

## SEMI-ANNUAL FIELD TOUR ORANGE COUNTY OCTOBER 20, 1928

**DUTTON:** Well, folks, meeting come to order! This is the 25th or 26th Semi-Annual Meeting—I don't remember which. We have had so many meetings we are a little bit aged. The Semi-Annual Meetings of the California Avocado Association are of late more in the nature of a field tour and a get-together meeting where growers can talk things over among themselves and get acquainted.

In view of the fact there is the greatest avocado crop in the history of the industry to market and that most growers are getting into the producing stage, most of the talks on the program are marketing talks.

But before we start—some diseases have been affecting both the tree and the fruit. The State is doing good work along this line. Prof. W. T. Horne has been devoting most of his time to this and he has a little report to make on Anthracnose. Before we start the program I will ask him to make that report now.

**Prof. W. T. HORNE:** I was quite surprised to see such a large gathering. I am quite new to the work down here and though I have been in the South from time to time, I have been located, as you know, at Berkeley. I suppose most of you know I am located now in Riverside and one of my duties will be first to see what I can do about studying whatever troubles you may have in avocado diseases. I don't take up insects. We have lots of good entomologists in Riverside who will look after insect troubles.

Avocados are comparatively free from diseases though no trees or plants are entirely free. That would be too good to be true.

One of the troubles which has caused the most loss of fruits where avocados have generally been grown in Florida, Honolulu, West Indies, and different places, has been the fungus disease known as "Anthracnose." Now I worked for several years in Cuba where they have a great many avocados in a rather miscellaneous way growing around the country and I didn't have an opportunity to learn about the avocado disease, Anthracnose, very much. It wasn't brought very much to my attention. I can't help but think, however, it is disastrous.

There have been some complaints in California from Anthracnose and this Anthracnose disease of avocado in this state, as it has been described to me, though I haven't seen very much of it though I have been in the state some time, causes black spots. When the fruit is getting pretty well along in size, these spots commence to show up. They keep on getting worse and make spots that cause the decay of the ripening fruit. So it may be a very serious matter if it should develop.

The trouble is more or less related to moisture which favors the development of these diseases.

We have made out a little program of suggestions for doing what they do in other countries to prevent this Anthracnose injury. You will notice that I say "to prevent" for it

isn't so easy to stop. I will read what we have prepared. It is not based on California experience and so it is experimental as far as we are concerned. It has been tried out in Florida and some of the other places and reported as a successful program for preventing Anthracnose.

The following suggestions for experimental spraying to control anthracnose spotting of avocado fruits were made by Dr. Fawcett in Oct. 1927. It remains the best suggestion we have and should also be the indicated preventive for blast spotting. Experiments in Florida have shown that a similar spotting may be largely prevented by spraying with Bordeaux mixture 4-4-50 formula. The following experiments based on Florida experiments and modified with reference to California conditions are suggested for trial.

*General Notes:* It is probably not necessary to start spraying until the fruit is from one-third to two-thirds mature. The fungus probably depends largely on dews, fogs or rains for infection. These might occur any time of year in orchards near the ocean, but only at certain seasons in orchards inland. Success in prevention will probably depend on keeping the surface of the fruit covered with a thin film of the fungicide during the latter part of the growth of the fruit especially during moist, foggy and rainy periods. Possibly two or three sprayings would do this. I didn't say anything about Blast but some of you know about that. That is also a black spot on the fruit.

Suggested schedule for experiments in spraying for 1929-1930 season

1. Spray in November as soon as possible, because perhaps it will be November by the time you would get around naturally to spray.
2. Spray a second time in 6 or 8 weeks from first spraying.
3. Spray a third time 6 or 8 weeks after the second.

The interval could be varied according to the rapidity of maturity of the variety at hand. If one has a very early maturing fruit the interval might be cut down to 4 weeks and if a very slow maturing fruit it might be lengthened to as much as 8 or 10 weeks.

