Farm Crop Queries

Henry G. Bell.

Conducted by Professor 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.

Question—C.M.B.:—If I should plow under a patch of buckwheat to kill quack grass, what damage, if any, would it do to the ground if plowed when the buckwheat is in full bloom?

Answer:—To plow under buckwheat in full bloom will do no damage to your soil; on the contrary, it will do good by adding humus or organic matter, which will help the fertility of the soil. Be very careful to work the buckwheat thoroughly into the soil by disking and harrowing; otherwise it will form a coarse mat as you turn the furrow over. Such a mat seriously injures the rise of moisture in the soil. I have known instances where the turning under of a heavy crop of buckwheat, rye or clover—without care to working same into the soil—has actually starved the following crop by cutting off its moisture supply.

Question—A.J.S.:—What can I sow that will furnish cow pasture for the late summer and fall? I have lost my seeding this season and will be short of pasture after the middle of August. I have six acres of sandy loam, in a fair state of cultivation that grew a big crop of clover last year, but was pastured off very close last fall that I was thinking of sowing to oats and rape. Will the oats keep growing if they are pastured off or clipped? Can you suggest anything better? Would I stand any show of getting a catch of clover if I seeded in this pasture crop?

Answer:—I would advise sowing the following mixture;—1 bushel each per acre of wheat, oats and barley, and 10 lbs. of common red clover to the acre. Would work in 200 to 300 lbs. per acre of fertilizer carrying 2 to 3% ammonia and 8 to 12% phosphoric acid. This available plantfood will hasten the growth of the grain. As a rule grain does not continue to make growth if it is allowed to come into head. This mixture has given good results as summer pasture.

Question—L. H.:—We have four acres of light sandy soil which I would like to get seeded. Being so sandy it is hard to get a catch of clover. It had a little clover sod plowed under several years ago, but since it has gotten run down. I tried to seed it to clover and timothy but very little came, so I plowed it again and sowed to rye and manured it in winter and spring, and planted corn. It was so dry and hot last summer that the corn did not get big, so I cut it early for fodder corn and worked up the ground and sowed rye and intended to plow it under for corn after manuring this spring, but as the rye looks good I let it stand. As soon as the rye is off I would like to plow it with a three-furrow gang plow as there are quite a few sand burrs in this field. What kind of grass could I sow on this ground? Would sweet clover be good? I could manure it next winter and plow under for oats and seed it then.

Answer:—As soon as you have cut off the rye crop of this year, have the land plowed as you indicate and worked down to a smooth seed-bed. I would advise applying four or five loads of manure to the acre after plowing and before disking, and also advise putting on 500 to 1,000 lbs. per acre of ground limestone, in order to sweeten the soil. When you are ready to seed the grass mixture, you would do well to use from 200 to 300 lbs. per. acre of fertilizer carrying 2 to 3% ammonia and 10 to 12% of phosphoric acid, applying it through the fertilizer attachment of the wheat drill, or scattering it evenly over the ground before the last disking and harrowing. This available plantfood will give the young plants a vigorous start and will almost insure a good catch if you have sufficient moisture. I am inclined to advise the growth of sweet clover on your soil. This crop will flourish where most everything else kills out. If not kept in control, it may possibly reach the stage of a troublesome weed, but it can be kept in check if cut for hay while the young stalks are tender. From 8 to 10 lbs. of seed per acre are sufficient.

Poultry

In August all surplus Leghorn cockerels and cockerels of other light weight breeds should be marketed as broilers. They are of little value as roasters.

Green ducks are young ducks from 8 to 12 weeks old. They should be sold before they moult.

