FIELD DAYS — many new developments.

Five locations of the Florida Agricultural Experiment Stations have reported on work in the field of vegetable production in the past 45 days. We'll attempt in this letter to point out some of the highlights—-it's just a small portion of the work actually presented. Several Stations have as yet to announce Field Day dates—-

PHYLIS RESISTS — tomato late blight.

A primitive tomato (plumb-shaped and named Phyllis), despite what you may have at first thought, may have a definite place in the tomato industry one of these days. Phyllis has resistance to late blight and is being crossed with lines carrying resistance to other diseases. Dr. J. M. Walter, Plant Pathologist, Gulf Coast Experiment Station, and Dr. R. A. Conover, Plant Pathologist, Sub-Tropical Experiment Station, grew progeny of these crosses last winter and showed that the resistance of Phyllis had been inherited.

Seed from single plant selections and plants from back-crosses to large-fruited tomatoes are in this year's plantings at Homestead. Several other primitive tomatoes with late blight resistance are also under study.

Dr. Conover pointed out to Dade County Tomato Growers' Field Day that while these lines show considerable resistance to late blight they are a long way from being commercial varieties, and that by the time such standards are reached that the late blight resistance may be lost.

TOMATO BREEDING LINES OF INTERMEDIATE STAGES UNDER OBSERVATION AND SELECTION FOR COMBINED RESISTANCE TO COMMON SOIL-BORNE AND FOLIACEOUS DISEASES — whew!

In addition to being responsible for that title, Dr. J. M. Walter, Gulf Coast Experiment Station, opened our eyes with something else in tomato breeding lines.

"The experienced tomato grower knows that he must expect some difficulty in obtaining a stand of plants on old land because of soil organisms such as Rhizoctonia. Resistance to Fusarium wilt is not all that is needed to make a new tomato variety suitable for economic production on old land. It seems certain that we have in the Hanahill superior hereditary characteristics that should be very useful in this connection."

Stocks have shown superior hardiness in previous tests or in ordinary culture on the old fields at the Station. These results suggest that there are possibilities to select from Hanahill for a superior level of resistance to Rhizoctonia.

We might add that stocks are under test for everything from root-knot to water damage—believe they mean business down there!

VARIETY TESTS — replicated and observational tomatoes.

STEP 89 seems to be leading the pack of promising tomato varieties being tested by Dr. Geo. D. Ruehle, Vice-Director in Charge, Sub-Tropical Experiment Station. He indicated STEP 89 looks like the best out of the program in that area. The new variety appears uniform, resistant to Fusarium wilt, and not highly susceptible to blight.
What happened to the Mo. S-34 line that was so promising? Susceptibility to blight and uneven ripening were among the reasons pointed out. Several new strains of the same ‘blood’ look worthless down there to date.

STEP 68, one of the previous leaders, doesn’t look so good this year. It’s listed as a wilt resistant line, in case you wondered. STEP 158, resistant to anthracnose, collar rot and wilt, is carrying a lot of fruit but is not quite classed with STEP 89.

Dr. Ruehle pointed out the following observational lines as promising:

- STEP 160 and 161, Gulf Coast Experiment Station, (Multiple resistant);
- STEP 171, USDA Vegetable Breeding Laboratory, (Wilt resistant);
- STEP 175 and 176, USDA Vegetable Breeding Laboratory, (Wilt, collar rot resistant).

Comments to the side accompanying these tests were that STEP 179 (listed as crack resistant) didn’t have many fruit to crack. Several hybrids, 89 x Mo-S-34, Mo-S-34 x 89, Mo-S-34 x Manahill, and Manahill x 89, seem to have good yields of quality fruit—maintaining a seed supply was something else!

BLIGHT RESISTANT CELERY—

Dr. R. W. Ruprecht, Vice-Director in Charge, and Mr. Ben F. Whitner, Assistant Horticulturist, Central Florida Station, indicated that the new blight resistant variety, Emerson Pascal, seems to be well-adapted to the muck but their cooperative work with Cornell University is continuing.

