feed. Scratch grains, mash or ground grains, animal protein, green feed, grit and shell should be supplied in the winter.

Clean the dropping boards at least once a week and spray the roosts once a month during the winter with kerosene or some commercial preparation for killing mites. Have a good supply of sand or dry dirt on hand to use on the dropping boards during the winter.

If any of the birds develop colds put as much potassium permanganate as will remain on the surface of a dime into a gallon of water and keep this material in their drinking water for several days or until the symptoms of the colds have disappeared. Remove any sick birds from the flock as soon as noted and treat them in coops by themselves, or kill and bury them if they are not worth treating.

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COOKING FOR RURAL SCHOOLS

By Lola D. Wangner

"I have found," said a school principal, "that in country schools which have the hot-lunch system the pupils do 75 per cent. better work in the afternoon than when they have only a cold lunch."

To the inexperienced young teacher, in her isolated one-room school, the task of introducing this hot-lunch system seems almost too great to undertake. To her I can say that while she may find it difficult, she will also find it far from being impossible.

The first step is to try to interest the parents, and the best way to do this is to call a community meeting at the school house. This, of itself, is a big step toward helping her school, for the average farmer is glad to take an active interest in school affairs if he is asked to. In order to prepare for such a meeting the teacher must study up this work and be prepared to talk about it. She must write to her provincial agricultural college, asking not only for helpful bulletins on the subject of hot lunches but for any and all school helps and suggestions that will aid her.

Enlisting Co-operation of Parents

She must be thoroughly prepared to explain to the people in her district the benefits this system will bring, and to tell of her plans for carrying it out. First, supplies must be secured. The teacher should try to interest the farmers and find out just how they will co-operate. One may donate a basket of potatoes, another, one of carrots, several may agree to take turns supplying milk, still others may give canned vegetables, onions, fruit, and so forth, to help the good cause along.

In nearly every case, the second year finds the pupils eager to grow their own vegetables and, in this way, school gardens may be begun.

Following the installation of the school gardens, comes the next logical step of canning the products of these gardens for the school lunches of the coming year. And, I am sure, that school gardens will be merely starters for much actual work in improving the school grounds. Boys and girls are generally eager to work if they are properly directed and interested. They will soon decide that shade trees are needed in the school yard, that the yard needs cleaning up, and the outbuildings need to be painted and kept in repair.

In fact, the introduction of the hot-lunch system may lead up to as high a point of attainment as the teacher wishes to reach. She will find it an easy matter to make her school the centre of the community by bringing the home interest to the school. Her pupils will not only be able to do better work, but there will be a new interest with each noon meal.

The Necessary Equipment

Just how can a teacher in a poor, disinterested community establish this system? First of all, a stove, fitted for cooking and baking, should be secured. Where the school stove is not suitable, then an oil or alcohol stove with a portable oven should be provided. Each child should bring from home a bowl or cup and teaspoon and fork. The boys of the school may build a cupboard to hold the cooking utensils and the girls may make the dish-cloths and towels.

The following equipment is suggested for this work: Double boiler, kettle, sauce-pan, strainer or sieve, egg-beater, quart measure, measuring cup, can-opener, tablespoon, teaspoon, paring knife, vegetable brush, butcher knife, two dish-pans, potato masher, six fruit jars, six jelly glasses, water bucket, dipper, baking pan, tea kettle, dish-cloths, paper napkins. Where the box is obtained free, the cost of this equipment, including the oil stove, should not exceed twenty-five or thirty dollars. The teacher could get up a community entertainment to pay for this and arouse interest in her scheme.

The teaching of domestic science could be combined with the hot-lunch system, and, after a time, the girls might invite their parents or the trustees to a dinner they had prepared—another way of arousing and holding interest in this work.

How the System Works.

How can the teacher do this work without robbing her other classes of valuable time? By making this cooking supplementary work to the other classes. She need only serve one hot dish each day. This may be soup, cocoa, baked potatoes or apples, or something of the sort; whatever is decided upon should be worked into the other lessons. For instance, were she to serve creamed corn, then it could be made the subject of the daily nature talk.

Corn, wheat, rice, eggs, sago, and so forth, may be used in the same way as supplementary work in geography, physiology and hygiene. Sanitation follows as a natural sequence, care of cooking utensils, methods of dish-washing, cleanliness of hands in cooking and eating, and why these are necessary.

