

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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M. W.: How can I kill mustard in my clover and barley field? Can I use a spray?

Answer: If the barley is not too high and if the mustard has not come into flower you can kill the mustard by spraying with a mixture of iron sulphate (copperas), 80 lbs. to 40 gals. of water. This will kill the mustard and turn the barley black for a few days, but it will recover. If the mustard is far advanced to flowering, the only thing you can do is to pull the mustard by hand.

M. B.: Will you please tell me if wild oats that came up in alfalfa, if cut and fed to stock, will come up where the manure is spread? This field has been seeded to alfalfa for five years and I never saw wild oats there until last year. I do not know where they came from.

Answer: I do not think that wild oats cut green and fed to horses will spread. Wild seeds that have gone through the digestive tract of animals are unknown as far as I know. Be

Do It Regularly.

The majority of Ontario farmers have not as yet adopted the policy of plowing down green crops. Green manuring will in time become a regular practice in the rotation program on every good farm. These crops not only add to increasing the available plant food in the soil, but they also improve the physical condition of the soil.

The greatest benefit comes to the land from green manuring where legumes or nitrogen gatherers are plowed down. There are a number of legumes that can be so used. The list of familiar plants in this class includes red clover, alfalfa, alsike, sweet clover, soy-beans, field peas, and vetch. Rye and buckwheat are two non-leguminous plants which are frequently turned under and which usually give good results, although they do not add nitrogen to the soil.

While the benefits to be derived from this practice are difficult to measure, every farmer who has experimented with green manuring knows full well that this treatment prepares the soil for the production of more abundant crops. Perhaps the greatest benefit comes from the addition of humus to the soil. This not only aids in making plant food more available to the crop, but it also increases the water-holding capacity of the soil and decreases the rapidity of evaporation. Crops on land with plenty of humus are much better insured against the dangers of weather extremes through this addition.

Comparatively little has been done in this country with this type of soil building. The practice, however, is an old one and in time will be common among us. The question is, why not take advantage of the benefits now? This year is abundant and labor scarce, which may make it practicable for some farmers to realize better from their forage if a small portion of the clover acreage is turned under and thereby invested in future crop production.

The Annual Picnic.

The women folks are preparing for the annual church picnic. For a long time of years we have attended these affairs and many times we have come home completely tired out. But when the next season comes around we seem just as eager to go as we did on the preceding years. We think parents generally should look favorably upon these outings.

While we have not had in mind so much our own pleasure as we prepared and hustled to get out with the crowd, we have always felt that this free mingling with neighbors and friends was every bit worth while. There can be no question but that the community is much better off because the folks get acquainted with each other on the less serious side of their natures.

Then, too, spending the day trying to help the boys out with the baseball game or the girls with their races certainly brings old Father Time to a halt for a moment and helps us to smooth down to some degree at least a few of the wrinkles that are gathering on our brow.

The real purpose of the day is to give the boys and girls a good time. As I look back over the days that I had off for trips to the lake with my friends stand out in bold relief against the long days of hard work. Remembering this we feel it a privilege to be instrumental in putting into the lives of the boys and girls of our day and community as many of these bright spots as we can.—W. F. B.

At present prices the droppings of a hen for one year are worth about \$2.

The Sunday School Lesson

JULY 16

The Handwriting on the Wall, Daniel 5: 17-28. Golden Text—God shall bring every work into judgment, with every hidden thing, whether it be good or whether it be evil.—Ecll. 12: 14. (Rev. Ver.)

Lesson Foreword—Remember that the Book of Daniel was written to minister comfort and encouragement to men who, through persecution, were liable to fall away from their religious faith. In to-day's lesson, encouragement is given by showing that who ever profanes the religion of the Jews is doomed to punishment. Belshazzar, in his profanity and punishment, is an instance of this.

I. The Cause of the Handwriting, 17-23. In this section the reason for the appearance of the mysterious hand is set forth.

V. 17. The magicians of Babylon have failed to explain the handwriting and now Belshazzar offers Daniel an attractive reward if he can do so, v. 16. Let thy gifts be to thyself, Daniel. He offers him the crown and honor which the king has proffered him. Yet I will reward no man. No reward was necessary to induce him to interpret what had baffled the others.

