

Soils and Crops

Address communications to Agronomist, 72 Adelaide St. West, Toronto

Bean Pod Spot or Anthracnose.

Vegetable growers are familiar with the spotting of bean pods which commences as a dark red pin point, enlarging rapidly, becoming darker in color and forming a more or less kidney-shaped canker or sore. Sometimes the pods are nearly all covered with these sores, rendering them very unsightly and worthless. The seed from infected pods have black or brown spots on them, and invariably the plants bearing diseased pods will be seen to have numerous spots on the leaves and stems, somewhat similar to those on the pods, but smaller and more elongated.

Investigations have shown that this Pod Spot or Anthracnose, as it is called, is caused by a fungus and that the spots on the seed carry the fungus over from one growing season to another. When this seed is planted and begins to grow, the fungus grows up with the plant; and if the weather is wet and cloudy, which provides good conditions for the growth of the fungus, it may kill the small plant when it is a few inches high or even before it gets above ground, so making misuses in the rows. In any case, if the fungus growth has not been rapid enough to kill the plant, it will cause the spotting described above, and in these spots can be seen a yellow or pink slimy material which is composed of the beads or "spores" of the fungus. These spores are scattered to neighboring plants, principally by rain, where they grow and form new spots, so spreading the disease through the field.

The losses from this disease have been very considerable in some localities and in certain years when weather conditions have been particularly favorable to the growth and spread of the fungus. The losses are brought about in three ways:

1. The killing of the young plants gives a poor stand in the field.
2. The destruction of the pods and the weakening of the plants reduce the yield.
3. When the crop is to be sold for seed, the presence of the spotted seeds would reduce the value considerably and would not be bought by anyone familiar with the disease they conveyed.

The best means of control.—The use of sprays has given no results. The more obvious way to combat the disease is to devise some means of making sure that the seed you plant is not conveying the destructive fungus. This can be done with very good success in the following way: Set aside a small plot of land, preferably some distance from your bean fields and grow your own seed supply in this. Plant in this plot plump, clean seed of the varieties you wish to grow the following season. Inspect these plants as frequently as you can during the growing season and weed out all plants which appear sickly or have any spots on the stems, leaves or pods. When the crop from this plot is harvested, go through the pods and discard all those which have any signs of spotting and keep the seed.

These courses helped to bring an atmosphere of proper marketing to the junior farmers who will henceforth, it is hoped, become "key men" in their localities.

World Has More Meat-Eaters.

Just prior to the Great War, the meat consuming population of the world was estimated at roughly 500,000,000 head. Approximately 400,000,000 were people in Europe and Siberia, 110,000,000 in temperate North America, 14,000,000 in temperate South America, 4,500,000 in Australasia, and 1,500,000 in South Africa. Thus the meat consuming peoples approximated one-third of the total population of the world, as against less than one-quarter of the population sixty years ago.

The statement that the consumptive demand cannot be increased in total, is, therefore, disproved. Undoubtedly there has been an increase in the consumption of meats during the past half-century, showing about 90 per cent. This is due to a generally raised standard of living, the increase in the population of the countries situated in the temperate zone, the remarkable increase in the white population of the world, and the development of transportation, enabling expeditions and economical movements of meat. This has been effective in bringing about large increases in industrial population, with its heavy meat eating tendencies.

There are no indications that this rapid increase in meat consuming population will show any marked slackening during the next fifty years. Therefore, the problem of producing sufficient meat to meet the increasing demand in quality and volume still exists.

Statistics prove that the world's live stock surplus is not keeping pace with requirements. A number of prominent exporting countries appear to have reached their maximum of production, while others are steadily reducing their exportable surplus owing to a greatly increased domestic consumption. In effect, a number of hitherto surplus-producing countries are tending toward "deficiency" or, at least, non-surplus producing.

Dead weeds in the garden harbor insects over winter. Burn them.

lected ones separate from all the other beans. If your selection has been carefully done, you may be reasonably certain this seed will produce a clean crop the following year.