At the present time when growing chicks are attaining an age of from one month to ten weeks, a disease (known as coccidiosis) affecting the liver and bowels, is causing considerable losses. This disorder according to Dr. Wickware of the Experimental Farm is quite prevalent throughout Canada and is probably responsible for many deaths at present attributed to white diarrhoea. The disease is caused by a small egg-shaped germ which inhabits the first portion and blind pouches of the bowels. It produces inflammation of the bowels and liver, the blind pouches showing the most marked alteration. The changes in the latter may vary from a filling up with a reddish granular looking mass of soft consistency to hard cores composed of lining cells, blood, etc. The liver may show changes varying from a fairly normal appearance to large areas of yellow color which when cut into show a cheese-like centre.

SYMPTOMS:—The chicks appear dull and isolate themselves from the remainder usually remaining in the hover or under the hen. The feathers become ruffled; wings droop; appetite is lost and occasionally the chicks will give utterance to a shrill cry, particularly when trying to pass material from the bowels. A white discharge is usually present although it may be rather reddish in color and the vent may become pasted with the material discharge. These are the prominent symptoms in typical cases but chicks may also be badly affected and exhibit no outward appearance of disease until death suddenly takes place.

TREATMENT:—Treatment consists in dissolving fifteen grains of powdered catechu in a gallon of drinking water. This should be kept constantly in front of the chicks and should be changed every two days.

PREVENTION:—Prevention consists in the isolation of all ailing chicks from the remainder of the flock and the thorough disinfection of all the quarters and runs, which may be accomplished by the application of a limewash solution made by adding two and one-half pounds of stone lime to a pail of water, to which is also added one-half a teacupful of a good commercial disinfectant. This should be applied full strength with a spray pump, brush or old broom, to all parts of the quarters, brooder houses, etc. The feeding troughs should be cleansed daily by scalding with boiling water and special care taken to prevent the chicks from getting their feet either in the feeding utensils or drinking fountains as the disease is transmitted from bird to bird in this way. The floor of the brooder houses should be covered with a coating composed of nine parts of sand and one part of air-slacked lime, and if the droppings are not removed daily, they should at least be mixed with a fair amount of air-slaked lime to insure proper disinfection. If the runs are not too large, it is also advisable to cover them with a thin coating of the above mentioned lime and either spade or plough them up. The chicks should be kept away from all adult fowls and carcasses of dead birds immediately burned as burying only serves to keep the infection going from year to year.

Horse Sense

Saving From Sunstroke.

Ordinarily, five minutes of work will not kill a horse, but if the five minutes are in the afternoon of a hot day in Summer when the horse has been working hard beneath the burning sun, that small amount of time may be fatal. For that reason it is advisable to watch the horses to see that they are not overheated.

Here are some danger signals every teamster should heed: An overheated horse will lag in his gait, walk unsteadily and spread his legs when standing. His head is held low, the eyes protrude farther than usual and the pupils of the eyes are small. Breathing is loud and rapid. The skin is hot, the pulse quick and weak and the heart beats violently and irregularly. In severe cases the horse will stop suddenly, spread the legs apart in an attempt to steady himself, and fall to the ground.

When the horse begins to stagger, it is too late for prevention. If a sponge saturated with cold water had been kept between the horse's ears while working, the trouble might have been avoided. The only safe plan to follow after the horse is overheated, is to unharness him and get him to a shady place at once.

Cold water, thrown forcibly on the animal, is an effective remedy. The skin should be rubbed vigorously with rough cloths. A bag of cracked ice may be placed between the ears. If conscious enough to drink, cold water should be offered in small amounts. A stimulant may be given. After the animal is recovered, he should be turned in a shady pasture where there is plenty of clean cool water.

WINTER WHEAT IN WAR SERVICE

The Ontario Farmer Can Render Efficient Aid in the Present Serious Food Shortage by Increasing His Winter Wheat Area This Autumn.

By Henry G. Bell, Agronomist.

Food, men and munitions! These are the sinews of war. Canada's gallant men at the front in co-operation with the soldiers of her noble allies, are giving of their best. Their strength must be maintained. The whole American continent is a unit in a determined effort to this end. Present food requirements closely parallel Kitchener's immortal dictum concerning the great war. "It will take men and more men," he said. The days of war, and the after days will take "food and more food," and food that is most easily transported.

