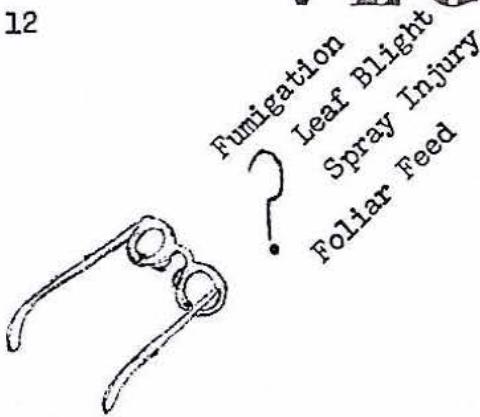


## VEGETARIAN

No. 12

September 5, 1951



Mr. County Agent:

We realize there are some very outstanding questions in your mind as the Fall vegetable season bears down on you. Will our stand as of this date mean that we're giving the final answer? No, not by a long shot.

We want you to have in mind that what we say here represents current viewpoints you should have based on the results available. As the results accumulate the picture may shift in any direction.

SOIL FUMIGATION? - how's that for a starter?

The evidence to date indicates that soil fumigation on a field scale in vegetable production is still to be viewed with a critical eye.

Certainly there have been some outstanding responses to fumigation, depending on the source of the report. But YOU, as a county agricultural agent, consider some of the facts not so highly publicized--but of definite importance to your work and the grower you advise.

Take for example this instance in the Gulf Coast Station's annual report manuscript for the year ending June 30, 1951. Seems the cantaloupe variety trials (Project 391) were abandoned.

"Land which was to be planted was known to be heavily infested with root knot and was treated with complete fumigation at 1 foot spacing 6" deep 20 days before plant setting. Plants were grown in sterilized soil in bands and transplanted after two true leaves had formed. Plant growth was delayed somewhat by low temperatures, but it was soon obvious that something other than this was wrong. Inspection indicated that although the area had been fumigated for root knot, the field had somehow become reinfested and that the young seedlings were so badly infected that the plant stand was reduced to less than 10% in some plots."

Enough to re-emphasize that fumigation is not always a sure-cure? If you want to get technical and really go into the problem we suggest the comments on microbiological studies following fumigation of seedbeds in the Florida Agricultural Experiment Station, June 30, 1950, Annual Report.

If you'll check the 1950 results, here's how it now appears in the manuscript of the Gulf Coast Station report for the year ending June 30, 1951. These were spring tests to determine the residual action of nematocides applied in-the-row on a field scale using DD, EDB, calcium cyanamid, and technical chlorobromopropene CBP-55 three weeks prior to the date of planting.

"The stand of squash was significantly decreased by DD and CBP-55. Cyanamid and CBP-55 adversely affected the number of tomato plants surviving transplanting. There were no significant differences in fruit yield between the check and any of the four fumigation treatments in the spring crop. Root knot was not a problem until late in the season.

"From a microbiological point of view the fumigants exerted little or no effect on the number or species of soil fungi. However, nitrification or the conversion of ammoniacal nitrogen to nitrate nitrogen was significantly depressed by all four fumigants. This depressive action was noticeable for from seven to 10 weeks after fumigation. DD and cyanamid produced the greatest depressing effect on the nitrifying power of the soil."

Just our way of saying it's fine when it works, BUT---

NABAM VS. ZINEB AND CUTICLE DAMAGE OF TOMATOES?---see letter of April 27th.

You'll remember our earlier references to this type of spray injury on tomatoes.

State Project 291, Sub-Tropical Station, Homestead, in the manuscript for the Annual Report for 1951 reads something like this:

"Testing to determine the factors responsible for and to alleviate the injury to tomato fruit and foliage that has resulted from using nabam sprays, fruit injury occurred with all combinations of nabam plus zinc sulfate. Filtering the nabam or adding quantities of the sediment commonly found in drums had no effect on fruit injury. The injury was eliminated by using B1956 (spreader-sticker), and reduced by lowering the spray pressure from 400 to 200 lbs. Nabam and zineb used alone, or zinc sulfate used with zineb, did not cause fruit injury. These results suggested that the factor responsible for fruit injury was a reaction product of nabam and zinc sulfate."

At the Gulf Coast Station, Bradenton, State Project 449 annual report manuscript for 1951 shows studies of five schedules:

1. Copper and nabam alternated weekly, with wettable DDT each time copper was used.
2. One application of copper to two of nabam, with wettable DDT in the mixture every other week.
3. Same as No. 2 except zineb substituted for nabam.
4. Copper alternated with nabam for first 6 weeks, then phygon XL replaced copper for the remainder of the season, with DDT wettable combined with the nabam.
5. Zineb weekly, wettable DDT every two weeks.

Although Manasota is known to be very susceptible there was only slight development of the damage. Damage on fourth and fifth harvest fruit indicated the following:

"Schedules 3 and 5, which received no nabam, showed no cases of the damage. There were no significant differences between schedules 1, 2 and 4. However data show the amount of cuticle damage varied with dose and pressure. Most important, data show that use of spreader-sticker at 4 ounces per 100 gallons sharply reduced the injury, though failing to prevent it in any plot."