The idea is to get something, even better for sand land celery.

FUNGICIDES FOR SWEET CORN—leaf blight control.

Workers at the Sub-Tropical Experiment Station, Gulf Coast Experiment Station, Everglades Experiment Station and the Central Florida Experiment Station are conducting a cooperative program to provide information for recommendation on economically controlling Helminthosporium leaf blight.

Treatments included are zineb, natac and material L06 applied with budworm sprays only or after the disease has started, and zineb applied on a regular schedule from the time the plants are small. Other treatments depend on locality.

Dr. R. A. Conover, Sub-Tropical Experiment Station, observes possible burning with natac sprays, and definite injury from applications of phygon XL and a purified agricultural spray. He also included zineb (with and without sticker), ziram and ferbam.

Dr. J. H. Walter, Gulf Coast Experiment Station, has several other observations of interest to date:

1. Zineb and DDT emulsion are physically not compatible.
2. The pathogen takes 10-11 days to complete a spore-cycle on Ioana.
3. Material L06 is believed to be causing an intolerable amount of injury.

Present recommendations by Dr. Walter say, "Thus far the experimental work on this problem does not warrant a definite recommendation for economic control of leaf blight. However, tests at Belle Glade last year showed that the disease can be controlled on an experimental basis by applying zineb at 3-day intervals."

BLACK ROT CONTROL—further tests.

Black rot has been brought under control by treating cabbage seed with hot water at 125° F. for 25 minutes; cauliflower and broccoli, 18 minutes.

Further tests by Dr. A. H. Eddins, Plant Pathologist in Charge, Potato Investigations Laboratory, show that little black rot is carried over in the soil from one year to the next one; none, the second year after an affected crop.
NABAM SPRAY INJURY—tomatoes

Dr. R. A. Conover, Sub-Tropical Experiment Station, reported that for the past two seasons injury has been observed in experimental plots and in commercial fields sprayed with nabam plus zinc sulfate (with or without lime). Symptoms as now recognized include stunting, leaf-roll, marginal chlorosis and a reddish-brown fruit spotting.

The question is naturally asked, "Does the same injury seem to occur with the use of zineb?" Dr. Conover answered, "No." He is conducting tests to provide an answer as to the cause and to indicate what might be done to prevent it.

Theory so far points to the possibilities of a zinc toxicity and does not discount the likelihood of some injury from iron compounds accumulating in the sludge commonly found at the bottom of long-standing drums.

Applications at reduced pressure, a modified nabam for better compatibility, filtered nabam, spreader-sticker treatment, nabam with lime, nabam without zinc sulfate, and several others, are among the treatments being compared with nabam and zineb.

SYSTEMIC INSECTICIDES—recognize but watch

Several new systemic insecticides seem to be entering into the trial stages with entomologists over the State.

These may or may not have a future place in the vegetable deal—you get the idea, the material was sprayed on the foliage, is absorbed into the plant system, and from there acts as an insecticide. Too, you understand the reverberations that could accompany any such usage.

About the most striking demonstration of the insecticidal nature of systemics we've seen was in cabbage plots at the Potato Investigations Laboratory, conducted by Dr. J. W. Wilson, Entomologist, Central Florida Station, absolute control of the cabbage aphid resulted.

For now—limit yourself to knowing that such a method exists. No recommendations.

SOIL FUMIGATION—easy boys!

Dr. E. L. Spencer, Soils Chemist in Charge, Gulf Coast Experiment Station, reiterated to growers at their field day the same story on fumigation agents heard at the recent training school.

Summed up—there's more then meets the eye. Postpone fumigation as long as possible. Don't give up on the possibilities of rotation and following for a season. Dr. Spencer's recommendation says, "When necessary, in-the-row treatment with ethylene dibromide, 26 (80-20) gallons per acre prior to each crop." (We'll string along for the present.)