The days for seeding winter wheat are approaching. Every Canadian farmer is vitally interested in studying conditions to determine whether or not he can aid still further in the production of this great food crop. "Winters are colder than they used to be." "Ontario weather is changing." Have you ever heard these reasons given for winter wheat production decreasing in certain counties? The fact remains that Ontario's average climate has not changed. Records show about the same general variations in temperature and rainfall throughout the years. The real cause of the decrease in wheat acreage has been the rather unsatisfactory market conditions that obtained in years previous to the war. Poor markets combined with unsatisfactory yields made wheat growing unprofitable. Now, the poor yields were in many cases caused by insect ravages, the use of inferior seed and poor soil fertility.

But Ontario has learned how to master these destructive agencies. No province has produced seed of higher quality. The Ontario Agricultural and Experimental Union founded and directed by Prof. C. A. Zavitz, Ontario Agricultural College, has set a standard of quality in cereals that has become the ambition of farmers' Crop Associations throughout this continent.

Ontario farmers know that good soil tillage is absolutely necessary for good wheat production. Good soil tillage includes good soil drainage, rotation of crops, liming when necessary and proper working of the soil. To these essentals must be added proper fertilization and the use of good seed.

"I don't think this and that pays." Did you ever hear a grower say it? Well, here is the evidence; let the jury of keen, business-like, patriotic Canadian farmers decide the case.

The Canadian farmer is a business man. He is interested in keeping up his manufacturing plant, and at the same time making it pay. Especially under present conditions is he interested in all practices that increase returns. He knows there is a great market for wheat. Can he profitably increase his total wheat production? He believes he can. He has a general knowledge of practices that are recommended as being good, but he must work out his own problem; he must find a satisfactory answer on his own fields to his own questions. He has learned to put faith in the assembled information resulting from careful experiments carried on by the great international system of Experiment Stations.

Canadian experiment stations have given their work largely to a close scientific study of systems of tillage and a determination of suitable varieties of wheat. Some work as to proper plantfood balancing is in progress. The Canadian farmer, however, will be interested in the relatively long-time fertility experiments which have been conducted by some of the older State experiment stations in the land of our neighbors to the South.

Here is a question the Canadian farmer is asking, and some of the representative answers.

Does it pay to fertilize wheat?

Ohio Experiment Station, with 20 years' experience, says: "In the fertilizer tests of this Station at Wooster, Strongsville, Germantown and Carpenter, the use of phosphorus alone has increased the yield of wheat from 4.85 to 8 bushels per acre; phosphorus and potassium have increased the yield from 6.20 to 9.19 bushels per acre; and phosphorus, potassium and nitrogen, from 8.77 to 16.20 bushels per acre."

The quality of wheat of the 1910 crop grown on fertilized and unfertilized plots was studied. The wheat from the fertilized plot analyzed 94% plump and 6% shrivelled; that from the unfertilized analyzed only 51% plump and 49% shrivelled. (Data from Ohio Experiment Station Bulletin No. 243.)

Indiana Experiment Station has conducted valuable tests under the direction of a former Canadian, a graduate of Ontario Agricultural College, namely, Prof. A. T. Wiancko. Its valuable contribution to the question before us is as follows: "Experiments in 10 representative counties of the state have shown an average gain due to fertilization of wheat of 11.6 bushels per acre. The average cost per acre of fertilization was $4.14 leaving a net profit per acre of $7.46." Circular No. 23.

"On limed land, mixed fertilizer has been used at good profits in all cases. At North Vernon and Worthington, where mixed fertilizer is applied to wheat on manured land, good wheat increases have been secured from the use of 200 pounds per acre of 2-8-4 fertilizer following corn, which had received six tons of manure and 200 pounds of acid phosphate per acre." Bulletin No. 198.