In another experiment reported in Gulf Coast Project 449 the injury was reported to be very severe. This test was given four applications of ferbam in addition to the routine applications of nabam and copper.

"Analyzed data indicate that the cuticle damage was less severe on ground tomatoes than on those staked and pruned to a single stem." Also shown were some varietal differences.

FUNGICIDES CONTROL LEAF BLIGHT OF SWEET CORN?---see letter of April 27th.

This cooperative project was described in an earlier letter and here again we'll give our interpretation of how it reads in the manuscript for the 1951 Annual Report. From State Project 587, Sub-Tropical Station, Homestead:

"Sprays applied as a complete cover on a regular schedule before the disease was established were superior to applying fungicides only with budworm insecticidal sprays, or attempting to check the disease after it was established. Among the fungicides tested, all in combination with DDT, zineb gave the best results followed in order by nabam plus zinc sulfate, ferbam, ziram, a puratized agricultural spray, and phygon XL. Severe injury was observed in plots sprayed with the last two materials. Mixtures of DDT emulsion with all fungicides formulated as wettable powders caused formation of greasy clumps."

Over at the Gulf Coast Station again you can check the observations we passed on to you last April. In addition to the three first crop observations you can add: "(4). In preventing the development of the disease on young corn plants zineb at 120 gallons per acre on a 3-day schedule showed clear superiority to zineb at 60 gallons per acre on a 6-day schedule, the latter schedule being that for application of DDT emulsion for budworm control."

In a second crop at Bradenton "thorough spraying with zineb and nabam gave economic control with an increase in yield much greater than needed to cover the cost

of applying fungicides; the best treatment was 15 applications of zineb with which DDT wettable was combined on 11 occasions."

FOLIAR FEED MAJOR ELEMENTS?---see letter of April 27th.

Just to refresh your memory we'll make some quotes you may not have picked up in your other information on this subject. These come from miscellaneous projects reported in the manuscripts of the Florida Agricultural Experiment Station annual reports for the year ending June 30, 1951.

Horticulture, Main Station, Gainesville:

"In the fall of 1950, three levels of nitrogen were applied to the soil compared with three levels of urea nitrogen applied to the foliage of tomatoes. The results of this experiment, which have limited application, would seem to indicate that no benefit was derived from foliar applications of urea nitrogen, whether alone or in combination with soil nitrogen, when compared with equal amounts of nitrogen applied to the soil.

"In the spring of 1951, urea foliar sprays were compared with side dressings of nitrate of soda as sources of supplemental nitrogen. No significant differences were found between the two sources in total yield or number of fruit harvested."

Gulf Coast Station, Bradenton:

"Trials indicated that crops with high fertility requirements, such as the tomato, showed little or no response to foliar feeding as far as the major elements were concerned. Tomato plants bedded and side dressed with a total of 1800 pounds of fertilizer per acre and receiving a weekly spray application of nitrate of potash or of a soluble 13-23-13 fertilizer over a 7 week period gave no increase in yield over those not receiving such sprays. Plots top dressed with nitrate of potash significantly outyielded plots sprayed with nitrate of potash or soluble urea over a 4 week period at the time of harvest. Similar results were obtained in both fall and spring tests."

Sub-Tropical Station, Homestead:

Compared sprays of borax, ferbam, and three soluble fertilizers. "All treated plots yielded more than the check but the differences were not significant."

Strawberry Investigations Laboratory, Plant City:

"Nine weekly applications of commercial nutrient spray materials containing all primary and trace elements were made to strawberry plants during October to December, in addition to the regular fertilizer program of 300 pounds of commercial fertilizer per acre per month. There were no significant differences in plant growth and yield between sprayed and unsprayed".

AT PRESENT RATE OF FINDING SAME, WON'T WE RUN OUT OF TROUBLES ONE OF THESE DAYS?

Nope.

Keep in mind split personalities, split infinitives, split plots---now tomatoes get in the act. (State Project 402, Gulf Coast Station, 1951)

"This disorder is characterized by a pronounced dwarfing of the plant. In severe cases the stem splits near the growing tip, often leaving a hole through the stem if and when growth is resumed. In moderate cases a longitudinal cut through the stem reveals internal necrosis near the base of the growing point and frequently in areas below. On entire fields or isolated plants, on old and new soil, and no correlation apparent with fertilizer or with any minor element."

See?

Dr. L. O. Gratz, Assistant Director, Research, cooperated in making available the manuscripts quoted herein.

Make an effort to attend the Florida State Horticultural Society meetings this year October 30, 31, November 1 and 2, West Palm Beach, O.K. So you have zillions of meetings to attend. Wanted YOU to know that the vegetable section will offer a well-rounded program designed along grower lines of interest, and featuring one of the panel discussions you are familiar with through your area vegetable meetings.

Hort./FEM:RV  
9/5/51 -- 250

Sincerely,  
*F. S. Jamison*  
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