Breeding the "Market Sense."

Six short courses designed to bring hog-raising more into line with the exacting requirements of the ultimate market for bacon were arranged for Ontario by the educational committee of the Canadian Swine Breeders' Association in the first half of December. The Ontario Dept. of Agriculture co-operated by having their district representatives bring nine junior farmers from forty countries. The courses were eminently practical and were held under actual conditions of meat manufacture at packing plants at Hull, Peterboro, Ingersoll, Brantford and Toronto (two series). Lectures were given dealing with hogs suitable both for domestic trade and for the making of No. 1 Wiltshire sides for our British trade, the latter having been so gravely challenged by the high quality of the products shipped since the war in increasing quantities from Denmark. Competitions in judging live hogs and in grading and judging the carcasses from the same hogs followed. The cash prize list amounted to \$1,440, donated by the Dominion Department of Agriculture and the Industrial and Development Council of Canadian Meat Packers jointly, while "top man" at each centre was given a sow about six months old by the members of the Swine Breeders' Association. The Health of Animals Branch of the Dominion Department of Agriculture also helped in the plan.

The idea underlying the scheme is that the producer should aim to breed not good-looking hogs for the satisfaction of looking his neighbor, but those which will yield, when slaughtered, the largest weight of highest priced bacon. That is what the packers demand insistently; that is what they can pay for, because, in turn, that only is what they can sell at a profit in a keen market, with world competition to meet.

Hog-raising is not a pastime in which the producer may pick and choose the type and expect the consumer to "take it or leave it." If a Canadian farmer is in hog-raising as a money-making business, he must produce that which the market will take, because consumers will get their bacon elsewhere if he fails to give them precisely what they want.

There is no sentiment about world markets. They are stern and unyielding to those who come offering unsuitable goods but are steadily, immensely profitable to those who offer the goods that can be readily passed on to the best and last judges of their own wants—the vast body of consumers.

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Getting a Good Start.

Last week I had a chat with a wide-awake country boy who lives in Grey County. He is now sixteen years of age and for the past six years has been saving his money by depositing it in a local bank. At the present time his account will go a long way towards giving him a special education. Besides having a substantial fund to his credit this lad has received much first-hand information on banking and has become personally acquainted with the banker, which information and acquaintance are making a good foundation for securing credit later should he be in need of such.

This banking experience has not only taught this lad how to save money, but it has been without doubt a real practical influence in his methods of spending. As he grows into manhood he will have an advantage over the men who failed to get this business experience in their youth. Inasmuch as the next generation of farmers will more and more need training in practical business methods, would it not be wise for parents to urge and assist their children to undertake early the handling of funds through some regular financial institution?—R. H.

Furnish the Barn.

Barns should be furnished as well as houses, and with the idea in view of making the work easier and giving the animals better care.

There is much room for barn furnishings. As I go about the country I see many places where a few barn furnishings would not only create a saving but add much to the comfort of the animals as well as the man doing the work. A loss of a good animal through some item of poor housing is so frequent that it scarcely needs mention. Blenches to the udders of dairy cows, calf cholera, abortion, white scours, hog cholera and a score of other animal diseases can often be prevented by better housing of the stock. Good barn furnishings truly make for economy in the handling and producing of live stock on the farm.—H.

Poultry

Artificial light gives the birds the amount of daylight they are used to having during the time of high production or in the spring months. In Canada, especially, the winter days are extremely short and the hen's day even more so, for she goes to roost as soon as it begins to grow dusk, and the trouble is that the night is so long that she is not able to take enough feed to do her until morning. The value of the light is simply to increase her daylight so that she can have more time to eat and less time necessary for sleep. It lengthens the hen's day and makes it more in keeping with summer conditions.

There is really no best time when the light should be turned on. It is all a matter of convenience. Some people prefer to turn on the light from four to six in the morning and let the birds go to roost when they set in the evening. They claim that this is more natural in that the birds get up as soon as the light comes and start scratching. They go to roost at the usual time at night and are sure to be on the roosts. Others will turn the light on for an hour or two in the morning and an hour or two in the evening, while some find it more convenient to turn the light on in the afternoon before dark comes and then turn it off about nine or ten o'clock at night.