Missouri Agricultural Experiment Station adds: "On average Missouri land the fertilization of wheat is practically always remunerative. While there are seasons in which results of an increase of two or three bushels only are secured, in average seasons increases of from four to six bushels can be counted upon. On the thinner lands much larger returns can be expected. M. F. Miller of the University of Missouri College of Agriculture cites the results of wheat fertilizing experiments conducted in different parts of the state: On the Northeast Missouri level prairie results of several years' experiments have shown an increase averaging 11.5 bushels an acre from the use of lime, phosphorus and potash. On the North Missouri rolling prairie the increase during approximately the same period has been 6.2 bushels. On the South Missouri experiment fields the results have been similar, although in some cases materially higher than these. At the St. James experiment field a six-year average has shown an increase in the wheat crop of 13.1 bushels. It is safe to say, therefore, that one ought to expect a minimum of around 4 bushels and a maximum of not less than 10 bushels as very conservative estimates." Agric. Cop. Service, June 19, 1917.

West Virginia Experiment Station reports an average gain per acre in yield of wheat of 10.16 bushels in 1901 and 21.66 bushels in 1914 as a result of applying a complete fertilizer. Bulletin No. 155.

Wheat thrives where the tiny plants can get an abundance of suitable plantfood, and where this supply of food holds out throughout the growing season. Livestock stock manure is the great home source of plant food. Every bit of manure that can be spared can well be applied to the wheat lands, either in preparing the seed-bed or as a winter top-dressing to the young crop. To insure a good stand of wheat and to give it strength for the winter and early spring, farmers of Canada will find it profitable to supplement the manure with 200 to 300 lbs. per acre of fertilizers. This plantfood supplies 1 to 2% of nitrogen, which gives the tiny wheat plant a vigorous start; 10 to 12% phosphoric acid, which plumps the kernel and causes the crop to mature early, and at present 1 or 2% of potash which assists the disease-resistent power to the plant. This fertilizer is applied broadcast to the plowed land, and worked in by disking and harrowing, or is drilled into the wheat seed-bed at the time the crop is sown.

Late seedings of wheat, in order to escape the ravages of the Hessian Fly are strengthened successfully by proper fertilization. The U.S. Department of Agriculture, in Bulletin 640, says:—"The application broadcast of some quick-acting fertilizer containing a large percentage of phosphate, made as soon as general infestation is apparent will cause the plants to tiller more freely and give them sufficient vigor to withstand the winter, and thus increase the number of healthy stems the following spring. . . . While it may seem "far fetched" to bring forward as a preventive measure the enrichments of the soil, a fertile soil will produce plants that will withstand with little injury attacks that will prove disastrous to plants growing on an improverished or thin soil. This is because a fertile soil will enable an infected plant to tiller freely, and these tillers will have sufficient vitality to withstand the winter and send up head-producing stems in the spring."

With the problems of proper seed, insect control, and soil fertility so far advanced toward solution and with war time prices ruling, it is good business for Canadian farmers to give careful thought to increasing winter wheat areas this fall.

Grow Your Own Clover Seed.

It has long since been established that home-grown seed gives best results. Put all these facts together and what is the very obvious conclusion? Much is said to-day about the high cost of living in cities, but what about the high cost of farming which means costly production? It should and can be reduced. If the farmer will grow his own clover seed instead of buying it at a high price, he will be more likely to sow an adequate amount of seed per acre to insure a good stand. Plenty of clover on farms means abundance of good feed for stock and maintained fertility of the soil.

A thin looking second crop of red clover will often yield a good return of seed. It can be cut with the ordinary mower with a flat table attached to the cutter bar; a man follows and rakes it off into windrows. By making a few simple adjustments, it can be threshed with the ordinary grain thresher if a clover huller is not available. Save a piece for seed each year. Sow plenty of seed per acre. Harvest better and bigger crops.

The sober second thought,—how steadying it is!

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 correspondence for this department to Mrs. Helen Law, 235 Woodbine Ave., Toronto.

