

Von Holderbeke on Black Spot.

Pullman, Wash., Oct. 3, 1903.

Editor The Ranch.

Dear Sir:—Some time since we sent a copy of a bulletin entitled "The Cause and Cure of Black Spot or Apple Tree Anthracnose, Pear Blight, Gumosis," by A. Van Holderbeke, State Commissioner of Horticulture to Mr. Albert F. Woods, Pathologist and Physiologist of the United States Department of Agriculture, for examination. We have just received a letter from Mr. Woods in which he discusses this bulletin. I quote it as it may interest your readers.

This letter (published below) is self-explanatory and will need no further comments.

Sincerely yours,

R. KENT BEATTIE,
Acting Botanist.

Washington Agricultural Experiment Station.

Washington, D. C., Sept. 15, 1903.

Prof. C. V. Piper,

Agricultural Experiment Station,
Pullman, Washington.

Dear Professor: I am in receipt of your letter of Sept. 7th, enclosing a copy of a bulletin entitled, "The Cause and Cure of Black Spot or Apple Tree Anthracnose, Pear Blight, Gumosis," by A. Van Holderbeke, State Commissioner of Horticulture.

I have read this bulletin with much interest. His statements in regard to gumosis are in the main correct, at least, for certain types of the disease. He is also correct in the idea that, in general, conditions unfavorable to well balanced growth are likely to put a tree into a condition making it susceptible to fungus and insect attack, such, for example, as excessive moisture or excessive use of nitrogenous fertilizers. He has, however, in my opinion, entirely overestimated the relation of nutrition conditions to the disease in question, namely, black spot and pear blight. The parasites in both these cases are extremely active and virulent, and while, of course, they do most damage in soft, immature growth, they do not depend upon any previous diseased condition in order to produce serious infection and well defined disease. So far as our investigations have gone, we have never found any such conditions as are described in this paper as nitrate spots, and I think Mr. Von Holderbeke has undoubtedly misinterpreted the pathological symptoms.

Regarding the remedies which he suggests, of course, too much cannot be said warning people against planting trees too deep and in soil which is too rich, or in soils which lack the proper nutritive elements or proper aeration. Any of these conditions which may be unfavorable to normal, healthy, vigorous growth may make a tree more subject to insect or fungus attack, but none of these conditions are fundamental in the production either of black spot or pear blight. It is unfortunate that the author of the paper should so greatly overestimate the relation of conditions of nutrition and environment to the production of this disease. I am afraid, also, that he is not very familiar with plant physiology and plant pathology in general.

I doubt whether it would pay to try to criticize a matter of this kind in print, although, if you want to quote any portion of what I have written, I have no objection to it. The publication is unfortunate, of course, in that it may prevent some from accepting the true and proper explanation of the causes of these diseases.

Thanking you for sending me this publication, I am, very truly yours

(Signed)

ALBERT F. WOODS,

Pathologist and Physiologist U. S. Dept. Agric.

Growing Hairy Vetch for Seed.

The following information relating to the growing of hairy vetch for seed is furnished by the Bureau of Plant Industry of the U. S. Department of Agriculture, through its Seed Laboratory, in response to numerous inquiries on the subject:

The cultivation of hairy vetch has increased rapidly in the last few years and would be much more common if the seed was raised in this country, and especially on the farms where it is to be sown.

Practically all of the seed now used in the United States is imported from Europe.

During the fiscal year ending June 30, 1903, over 80,000 pounds of this seed was brought in.

Experiments have been carried on by the Seed Laboratory of the Bureau for two years. From the results of these trials it is evident that the seed can be produced at a profit over a wide area in the United States.

Great difficulty has been experienced in harvesting the seed when grown alone. It ripens very unevenly and if left until most of the seed is mature it becomes matted on the ground and shells and moulds badly. It was found that by sowing with rye a sufficient support was furnished to keep it off the ground and allow it to be cut easily with a mowing machine: Rye seems best adapted as a supporting crop on account of the time of ripening and the stiff straw.

The best results were obtained with seeding from one-half to three fourths bushels of vetch and one-half bushel of rye to the acre, sowing from the middle to the last of September.

The crop should be cut about the time the last pods are formed and the vines are getting dry. The cutting is done with an ordinary mowing machine, after which the vines and straw should be put in piles and allowed to dry. The threshing can be done with an ordinary grain threshing machine.