V. 18. The most high; a title frequently applied to God in the Old Testament. It denotes His supremacy over all the earth and thus clothes Him with an authority which God gave, etc. Nebuchadnezzar's kingdom with its splendor and prosperity was by Daniel attributed to the providence of God.

V. 19. Nebuchadnezzar is portrayed as a typical Oriental despot whose sway over his subjects was absolute. Whom he would he slew, etc. "His personal will was law in all things" (Driver). In a capricious mood he would have one subject executed and another elevated to honor.

V. 20. His heart was lifted up. See Deut. 8: 12-17 and 17: 20. He had become so elevated above his subjects in his pride, that he dealt arrogantly with them and forgot the obligations he owed them as their king. His mind hardened, etc. In this respect he was like Pharaoh, Exod. 7: 13, 22. He attributed his success to himself and overlooked God who was the cause of it. He became insensible to divine influences. He was deposed. The account of his deposition is given in ch. 4: 28-33.

V. 21. Driven from men, Nebuchadnezzar became insane and his insanity unfitted him for human intercourse. His heart . . . like the beasts, His mind and disposition were reduced to the level of the beasts—irrational and savage. Apparently Nebuchadnezzar he was a wild beast. The wild ass as Driver characterizes him. The wild ass is an untamable animal which roams in the open plains; to dwell with the wild ass would thus be a special mark of wildness and savagery. They fed him with grass. Apparently Nebuchadnezzar imagined himself as an animal, and so he was treated as an animal. His body, etc. He dwelt in the open fields and shared in all respects the life of the wild beasts. For the neglect of his person see ch. 4: 33. **V. 22.** Till he knew, etc. Reason was restored to Nebuchadnezzar when he acknowledged the true God from whom he derived his kingdom.

V. 23. Belshazzar's sin was twofold: (1) he had taken the holy vessels

Testing Varieties of Grains. An idea of the extent and importance of the work in the interest of agriculture carried on under the Experimental Farms system of the Dominion Department of Agriculture can only be obtained by a study of the reports of twenty-one different farms and stations, the dozen or so sub-stations, and the eighty illustration stations, of which the Farm at Ottawa is the controlling centre. One of these reports that has recently made its appearance is that of the Dominion Cerealist, for 1921. In that report, Dr. Saunders states, there were 756 plots of all sizes at Ottawa, representing 600 fixed varieties of grains. Detailed tables are given of the results of the tests made in 1921. Numerous cross-bred sorts which have not yet been named and are in a preliminary state, are omitted. Of these tests, 112 were of varieties of spring wheat; seven of emmer and spelt; 27 of oats; 103 of barley; five of spring rye; 29 of field peas; 14 of field beans; 137 of flax, and 18 of barley for hay. In addition, 629 varieties of grain were under test for the Dominion Cerealist at the different farms and stations located in all parts of the country. Experiments for the control of smut were carried on last year, and 10,061 distributions of free seed samples were made, consisting of 3,230 samples of oats, 2,906 of wheat, 1,085 of barley, 522 of flax, 845 of beans, and 1,463 of peas.

All's Right With the World. The year's at the spring, And day's at the morn; Mornin's at the noon; The hill-side's dew-peared; The lark's on the wing; The snail's on the thorn; God's in His Heaven. All's right with the world! —Robert Browning.

Safety First. A man looked into a shotgun to see if it was loaded. It was. A man struck a match to find the leak in a gas pipe. He found it. A man speared up his molar car to see if he could get over the track ahead of the train. He didn't.

Fight Weeds Now. This is the season of the year when the farmer should work hard to keep down weeds. They are more easily killed now than later and the crops will have a better opportunity to keep the weeds subdued. Just before harvest time is on in full blast the farmer usually has a little breathing time in which this work can be done before the weeds have time to develop to a size sufficient to resist ordinary treatment.

A Boy's Prayer. Give me clean hands, clean words and clean thoughts. Help me to stand for the hard right against the easy wrong. Save me from habits that harm. Teach me to work as hard and play as fair in Thy sight alone as if all the world saw. Forgive me when I am unkind and help me to be kind to those who are unkind to me. Keep me ready to help others at some cost to myself. Send me chances to do a little good every day and so grow more like Christ.—Hyde.