Miss Canada:—1. Three patriotic tableaux for girl performers which might be suitable are: "Britannia's Daughters," at 15 cents, "Women's Work in War,"at 15 cents, and "The Making of Canada's Flag," at 25 cents. As the cost is so small, why not buy all three selections, and ascertain which would best suit your performers and your audience? 2. "At Home in the Water," by Geo. H. Corsan, price 25 cents, is an illustrated textbook on the art of swimming and life-saving. 3. St. Quentin is pronounced San-kan-tan. 4. Lemberg is the capital of the Austrian province of Galicia, through which the Russians are now driving.

Madam Y.:—1. No reply to a wedding announcement is necessary. 2. One's visiting card with a word of sympathy can be sent to a person who has suffered a bereavement when the degree of acquaintanceship does not call for a note. 3. To remove tan from the neck apply the following paste: One ounce honey, one teaspoonful lemon juice, six drops oil of bitter almonds, the whites of two eggs and fine oatmeal sufficient to make a smooth paste. 4. A married woman when calling upon another married woman leaves one of her own cards for the hostess and two of her husband's cards for the hostess and the husband of the hostess.

Bride-To-Be:—1. An engagement ring need not necessarily contain a diamond; many other stones are used, frequently birthstones. 2. The wife of the clergyman who officiates at a wedding should be invited to the wedding. 3. One wedding invitation will suffice for a man, his wife and daughters. It is not good form to address a wedding invitation "Mr. and Mrs. John Smith and family." In sending wedding invitations to a family consisting of father, mother, one daughter and two sons, one invitation may be sent to Mr. and Mrs. John Smith, with the name of Miss Smith written underneath that of her parents, while another invitation should be addressed to the Messrs. Smith. 4. Wedding announcements are never posted before the ceremony, but as soon as possible afterward. 5. Confetti as a substitute for rice to be thrown at a wedding is much safer. 6. A bride should write personal letters of thanks to all those who have sent presents to her.

Bluebell:—1. You might try benzine to remove ice cream stains from silk taffeta. Or another method is to lay the spot upon a folded damp cloth, put another over it and press with a moderate weight for an hour. Then wipe off both sides with borax water, weak and cold, followed by clear water. Shift the spot to a clean place now and then. When clean pin it smooth between thick cloths and press dry with a moderate iron. 2. Tan boots when stained with mud and dirt can be cleaned by rubbing with a slice of raw potato, allowing them to dry, then polishing with beeswax and turpentine. 3. As a remedy for perspiration prepare the following powder to be applied to the hands and feet or sprinkled inside the gloves or stockings: Twenty ounces prepared Venetian talcum, ten ounces powdered orris root, five ounces oxide of zinc, five ounces powdered tartaric acid, five ounces powdered boric acid, two and one-half ounces salicyclic acid, one-quarter ounce menthol, one-quarter ounce oil of eucalytus. 4. Placing a small piece of orris root in the last rinse water will give delicate blouses and handkerchiefs a suggestion of sachet.

Mother:—1. A doctor gives this advice: Teach the children to take natural sweets like raisins, prunes and other fruits, and especially teach them to chew thoroughly. Honey is a wholesome sweet and may be given to children occasionally with whole wheat bread. If the child has a well balanced diet he will not have an abnormal desire for sweets. 2. Lettuce is rich in iron. It is a blood-making food. There is more iron in a pound of lettuce twice over than in a pound of beefsteak and the iron of the lettuce is all available for use whereas the iron of the beefsteak is less available for use; besides lettuce contains lime, which is lacking in beefsteak, and is rich in vitamines, a highly essential food element. 3. White, procelain lined or agate dishes should be used in preserving fruits. The acids in the fruits will affect iron and tin.

Bedtime Stories

The Spice-Box.

The spice-box is a nice box;
I like to peep within.
I like to sniff each fragrant whiff,
Since sniffing is no sin!
I like to play I'm far away
In balmy islands sweet,
'Mid spicy trees that woo the breeze,
With spice roots at my feet.