The four acres in Ohio yielding 13 bushels of vetch and 61 bushels of rye. In Maryland the storms knocked the rye down so it did not fill well, but the four acres yielded 18 bushels of vetch and 8 bushels of rye. Reports from Mississippi show a yield of from 5 to 7 bushels per acre in that state.

In many instances hairy vetch has been sown and proved a failure under ordinary cultivation. As it is adapted to a considerable variety of soils and a wide area, it is certain that the failure in most instances is due to the absence of the organism which produces the root tubercles and has the property of fixing free nitrogen in the air, making it available for plant food. In sowing the areas referred to above the greater part was inoculated with the nitrifying organism, but a strip was left in each case on which none of the inoculating material was used. A vigorous growth of hairy vetch was obtained on the inoculated plots, while on the uninoculated plots in both cases the growth was very scanty and the ground almost bare. This shows the ability of the vetch to make a very satisfactory growth by means of the inoculation on ground where it proves an entire failure under ordinary cultivation.

Unless hairy vetch has already been grown successfully on a piece of ground, it should be inoculated to insure success. Inoculating material will be furnished by, and all inquiries concerning it should be addressed to, Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D. C. The department has no seed of hairy vetch for distribution.

The Problem of Digging Spuds.

By C. E. Chapman.

One of the heaviest and by all farmhands considered the most dreaded tasks that comes in the fall is digging potatoes. The getting them out of the ground is not only hard work but the slowness of it grinds on the spirit. The aching muscles make the nerves tender and there are more rows with the help at this time than at any other. The size of the labor bill grows faster than the spud heap, and an examination of the tubers shows many damaged and worthless from

the holes, cuts and bruises made in digging. Naturally one turns to machines, but in order to do good work they must go beneath the hill so as not to cut the potatoes, must separate them from the vines, dirt and stones and must work in soils wet or dry, level or hilly, clean or weedy, hard or soft, stony or sandy, loam or muck.

They must elevate or they will clog, and in elevating they have such a load that a heavy draught and very fast motion are required to get the machine along and keep it unloaded. The ordinary plows with rods behind have no principle to them, no accurate way of separating, and may or may not dig half the tubers—especially not if the vines are heavy. The big machines such as are used in the Greeley district, will dig fairly well, and I have dug at the rate of two thousand bushels a day on a level field planted in hills with soil dry and fine. But the trouble is they are too large and require too much help for the small farmer—four horses to draw, two more to draw tubers to the storage place, a driver for the machine, six men to pick up and two for the sorter and sacker. It is a good deal like threshing time, and plenty of extra work for the women in the house. A breakdown, causing a delay of two or three hours, costs money for the time lost by the help waiting for repairs.

Under favorable circumstances we have dug with a machine at a cost of four cents a sack, but usually it costs eight to twelve. We can hire them dug by hand for the same money, and all that is gained with the machine is ease in digging, time for other things and no damage to the tubers. The spuds are not marked or stabbed and the ground is cleared rapidly so as to be sown to wheat. For some it is easier to sit and drive than to dig by hand, but I found it required a steady hand and considerable patience to drive four horses and keep all parts of the machine right. The machines are adapted and profitable only for large operators. I had to study out some way to do it better and cheaper and, after many trials now use a plow. A fork, if not too limber-tined, will work very well in our lighter soils, but I cannot stand it to use one all day, and I believe that everything done to make the work easier is just as much a gain as is time saved.

Is there as much as \$5,000,000,000 in cash anywhere? That is the amount which the farmers and planters of this country will want for the products of 1903. If they had not learned to put their money in the banks or were not such good customers to the rest of the country, farmers and planters could corner the money of the nation, for theirs is the real stuff which sells for cash on delivery. The country is rich which can raise and market such an amount of the products of the earth and employ only about a third of its population in producing it. Here is the real touchstone of prosperity which tells when to build railroads and to invest money without apprehension in many a line of industry.—Editorial Munice, Ind., Star.

Sacrificing immature cattle now, must mean less fat cattle later on.

Instead of packing hogs, the packers' employes talk of packing their tool kits.

The display of politicians was the biggest exhibit at the state fair this year.

A. B. C. of Bee Culture
\$1 postpaid. The Ranch