As long as the day is lengthened to from twelve to fourteen hours it is immaterial just what method is adopted so long as the same method is followed through the whole season. Care, however, must be taken so that after the lights are turned on in the evenings the birds will get to roost before the lights are turned out. To insure this some use dimmers. Others flash the lights while some claim that it is not necessary, that the birds will soon get into the habit of knowing just when to take the rest.

On the electric light being turned on at night, there is that difficulty that the birds sometimes go to roost early even though the light is on. If this is found to be the case it will be well to give some special feed in the evening and keep them scratching, or allow the birds to go to the roost at

the natural time in the afternoon, and then after supper turn on the light and give them their evening feed. At that time they are hungry, they get off the roost and spend an hour or two scratching to get their evening feed. The exact time is not so important so long as judgment and good management are used.

Since the use of electric light is valuable only in hurrying up egg production, it is not recommended as highly for well matured early pullets that have started to lay in October or November. Under natural conditions these will give a good egg yield, and it is a question as to whether light in their case is an advantage, but for late and immature pullets and for older hens, light is an advantage. It will hasten the development of the later pullets, bring them into egg production much earlier, and will sometimes be the means of making late birds give a profit when otherwise there would be none. The same is true of hens that have been laying fairly well during the summer and under natural conditions will rest for most of the early winter months. Our experience has also been that for the late hatched chicks electric light has assisted in the development. In a bunch of 200 White Leghorns hatched on the 15th of September, electric lighted brooders were used which gave light all night long and these pullets were laying by the 15th of January.

As a rule a 60-watt Tungsten will give sufficient light for an ordinary pen of twenty-five birds. Shades to the light are not an advantage, but the light should be placed where the most illumination will spread over the floor. Where electric lights are not available, a number of barn lanterns with reflectors have been hung on the wall with fair success. Other systems of illumination may be used but danger of fire must be taken into consideration. Automatic clocks for turning on and off the lights are an advantage in that it is then done without any extra attention. Dimmers are an advantage if the light is used in the evening, but if the manager will watch carefully he can, by flashing his light once or twice, soon train the birds to take to the roost.

Limestone on the land is as good as money in the bank.

The Welfare of the Home

Music in the Home—By Edna Everett

In speaking of the needs of a poverty-stricken family of our acquaintance, a friend once said to me, in shocked and disapproving tones, "And they have a piano! Think of it, a piano! These seven children have not enough to eat, and are always needing help. I think that family deserves no help and no sympathy. A piano, of all things!"

"Fortunate children!" I replied. "Perhaps the piano makes them forget the lack of food and coal and keeps them off the streets. I must call and see that piano," which I did, forthwith.

I could scarcely conceal my astonishment at the transformation in this erstwhile home of poverty and uncleanness.

The piano, which was the only object worthy the name of a piece of furniture shone from recent polishing, and the floor and every object within range of vision had been scrubbed and rubbed to make it a proper associate for the piano.

"Sure," said the mother, beaming with pride and blissfully unconscious of the tales concerning the family extravagance, "it is a grand thing for the children. They don't never go out at night now, and," impressively, "you must just to hear Mary play, never had a lesson and plays everything, by ear. And it's the same with Ellen. She plays grand. Oh, they all take turns. It's too bad the girls ain't here to play for you, and the way they keep

the house clean! You see their friends come to see them now."

I tried to look my grief at missing the musical (?) treat, expressed my admiration for the piano, my interest in the welfare of the family, and departed rejoicing. My theory had been vindicated.

Music in that home as in every other is as much a necessity as food and clothing. Why expect the poor to be satisfied with food alone while their souls starve for the things that make life worth-while, and, in many cases, barely endure.

Many complain that the working man is receiving high wages and "wasting" his money on a piano, a victrola, or other musical instrument and in paying for music lessons for his children.