Your Stock Will Appreciate This. The great annoyance and loss in flesh of your farm animals, due to flies during the hot months, can be eliminated by the liberal use of a good fly repellent. The following solution is highly recommended. Dissolve one cake of laundry soap in four gallons of soft water, and while boiling hot, add one gallon of crude oil slowly, and stir vigorously for ten minutes. To this add four ounces naphthalene, and shake for fifteen minutes, care being taken to keep away from the fire. This solution is best applied by spraying, but can be put on with a moistened cloth. Care should be taken to apply to hair only, and not to rub the skin. Renew every day or two.

The Rainbow. My heart leaps up when I behold A rainbow in the sky: So was it when my life began; So is it now I am a man; Or let me die! The child is father of the man; And I could wish my days to be Bunch'd each to each by natural piety. —Wordsworth.

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Some Potato Spraying Essentials

Factors in Spray Application That Are Often Overlooked

BY M. D. LEONARD.

Potato spraying can be made profitable in almost any part of the country. Where blight is prevalent, fifty to one hundred bushels per acre increase may be expected from proper spraying, and even in the absence of blight twenty-five to forty per cent. increase in yield is not unusual.

There is a right way and a wrong way to spray potatoes. Disappointing results are almost sure unless certain conditions are strictly observed, and the success obtained will have a direct relation to your faithfulness in following these rules. This has been clearly brought out by a study of potato spraying methods in various sections of the country.

There are three links in the chain of successful potato spraying. "A chain is as strong as its weakest link." Failure to comply with any one of the following rules is almost sure to make all the difference between loss and profit from the operation.

Start early and spray often. Don't wait till the potato bugs are abundant and have already injured the vines. Young bugs are killed more easily than old ones. Three or four applications as a rule are not enough; seven or eight are usually better. Year in and year out every additional spray will more than pay for itself.

The Right Way.
1. Use High Pressure—Spray your potatoes—don't sprinkle them. Seventy-five pounds pressure is not enough. Insist on a machine that will maintain at least 150 pounds pressure on twelve nozzles; 200 pounds is better. The finer the spray the longer it sticks and the greater the covering power. Low pressure means coarse drops with unsprayed leaf surface in between. High pressure means a fine mist which thoroughly covers every square inch of leaf surface. The greater the pressure the greater the yield.

2. Use Three Nozzles to the Row.—One should spray downward on top of the vines and one from each side inward and upward. This is important. No nozzle spraying downward will cover only the upper side of the leaves. Leaf-hoppers which cause hopperburn, flea-beetles, blight sores and aphid attack the underside of the leaves. If you want to get the greatest cash returns from the time and money put into spraying, protect the lower side as well as the upper side of the leaves. Three nozzles to the row correctly arranged will give twice the yield from spraying, other things being equal, to be obtained from only one nozzle to the row.

3. Use Correct Type of Sprayer.—Small hand or knapsack sprayers are satisfactory on small plantings up to about one acre. They should always be provided with a short extension rod and angle nozzle so as to spray the underside of the leaves. Barrel sprayers often give very good results on plantings up to about four or five acres. Not more than two rows should

be sprayed at a time, using three nozzles to the row. Traction sprayers are in most general use. All makes are not satisfactory, however. Be sure the machine has a large pressure chamber and a pressure gauge. Don't waste money on a low pressure machine—it won't pay. 4. Use Enough.—Don't skimp on the spray material. A machine that will only deliver twenty-five gallons per acre is not worth having. All parts of the vine cannot be thoroughly covered with less than fifty gallons per acre, and when they get large, one hundred gallons or even more will be necessary to do a thorough job. Double the amount of material per acre and you will almost double the yield and the net profit from spraying. Keep vines covered throughout the growing season with a protective coating of spray.

Use the Right Material. A good spraying material should meet the following requirements:
1. It should mix easily with water—no save time.
2. It should remain in suspension for a long time—that indicates good mechanical condition.
3. It should be so fine that it will not clog the fine nozzles, and fine nozzles are necessary to get good distribution.
4. It should cover the foliage with a fine film of spray—coarse materials do not protect against the fungus diseases.
5. It should stick for a long time to the foliage—that means a longer period of effectiveness.
6. And above all, it should give real results.