MINOR ELEMENTS—Hastings cabbage

Dr. E. N. McCubbin, Horticulturist, Potato Investigations Laboratory, gave some interesting information on including minor elements in cabbage fertilizers.

No response in yield was evident where fertilizers included per acre rates of forty pounds of MgO and MnO, twenty pounds each of ZnO and CuO, and ten pounds of borax, Dr. Cubbin stated, "Minor elements in the fertilizer have not increased yield of cabbage over a period of three years."

Treatments included comparisons of no minor elements with plots receiving all of the elements listed, and with plots receiving only four of the five elements.
WHIPTAIL OF CAULIFLOWER

Progress on another trouble was reported by Drs. A. H. Eddins and E. N. McCubbin, Potato Investigations Laboratory.

"Whiptail" of cauliflower due to a deficiency of molybdenum was partly corrected by adjusting the soil to pH 5.2 with hydrated lime. Snowball A is very susceptible.

Dr. Eddins indicated the possibility of correction with molybdenum applications, or sprays is not recommended at this time.

If you think boron is a touchy individual--read up on molybdenum!

BLACKHEART OF CELERY

Plots shown by Dr. P. J. Westgate, Central Florida Experiment Station, demonstrated the incidence of blackheart as associated with high rates of fertilization. Under the conditions of the experiment--

There was an increase in marketable celery up to applications of 3 tons of 5-5-8 per acre. When rates of four tons were applied, blackheart entered the picture, and the marketable yield was reduced to less than the yield with 3 tons of fertilizer. Five tons per acre increased the total yield in comparison to the 1 ton rate, but decreased the marketable yield.

NUTRITIONAL SPRAYS---major elements

Tests at the Gulf Coast Experiment Station, Bradenton, with nutritional sprays on tomatoes are being conducted by Dr. E. L. Spencer and Dr. C. M. Geraldson.

Recommendations are, "Previous tests have yielded conflicting results. Value of nutritional sprays for supplying major elements such as N, P, K, Ca, Mg, etc. are still questionable except perhaps under unfavorable growing conditions."

Dr. J. L. Malcolm, Sub-Tropical Experiment Station, is testing some of the commercial preparations along these lines. He draws no conclusions to date.

EAST COAST FERTILITY TRIALS

One of the most interesting plots we've seen lately is over at the Boynton branch of the Everglades Experiment Station. Dr. W. T. Forsee and Mr. W. A. Hills are observing the results on beans of varying the ratios of 2, 5 and 8% nitrogen, to 0, 6, and 12% phosphorus, to 3, 9, and 15% potassium--

in twenty-seven possible combinations.

Of course, the test will come in yield records. Observations indicate, however, that when applied at the rate of 1000 pounds per acre at planting time, a 8-12-9 gives the best growth but the color is lighter than when a 5-0-15 was used. The 5-0-15 has the best color but plant growth is not quite as good where the 8-12-9 was used.

This is one we want to watch.

DIFFERENTIAL PRUNING---staked tomatoes

David G. A. Kelbert, Gulf Coast Experiment Station, gives a new slant on pruning tomatoes.

"The object of differential pruning is to increase yield by one cluster without increasing the denseness of the plant. One side shoot is permitted
to grow as practiced with two-stem pruning, but the bud is removed above the first bloom cluster. Preliminary tests indicate an increase of 10% in yield, most of which was equal in quality to first cluster fruit on the main stalk.

Somewhere in the rush of getting out our last newsletter we failed to cite Professors Wade McCall and George Thornton as responsible for getting you the charts we included on average percent content of fertilizer materials and relative availability of elements correlated with pH. We're glad to back up and acknowledge their fine cooperation.

Sincerely,

F. S. Jamison
Vegetable Crop Specialist

FOR OUR RECORDS IN ESTABLISHING A PERMANENT MAILING LIST PLEASE RETURN FOLLOWING INDICATING YOU DESIRE TO CONTINUE RECEIVING THE VEGETARIAN: (County Agents exempt).

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