Two of the main factors in maintaining sanitary conditions are pure, fresh air and sunlight. Most rural schools are constructed with no regard for ventilation. Here, again, the teacher can help and teach her pupils to help. The boys can make skeleton frames to fit the windows. Over these sashes may be tacked muslin bags or double pieces of cheese-cloth. With a window at one side of the room lowered at the top and one raised from the bottom on the other side, and the cloth screens put in, there will be a supply of fresh air without a draft.

But to go back to the school-lunch problem.

"How shall I actually go about cooking a hot-dish for noon?" asks the teacher. The best answer I can give to this is the following account of how one teacher in a small rural school carries out this system:

Four girls are appointed each day for the preparation of the following day's hot dish, which is decided upon by the teacher. Four other girls are appointed to serve the meal, collect and wash the dishes. By taking two large girls and two smaller ones in each group, all the girls in the school are thus given a share.

The day I saw her, she served baked potatoes. After the morning exercises there followed a short talk on potatoes as this happened to be the subject chosen for the weekly composition.

What One Teacher Accomplished

The pupils were required to give definitions of some words used in this talk, and these same words were given out to the advanced classes for their spelling lesson. On the board were written ten short paragraphs stating the food value of potatoes, why needed in the diet, and so on.

The utensils put away, the girls took their seats and the day's regular work was begun. At the appointed time, without a work from the teacher, the fire was lighted and the potatoes put in to bake. When dinner time came, the pupils were dismissed for five minutes in the open air. During this time, the room was aired and four girls spread paper napkins on each desk, setting the pupils' lunch boxes on the desks with spoons and bowls holding the potatoes.

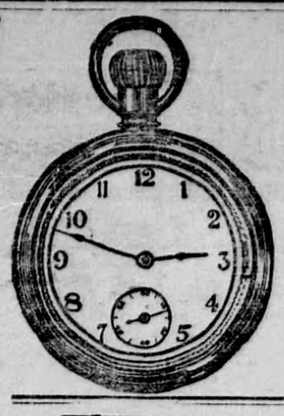
This particular teacher's school was in an isolated, non-interested district and her task had been a most uphill one. Her first task had been to invite all the mothers to her boarding house for a discussion of school matters. She tactfully introduced the subject of good school lunches and showed many leaflets and pamphlets she had secured.

Then she followed her talk with a delicious lunch, serving many varieties of dainty sandwiches, and they began to be interested. After that, it was an easy matter to tell them of food values and why they must vary the contents of the lunchbox.

That school has long since ceased to be merely a wooden building where children are unwillingly driven to study the "three R's." It has become the centre of its community, the leader of its social side and an active agent for good. All this came about because one woman saw the great possibilities in her school work.

Rollers for Chair.

For an invalid or afflicted child when one cannot afford a wheel chair take the rollers from a pair of skates and fasten to the rockers of a chair which is comfortable and of size to be pushed through all doors. You will find this an excellent substitute.



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Your Problems

Conducted by Mrs Helen Law

Mothers and daughters of all ages are cordially invited to write to this department. Initials only will be published with each question and its answer as a means of identification, but full name and address must be given in each letter. Write on one side of paper only. Answers will be mailed direct if stamped and addressed envelope is enclosed.

Address all correspondents for this department to Mrs. Helen Law, 235 Woodbine Ave., Toronto.

Just Sixteen:—You and your questions are most welcome, Miss Sixteen. You are to be congratulated on your ability to write a most charming letter. Regarding the spring frock, the one-piece style is decidedly advisable, as it will be very popular this season and it is especially suitable at your adorable age. Your decision to do your bit by raising chickens is commendable, and the work should be quite within your capabilities. You are making a wise start by studying the subject at the outset. If you will write to the Experimental Farm, Ottawa, or to the Ontario Agricultural College, Guelph, you will be sent, free, reliable information on poultry culture. You have our best wishes for success. Will you not report progress occasionally, and in the autumn send us an account of your experiences. Probably there are a number of our readers who will follow Just Sixteen's good example. "Ypres" is pronounced in one syllable, like eepr. "Bolsheviki," Bol-shev-ee-kee, with accent on the third syllable. "Invalided," in-va-lid-ed with accent on the first syllable.