This cinnamon once grew upon
A tree in Borneo.
The inner bark, how nicely, mark!
They stripped and rolled it—so!
These fragrant cloves, in Java's groves
As flower buds they grew;
Now, plucked and dried, o'er oceans wide
They come, my dear, to you.

O ginger hot, you're not forgot!
I think you're from Jamaica;
In dusty brown you come to town,
As sober as a Quaker.
Root of a reed you were, indeed,
Though powder now we view;
You love to bite, yet not in spite;
Oh, no, in friendship true!

Cassia and mace must find their place;
Mace is the nutmeg's sheath,
And nutmegs grow on trees, you know,
The tropic skies beneath.
Sweet allspice next I find, perplexed—
Its real name is pimento;
Its powdered seeds fulfill our needs
With aromatic scent, oh!

Yes, the spice-box is a nice box!
I like to sniff within.
All earth, you see, sends gifts to me,
And sniffing is no sin!
Then let me learn, and wisely turn
To use each pungent spice.
This very minute I'll begin it—
Make mother something nice!

Corn is a Nourishing Food.

Corn is a wholesome substitute for wheat, in the making of bread, and at present costs 7 cents a pound, as against 12 cents for wheat.

In fact, the food elements in corn, wheat, rice, oats, rye and barley are very much alike. Corn contains a little less body building material (protein) than wheat, and the protein of corn is not quite so available for growth. It also contains less mineral substance than wheat. But the differences in these respects are very slight. On the other hand, corn contains more body heat and energy material than wheat. A pound of Indian corn contains 1,620 heat and energy calories, or food units, which is enough for nearly half the day's ration needed by a big man at active exercise.

Corn meal mush taken with whole milk, equal parts, is almost an ideal food; it satisfies nearly every physiological requirement. The milk supplies what the corn lacks.

The Sunday School

INTERNATIONAL LESSON AUGUST 12.

Lesson VII. Josiah's Good Reign—2 Chron. 34. 1-13. Golden Text—Eccles. 12. 1.

Verses 1, 2. Introductory. Josiah—The son of Amon, grandson of Manasseh; king of Judah about B. C. 639-608.

3-7. Uprooting of idolatry. Eighth . . . twelfth—From the very beginning the heart of Josiah was turned toward Jehovah. Purge—At the accession of Josiah the land was full of idolatrous symbols and practices. High places—The local sanctuaries; the attempt was made to centralize the worship in Jerusalem. Asherim—Singular, Asherah; a wooden pole set up beside the altar as a symbol of the deity, a survival of tree worship. Graven—Idol of wood (carved) or stone. Molten—Idol made of metal. Baalim—The native Canaanite deities. Sun-images—Probably identical with the pillars of 2 Kings 23. 14, a survival of stone worship, and serving the same purpose as the Asherim. Graves—"A sort of retributive pollution of the resting place of the impious dead." Bones—The resting place of the dead was sacred; its disturbance was the greatest calamity imaginable. The bones of the idolatrous priests were burned to defile the altars upon which they had burned heathen sacrifice. Manasseh and Ephraim and Simeon, even unto Naphtali—The reforms extended beyond Judah; they covered the whole of Israel, including Simeon in the far south, which was reckoned with the northern tribes (2 Chron. 15. 9).

8-13. Repair of the temple. Eighteenth—According to Kings the repair of the temple and the finding of the Law preceded the destruction of idolatry, which is represented as inspired by the newly found book of the Law. The Chronicler may have introduced the change in the order of the events to emphasize the fact that Josiah was an ardent Jehovah worshiper from the beginning. Repair—Under Manasseh the temple was neglected. The direction of the work was entrusted to three state officials. Money—Contributions were received from all parts of the land. Levites—In accord with his general point of view, the author is careful to state that the whole enterprise was under the immediate direction of the Levites.