

VEGETARIAN

No. 19

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MR. COUNTY AGENT:

SEEDBEDS---late or early?

Expect your first reaction to the above was that it's too late to worry about seedbeds. Granted, but we're trying to be early for the fall plantings---now's a good time to review seedbed difficulties experienced this past season and to note tentative plans for trial demonstrations for the next crop. Growers might be particularly receptive...

Mr. Don Burgis, Gulf Coast Station, is cooperating to make available to you his recent summarization on herbicides, nematocides, and soil fungicides for vegetable seedbeds. We'll be more than pleased to forward mimeographed copies on your request. It's to the point, practical, and covers use of MC-2, allyl alcohol, EDB, DD, and copper drenches. Ask for it...

BOTRYTIS---another rampaging disease.

It's been observed on other crops and in other areas, but we've asked Dr. J. M. Walter, Gulf Coast Station, to trace out some developments of the past season for you. He says:

"During the winter of 1952-53 many tomato growers suffered severe losses because of gray mold, caused by Botrytis cinerea. Cool, damp weather favorable for the increase of the fungus prevailed for many weeks. The disease develops particularly beneath heavy foliated vines on the ground and makes the problem of application of a fungicide (if a control was available) quite difficult. Though present, Botrytis is not an important problem on staked tomatoes.

"Experience has made it obvious that the fungicides nabam and zineb, are not effective against Botrytis. There have been indications that phyron XL, which is very effective against late blight but not effective against gray leaf spot (red rust) and early blight, is relatively effective against the Botrytis disease."

Your tomato growers should know that Dr. John F. Darby, Indian River Station, is studying this disease closely and is obtaining encouraging results with certain fungicides. The problem of coverage still remains, and attempts at control include key applications before the plants 'go down'. We hope to present you with Dr. Darby's latest findings when they are available for our use.

GHOST SPOT---tomatoes and teamwork.

Another interesting angle on Botrytis cinerea...English investigators indicate that "Ghost Spot" (check Figure 46-FB 1934) may be caused by the penetration of the surface of the tomato by spores of the fungus. They say these infections occur only when humidity is high, and apparently the fungus does not survive in the fruit. Drs. Darby and Walter are investigating this possibility.

A research team organized by Director W. M. Fifield recently reviewed the "knowns and unknowns" of ghost spot, in cooperation with county agricultural agents surveyed the Immokalee-Devil's Garden area where ghost spot has been particularly prevalent, and concluded that Botrytis should be tested thoroughly as a likely causative agent before further studies are undertaken.

CALCIUM---seems the key to blackheart.

Looks like Dr. C. M. Geraldson, Gulf Coast Station, really has something in foliar applications of calcium for control of blackheart of celery. There's still

plenty of checking to be done, but---Dr. Geraldson says:

"We have been using foliar applications of either .05M calcium nitrate or calcium chloride with equal success for the control of blackheart. Commercially, that would be about 10 lbs./100 gallons of calcium nitrate and about 5 lbs/100 gallons of calcium chloride.

"During the Fall season such applications weekly controlled blackheart 100 percent. The check plots contained about 50 percent blackhearted plants. Treated plots yielded about 150 percent more marketable celery. Spring trials sre now being carried on where concentrations are being increased. That may be desirable as some growers are experiencing difficulty in controlling blackheart, especially when it is quite severe. The .05M treatment can be applied 2 or 3 times weekly and literally poured on if that is desirable.

"More likely the main difficulty is proper application. The calcium must reach the heart area in order to be effective. Let me emphasize that point - I have yet to find a celery plant no matter how severely blackhearted, that will not respond to calcium treatment 3 to 5 days after application. If secondary infection such as soft rot is prevalent it may be too late, or if sufficient calcium does not reach the heart area as the heart continues to grow, the treatment will not be successful.

"Good farming practices which have previously been recommended for control of blackheart should be utilized in conjunction with the foliar calcium treatment."

The reearch isn't closed out, but it's interesting to check back through past Vegetarians (2, 10, 14) and follow the progress of research by Dr. Geraldson and Dr. P. J. Westgate, Sanford Station. It's a good piece of work and will mean a lot to the celery industry.

Notes on Highlights

POTATO INVESTIGATIONS LABORATORY FIELD DAY

Hastings

(Dr. A. H. Eddins, Dr. E. N. McCubbin, Dr. T. M. Dobrovsky, and Dr. Nathan Gammon)

Cabbage and Cauliflower Varieties: Cabbage varieties recommended for commercial production: Med. Copenhagen Res. a (yr); Med. Copenhagen Res. b (yr); Bonanza; Early Glory of Enkhuizen; Glory of Enkhuizen; Marion Market (yr); Copenhagen Market 86; and Red Acre. Cauliflower varieties recommended for commercial production: Snowball X; Snowball Y; Snowdrift; and Holland Erfurt.