Britannia:—Yes, the new standard loaf will soon be on the market and then there will be no more picking or choosing and no wrappings or expensive et caeteras.

It is provided that rolls may be manufactured and sold only in units of specified weights. The rules prohibit the wrapping of bread or the placing on it of a paper or other band for the period of the war. By providing for a standard loaf, unwrapped and of the simplest character consistent with wholesomeness, the Food Controller has ensured for the people of Canada bread at as low a price as it can possibly be made and distributed. The consumer will benefit by the regulations, while the bakers will be placed on a basis of equality and protected against unfair competition as well as being freed from many undesirable methods which have crept into the trade.

Mother of Five:—You are particularly fortunate to have five growing boys who are all keen to do something this year. There isn't a boy or girl in Canada now who can't do a little to help in food production. Seeing that you live on a farm why not have them rear a pig, a calf or a batch of chickens. Again they can have a garden plot and grow potatoes and all kinds of vegetables. Seventy-one thousand boys and girls of school age last year increased the agricultural output of Ontario to the value of $125,000. Other provinces did equally well.

Miss R.A.A.:—If you want really good substitutes for wheat why don't you use rolled oats and oatmeal in mixed breads. The first advantage is that they are easily obtained. Secondly, they will absorb far more water than wheat flour and retain it longer; thirdly, they are as cheap as any other ingredient which is available; and lastly, the oatmeal loaf is said to have a greater nutritive value than even a straight wheat flour and far greater than a corn-meal or barley-flour mixture.

A Soldier's Sister:—As a matter of fact, it is very unwise to send any food to your brother. It is really a source of waste to send food-stuffs to soldiers overseas. The rations issued by the Militia Department are liberal and varied. The aggregate quantity of food sent privately to the soldiers is very large and much of it is spoiled in transit. The situation overseas is so critical that every avenue of food waste must be closed.

Mrs. F. B.:—I have given your name and address to some prospective customers for your goose feathers. They will write you shortly.

Sheep Notes

It is now time for the live stock farmer to make sheep raising one of his regular lines of production.

One of the first considerations in the shelter for sheep is ventilation without draughts.

Bean fodder is an excellent roughage feed to be used in combination with other forage, particularly for sheep. It may also be successfully fed to cows in small quantities. When used for sheep in combination with other roughage feeds, bean straw will have approximately as high feeding value as good hay, although it will not be as closely eaten, on account of the coarse stems. The feeding value of the forage is almost always enhanced by the grain it contains, as even where a good job of threshing is done, some beans will nearly always remain in the straw.

Bedtime Stories

A Rain-drop Song.

Sing a song of rain drops,
Sliding down the pane,
Sing a song of winter,
Cloudy days and rain.

Sing a song of study time,
Things to read and write,
Sing a song of happy time,
Faces clean and bright.

Sing a song of teacher,
Smiling as she stands,
Sing a song of stories,
All of distant lands.

Sing a song of recess,
When we run and play,
Sing a song of gladness,
Make a happy day.

How to Prevent Epidemic of Colds.

A wheezing, sneezing, nose-blowing, sore-throated individual should be isolated. Colds are catching. Watch how they spread through a home, or an office, or schoolroom, or any place where people congregate.

Offering cures for colds is a popular philanthrophy. We are all ready to pass on our prescription and preach its merits. But the very best time to cure a cold is before you get it. Hygiene is more efilcacious than drugs. Careful eating, healthful sleeping—windows open rain or shine and a hot water bottle at the feet, if needed for warmth.

Wet feet conduces to colds. If you are anxious to get rid of a cough, or better still to outgrow the habit of catching cold, wear warm shoes, and keep the feet dry.

Growing Beans With Small Cost.

Plowed the ground early and worked it several times both ways so as to make it level. I planted with two-row corn drill, twenty-eight inches apart, and dropped a bean every ten inches in the row. I worked them with a two-row cultivator and hoed them once. Harvested them, eighteen acres, in one day, with two bean pullers and a side-delivery rake. Had two men follow the rake to pick up any scattered beans. We let them dry a few days and then threshed them from the field. Had 329 bushels of beans that picked two pounds.

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