The spray should be directed especially to cover the fruits and their stems, and should have in it a suitable spreader so that the material will wet the entire surface. Besides Bordeaux mixture, ammonical copper carbonate and Burgundy mixture may be tried.

That is three of these are suggested. All of these are well known standard fungicides of tested merit for certain diseases.

SPRAYS FOR EXPERIMENTAL TESTS	
I. Bordeaux mixture 4-4-50. Use spreader at rate of 1 pound Kayso to 100 gallons, or other good spreader in proper amount.	
II. Ammonical copper carbonate.	
Copper carbonate.....	5 oz.
Ammonia (26 Baume).....	3 pints
Water.....	50 Gals.
Dilute ammonia with 1 gallon of water. Then make copper carbonate into a paste with water and add this slowly to dilute ammonia. Add water to make 50 gallons. Use spreader at rate of 1 lb. Kayso to 100 gallons water, or other suitable spreader.	
III. Burgundy mixture.	
Copper sulphate.....	4 lbs.
Washing soda (sodium carbonate).....	5 lbs.
Water.....	50 gals.

For 200 gallons fill tank two-thirds water, put in 16 gals, containing 16 lbs. copper sulphate. Then water in which 20 lbs. sodium carbonate has been dissolved. Then fill to 200 gals. Use spreader 1 lb. Kayso to 100 gallons, or other suitable spreader.

*Procedure for procuring reliable data.* Because of variation in amount of spotting from year to year, it is waste of money to experiment without strict controls. Spray only a block or set or rows or trees, and leave untouched other strictly comparable trees of same age and variety as controls. No information will be gained for future guidance unless this leaving of checks is adhered to strictly.

Please bear in mind this is experimental as far as California is concerned. The things we want to remember is that it will not do any good if we spray the whole orchard. You will need to leave part unsprayed according to your judgment to find out what you want to do next time.

It will probably be simpler in most cases for one grower to use only one of these three spray materials, and for different growers to use another, etc., so that all three will be tested out. The last two materials in the list will leave less visible deposit on the fruits, but the first will probably adhere longer during rains without being washed off.

Now if any of you care to carry out these experiments and wish to, I will be very glad to help you any way I can. I don't know that I can get around to all of your places. You have a good many avocado growers here. But I shall be glad to give any help I can so that after this year we will know about the prevention of Anthracnose, providing we have an Anthracnose year as we have had before.

I think I have taken all the time I should and perhaps made this matter clear. There are a good many other diseases we are studying but I see nothing disastrous for avocado growers that needs to be. We will all have to look out for what is to come but chances seem to be good. I congratulate you on the fine industry you have and the prospects you have for something better. Dutton: We are very fortunate in the amount of help we are getting from the University. We know it is a very important matter in the case of citrus and some of the other fruits. Combating diseases is one of the most expensive things the grower is up against. If we can prevent this, it is a mighty good thing for the grower.

## **AVOCADO THEFTS**

The season is arriving when the grower is going to be troubled by stealing. The Sheriff of Los Angeles County has put on a high-class detail to watch for that type of theft. In Orange County the deputy sheriffs have broken up one of the oldest and most established rings of fruit thieves. A number of the gang were caught and put in jail, including the ring-leader. In the case of Orange County, a good deal of this was for the protection of orange growers. Oranges are out of danger now and if we don't express our appreciation of this work and ask for a continuance of the protection, that detail may be taken off. The Orange County growers might pass a resolution addressing the Board of Supervisors, commending the good work done by these deputies and calling attention to the fact that the season of avocado protection is right at hand and asking for continual protection. I should suggest the Orange County members authorize the officers to draw up the proper resolution. If that is done, I think this efficient Orange

County detail will be retained. Otherwise, if we don't express our appreciation, it will be withdrawn.

Newman: Mr. Chairman, I move that you write such a resolution expressing our appreciation. Also I should like to have you include while you are at this business of expressing our appreciation, an appreciation to the Horti