Lettuce 'Drop': Variety test results were complicated by Sclerotinia or 'drop'. It seemed significant to note that a treatment of 1,000 lbs. cyanamide applied 60 days prior to planting was not successful in controlling the disease in these plots.

Chelates: Sequestrene-metal chelates of iron, zinc, manganese, copper, magnesium, calcium and cobalt, were being tested at varying rates in the soil. The check plots, i.e., those not receiving chelates, were best. At relatively high rates, the chelates were injurious in these tests.

Whiptail: Correction of the soil pH and applications of molybdenum in very small amounts have given control of whiptail in Snowball A. Snowball X is resistant. It was indicated that molybdenum applied to the soil last year was retained to give control this season.

Systemics: The systemics gave outstanding control of aphids. The residue problem remains; even methods of analysis for systemics have not been worked out.

Corky Ringspot: This disorder affects the tuber surface and gives a certain amount of internal discoloration of potatoes. Corky ringspot is present in the Hastings area and seems to be spreading. No controls are known. It was thought last year

that there was some relationship between plowsole and corky ringspot. Varieties and selections are being screened for possible resistance and other attempts at control are being studied; i.e., chiseling the land.

Notes on Highlights

SUB-TROPICAL EXPERIMENT STATION TOMATO FIELD DAY

Homestead

(Dr. Geo. Ruehle, Dr. R. A. Conover, Dr. J. L. Malcolm, Mr. J. C. Noonan, and Dr. D. O. Wolfenbarger)

Tomato Varieties: Some of the newer lines show promise for the Homestead area. STEP 176 rates high in size but is slightly flattened. STEP 193 rates high in productivity but later than Homestead and Jefferson. STEP 89-4 is an indeterminate selection of Homestead; several weeks later than Homestead but considerably more vigorous; probably would make a better tomato for staking or putting on 8 foot rows. Stokescross #2 is a second generation hybrid showing considerable vigor and Fusarium wilt resistance.

Soil Rot: Rhizoctonia solani is the principal rot affecting tomato fruit in the area. Records of several seasons show that 20% of the total yield of spring tomatoes is affected. Treatments with thiram, captan, and pentachloronitrobenzene were sprayed on the soil surface after the tomatoes were "laid by". The pentachloronitrobenzene was particularly promising last year.

Fungicide-Yield Tests: There is considerable discussion on the relative effects of certain fungicides on tomato yield and disease control. Plots were designed to measure such differences as 1½ and 2 lbs. zineb; nabam plus zinc sulfate with and without spreader-sticker; two forms of nabam plus manganese and the commercial mix.

Blight Resistant Tomatoes: Excellent progress had been made toward breeding a late blight resistant tomato when a new and virulent race of the fungus appeared in last year's planting. The sources of resistance succumbed to the virulent race as did all their progenies. The virulent race is present again this year. Most plants, while perhaps appearing to be resistant, have some normal sporulating lesions of late blight.

Fertilizers: Tomato plant differences were observed under varying rates of N. P and K, a soluble fertilizer spray test, and a nitrogen-potash ratio test. Yield response had not been determined. Final results should be interesting; e. g., it appeared that the plants in zero-phosphorous fertilizer plots continue to look good after several seasons tests.

Insecticides: Parathion and EPN gave outstanding control of serpentine leaf miner and aphids, on tomatoes and gave satisfactory control of worms where regular weekly applications were made. Unless regular weekly applications are made, and if a severe worm infestation should occur, they may not give satisfactory control of worms. Control of worms may be obtained by either of the following: DDT - 2 lbs. 50% w.p. or 1 qt. of 25% emul.; toxaphene - 2½ lbs. 40% w.p. or 1½ pts. of 60% emul.; TDE- (DDD, or rhothane) 2 lbs. 50% w.p. or 1 qt. of 25% emul.

OTHER VEGETABLE FIELD DAYS COMING UP---you'll see individual publicity on them. See that it gets passed on to growers and industry contacts.

<u>Indian River Field Laboratory</u>	Ft. Pierce	April 28	1:30 PM
<u>Gulf Coast Experiment Station</u>	Bradenton	April 29 10:00 AM, repeat tour	1:30 PM
<u>Everglades Experiment Station</u>	Belle Glade	April 30	1:30 PM
<u>Main Station</u>	Gainesville	May 21	9:30 AM

Sincerely,
Forrest E. Myers

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