Every child has the right to music in the home. It is essential to health and happiness. It will keep children in the home and cause them to carry with them memories which may save them in times of temptation.

The moral values of "good" music cannot be overestimated, while the degrading, unspeakable "jazz" has no more place in the home than trashy and immoral literature.

Children will go where they find music and song, companionship and happiness. If they find these in the home, they will not search for them elsewhere, and the problem of keeping children at home will be happily solved.

Where the area of the garden is larger than required for the work already mentioned, it is worth while to plant some marketable crop. Potatoes answer the purpose, but in some localities sweet corn, tomatoes or carrots and beets might be grown very profitably. The results can be used to show that the methods taken up in the course of observation on conclusions arrived at during his visit. We can, he says, produce and ought to be producing seed of orchard grass for export, and that both for orchard grass and timothy seed there is a substantial European market, while the production of red clover seed might be multiplied many times, without danger of over-production.

The seed both of red clover and orchard grass produced in sections of Canada, particularly in the clay-belt of Northern Ontario and Quebec, is superior to that imported from any of the Scandinavian countries.

While Canada imports her supplies of white clover seed largely from Europe, conditions here are ideal for its production. That produced in the districts named, and also in Alberta, is of superb quality. White clover sells in Great Britain at twenty-five cents to a dollar per pound. The Seed Branch of the Department of Agriculture is procuring a supply of this seed from Scotland, and will establish a seed-producing centre at Kapuskasing in Northern Ontario next season.

To know whether a hen drinks 20 times her weight in water every year, as some claim, or 30 or 40, isn't so important as to know that Biddy wants and can use a lot of it.

Suggestions for Practical Work in the Teaching of Agriculture

By Norman Davies, B.A., Teacher of Science and Agriculture, Renfrew Collegiate Institute

Whether or not to have a school garden is the question facing many teachers about to begin the teaching of agriculture. The school garden is very important both to teachers and pupils. For public school work the requirement in Ontario is six square rods in order to qualify for grants, but a smaller area is worth while even if no grant is secured.

Numerous topics can be illustrated in the school garden. The method of planting, the care and harvesting of different crops can be taken; the study of insect pests and fungus diseases of plants, and methods of control; methods of conserving moisture, and problems of drainage; the growing of small fruits and the care of fruit trees including budding and grafting; practical work in measurement in laying out the plots; the study of common garden weeds and methods of eradication, and many other topics can be given a practical angle. The flower garden is important, for in it the methods of planting bulbs, perennials and annuals can be shown. The school garden provides the material for teaching many of the agricultural topics by the laboratory or demonstration method, so that pupils can see methods and results as well as hear about them. The teacher will also derive benefit in having actual results as a basis for the information given to the pupils. The school garden adds a zest and an interest to the work which cannot be secured by classroom work alone.

In addition to the individual plots, planted and cared for by one or more pupils an area planted under the direction of the teacher for class purposes is worth while. Such an area might represent a kitchen garden about 60 to 80 feet long by 20 to 25 feet wide. A third of this area could be planted in permanent crops, as strawberries, raspberries, rhubarb, and so on; another third in smaller vegetables, and the remainder in potatoes, corn and tomatoes. Such a garden shows method of planting a small area and the variety and yield; while from the strawberry and raspberry patch, plants may be supplied to the pupils. Last spring about 15 pupils from our classes took from 50 to 100 plants for planting in their gardens at home. Next year I expect to supply a few raspberries plants and possibly some rhubarb roots.

For the past three years I have planted in a part of the garden small plots of fall wheat and fall rye, each year planting the seed grown in the previous season. My object is to secure plants more resistant to frost and to test each year the value of commercial fertilizer. Results have been encouraging and each year the plots of wheat came through the winter in a better condition. The rye has never been seriously harmed. The wheat always shows a higher yield on the fertilized plots, while the rye has never shown any advantage from the use of fertilizer. I use this result in classwork to point out the importance of testing a small portion of a field for each crop before investing extensively in commercial fertilizer.