To give the best results a spraying material should combine a good fungicide with a strong poison. The poison alone does only half the job—it only kills bugs. The fungicide is often far more important because that part of the material controls serious diseases, like potato blight and the accompanying tuber rot. It controls such insects as the little green leaf-hopper and the resulting hopperburn or tipburn, as it is sometimes called. The fungicide in the material also helps control flea-beetles. And, moreover, if it is of the right kind, the fungicide frequently increases the yield by as much as twenty-five to fifty bushels of potatoes to the acre. This increase is due entirely to the stimulating action of the copper on the foliage. There are reasons why most agricultural authorities agree that it does not pay to spray potatoes and most vegetable and fruit crops with a poison alone. The fungicide is much more important and both materials can be applied with the same expenditure of time and labor. Two jobs can be done for the price of one. Mix nicotine sulphate in some form with your spraying material where aphid (plant lice) are troublesome.

IF YOU WANT IT—GO AND GET IT

Generally speaking, we do not succeed beyond our expectations. Going through the motions of faithful work is only one of the requisites. The other, and equally important requisite, is to make up our minds just what we want life to give us and then to lay down the order blank before Fate and say: "Here is the dotted line; sign here."

The sales manager of a big company took a trip to discover why one of his salesmen was getting so little business, and together they called on a dealer to sell him some motor-spectacles. The salesman made a splendid presentation of the goods. The sales manager was surprised; he had supposed, from the small volume of orders, the man secured, that his knowledge of the line must be deficient. But the man had every argument at his tongue's end, and used them all.

After fifteen or twenty minutes the dealer was called away to visit on a customer, and the salesman, turning to the sales manager said: "I have told that fellow everything I know; what would you say now?"

"Don't you think," said the sales manager, "that it would be a good idea to ask him for an order?"

After a few minutes the dealer returned, and in the course of the conversation that followed he remarked that he was just waiting for the salesman to finish with his talk in order to give him the business.

That story came back to me recently when I had two conversations with two men of contrasting types. One of them is a junior executive in a large corporation.

He graduated from school ten years ago, and discovering that his education had not given him a complete equipment for business, took two dollars a week out of his first salary of ten dollars and spent it for a night course in a business college.

A little later he found his work bringing him into contact with the legal department of the business, and he devoted his spare time to acquiring a working knowledge of the law. "Every year I pick out some one subject and devote my study to it," he said to me. "I hate the thought of coming to the end of December and finding myself no bigger than I was on the first of January."

The second man, also a junior executive of a business, is very discontented. He is reaching around for some opening into work that will have "more future."

I asked him what he had read in the past five years, and he said that he didn't get much time for reading. I asked him what sort of work he thought he would like, and what he had done to develop his knowledge and his acquaintance among men who might open the way for him.

The questioner seemed to surprise him. He had been doing satisfactory work in his present position, he said, and hoping that "something would turn up."

These two men correspond to the sales manager and the salesman in the story, and the world is pretty much divided between the two types.

One type of man tackles the work of every year with a definite plan and a fine expectation that his work will count toward something better. The other merely goes through the motions, hoping vaguely that there will be a reward at the end. One asks the world for the order; the other uses the same language, and may do the same work, but he does not expect that the order will come—and usually it does not come.

Charles M. Schwab once remarked that he made it a rule to do business with none but "lucky men"—meaning men who had formed the habit of succeeding and of assuming that they would succeed.

Men who understand that you get what you want only if you expect to get it, and go after it.—Bruce Barton.

A New Kind of Story-Telling.

Every parent is familiar with the old cry, "Tell me a story!" but not all parents can answer it satisfactorily. One mother began when her children were very young to teach herself and them to tell interesting stories. She had a considerable collection of pictures, most of which she had put out of pedicels, and she began at once to add to the number. Then she grouped the pictures according to subject, and placed each group in an envelope. Whenever she told a story she selected a picture to illustrate it. Every day when the story hour came round the youngsters found some of the pictures pinned to a screen. Sometimes the mother used only one picture as material for a short story. At other times a group of related pictures helped her to tell a longer and more difficult tale. For example, in one group the first picture showed a grove of sugar maples, the second showed men tapping the trees, the third showed the fourth and last picture was that of two children sharing a piece of maple sugar. Almost any child would be eager to hear a story so suggested. As the children grew older their mother encouraged them to add to the collection pictures in which they saw story-telling possibilities, and to tell for themselves the stories that the pictures suggested to them.