

**Paper: Alternaria or Blight - Its prevalence - Can it be successfully combated? The use of various spraying mixtures. W. J. Beal, Ph. D., D. Sc., E. Lansing**

I have written copies of what I presented to the Association last year and I have the same illustrations here. I am not going all over that ground, neither have I very much to say that is new. I got into this business through the suggestions of Prof. Smith, Director of the Experiment Station at that time. I have had no enemies to fight in my garden. I have not been able to get any alternaria, although I have plenty of it on some Golden Seal within ten feet of the Ginseng. The battle is already fought. It has been proved that there is such a thing as fighting this alternaria successfully even after the patch has gone down. Since that has been proven, what is the use of my trying to prove it over again?

I am very fortunate in having right here this morning, a young man who goes about and gets groups of people together and talks with them about spraying. He has been a successful orchardist and I beg to introduce Mr. O. K. White who will talk to you about nozzles and sprays.

Mr. White: I am not acquainted with this Ginseng industry, although I have seen several small plantations, more particularly up around Mancelona. Now in this talk on spraying, I shall not confine myself to the Ginseng industry, but about spraying for almost any kind of disease. As Dr. Beal has said something along the line of spraying, I want to emphasize still more fully that the essentials of spraying are along four lines: Proper materials must be used, must be prepared properly and applied in the proper way and at the proper time. Now just to go over a few of the main sprays. First for scale, San Jose scale, or I can say safely, any other scale or insects which you find upon your fruit trees. You have to use a spray strong enough to kill them and consequently cannot put it on the trees when they have foliage on or it will kill the foliage. Lime and sulphur are used. There are several different ways of preparing, but the most common is in the proportion of 15 pounds Flowers of Sulphur to 20 pounds of lime. Stone lime is by far the best. If you use Paris Green you must put in a small amount of lime to counteract the acid. For Fungi, to

which class this alternaria belongs, the standard remedy is Bordeaux mixture. The commonest way to make Bordeaux is to take four pounds Copper Sulphate or blue vitrol and dissolve it and add a little excess of lime, about five pounds would be best, and fifty gallons of water. I presume, with Ginseng, it would be a good thing when spraying if you can use a little patch and experiment with the different strengths and thus find out what is best for your particular location and different atmospheric conditions. In making the Bordeaux, always have the two solutions diluted before you put them together. That is, have a barrel of diluted Copper Sulphate, 25 gallons, and another barrel of diluted lime, 25 gallons, and pour together simultaneously.

Dr. Latimer: Will this solution spoil by keeping?

Mr. White: They will be all right if kept in a closed vessel so there will be no evaporation. I should say they could be kept three months. That is kept separately. Always use Bordeaux just as soon as you possibly can. After it settles once you cannot get it back into as good condition as it was.

Mr. Pierce: Is it not a good plan to disinfect the garden before the plant comes up?

Dr. Beal: They spray the ground before the plants come through and it is safe to spray right along whether you find alternaria or not, spray the shade and spray the roof. It is cheaper than to run the risk.

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Description of different nozzles by Mr. White.

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Mr. Roof: I have been able to arrest the work of alternaria after it has started. My method is this: I mix my Bordeaux as he told you except that I use four pounds of copper sulphate and six of lime. I presume if I should put in eight pounds of lime it would be just as well, but I mix it four and six and fifty and I begin my spraying in the fall after the plants have died down. The first thing of importance, it seems to me, is to gather old tops and burn them. You will destroy a certain amount of spores in that manner. Then I spray the garden thoroughly, with eight



pounds of copper sulphate to fifty gallons of water. Then in the spring, before the plants start, I again spray with that same preparation. That saturates the soil. Then I spray the plants with the Bordeaux mixture as soon as the tops start, before the leaves unfold. I do that especially on account of reaching the seed berry, which is about the first thing that appears. I want to be sure and reach the part that comes through the ground first. Then I follow that up once each week or ten days until in July. I have never sprayed my garden after the 10th of July. We have understood that ordinarily alternaria does not appear after the middle of June. I have always sprayed up to the 10th of July.

Mr. Vining: In spraying your garden, Mr. Roof, do you merely put a spray on the leaves or do you drench them?

Mr. Roof: I always get on more than I think I need, simply because I have not been able to get just the pressure that I want.

Mr. Brown: Our brother seems to have an idea that you might over spray. We have a power sprayer at our garden and we carry from 100 to 150 pounds pressure and everything is well saturated and we never saw any ill effects from the spray.

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## Thursday, P. M.

### **Paper: Summer Root Rot or Soft Root Rot, cause and remedy.**

***F. N. Latimer, M. D., Ludington***

I am in a section of the country where we have neither and I can find nothing to give you except what you will get out of Special Crops. If you don't want root rot, get into sandy soil like I have.

Mr. Pierce: We had a little trouble on the older plants, but it did not seem to bother the seedlings very much. Some died and I found the roots were decayed. I sent a couple of specimens to Prof. Whetzel and he said there was evidence of fibre rot and that I should use some kind of acid. That it was caused by an excess of alkali in the soil. All of our two year olds, that we set out a year ago this fall, were set on new ground. Some of it was