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STOPPING THE BIG LEAK

Someone has questioned the ultimate economy in farming in northern latitudes because of the waste of labor during the winter months. In older countries the handicap has been overcome by farm manufacturing. In this country as time goes on we shall find in all probability that a larger and larger percentage of successful farmers will consist of those who have worked out some program whereby the labor required for carrying on the rush work of summer will be employed at some profitable work when field operations are at a standstill.

The man who is operating a diversified farm is more fortunate in this respect than the man who is confined to the growing of one or two crops. However, there are many opportunities for the good farmer whose attention is required on many crops to increase his net returns for the year through the profitable use of the idle time of both men and teams. In this matter individual farmer must plan his own program of work. Only general suggestions can be given. Logically the turning of raw farm materials into marketable products offers the widest application to farms in Ontario. The conversion of grains and forages into animal products is an old task for the winter, but one that should be given more definite study with regards to its application to the particular condition on each farm. Farm forestry is another line which has excellent possibilities for keeping the men and teams at work in cold weather. Repair work, pruning the fruit trees and the removal of the brush cleaning and testing seeds, marketing the grain and live stock, treating and sharpening fence posts, making crates or other containers, repairing and sharpening tools, building racks, cutting wood, lumbering, and many more tasks can all be jotted down as possible work for the farmer during the winter days.

Helps the World's Farmers.

A further tribute to the prowess of Mr. Seager Wheeler in wheat production is given by the Olean (N.Y.) Herald in a recent editorial. It says:

Seager Wheeler, Canada's wheat wizard, gets thirty dollars a bushel for Early Triumph, his new variety of seed wheat. It ripens ten days earlier than any other wheat and yields eight to ten bushels more to the acre.

That helps all farmers, by increasing their possible profits. It also makes the wheat belt one hundred miles farther north, putting millions of acres under cultivation.

Wheeler, on his Saskatchewan farm, has a wheat production record of eighty-two bushels an acre. In international exhibitions he has won the world's championship five times.

Men like Wheeler and Luther Burbank will be the outstanding figures of our time, when a really civilized posterity re-writes history and puts wars and other things where they belong—on a back seat.

The record of Mr. Wheeler, whose farm is located at Rosethorn, Central Saskatchewan, is well known to all students of agriculture.

The editor of this publication well remembers the beginning of his rapid climb to fame. In 1912, his exhibit was awarded at the New York World Show the \$1,000 gold prize donated by the Canadian Pacific Railway for the best bushel of hard spring wheat grown in North America, and a telegram of congratulation was sent to him on his success. When the presentation of the prize was later made, at a banquet tendered to him by the Canadian Club at Calgary, he told an interesting story of the receipt of this telegram.

"My farm, as many of you know," he said, "is situated quite a little distance from the railway station. My wife and I, that very evening, had been discussing our financial situation which was indeed anything but satisfactory. Though I had already then, won several prizes and had a surplus of potato diggers, drills, harrows, reapers and other farm implements, I lacked the ready cash to carry out experiments I was making. I sadly wondered what I should do; we went to bed late, disheartened.

"About 11 o'clock a knock on the front door sent me grumbling downstairs to see who it was; what was my surprise and joy, on opening the telegram which the boy delivered, to learn that we were richer by \$1,000 and in possession of ample means to enable me to go on with my work. It brought us near to tears and seemed the very hand of Providence.

"It taught me to have faith, and that hard work, perseverance and unfaltering courage—the essentials of all true farmers—are the surest road to success."

To get a bushel of ear corn, divide the cubic feet in the bin by two and a half.

Kiddies will welcome filled cookies in their school lunches. Put two cookies together with marshmallow whip or ground figs.

Cold water will help considerably in ventilating a room. Keep a pitcher full on the table and it will absorb all the gases and impurities.

It is not too early to commence drawing up your list of plants and seeds for next spring. By ordering early you get a better selection.



HAVING CONSUMED ALL THE GOLDEN EGGS —Dallas News.