

Vegetable Crop Specialists

VEGETARIAN

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WE TRIED, but ---

With all of the sound research projects found it very difficult to single out highlights of the vegetable field days over the State in your last newsletter.

Now comes one more---that of the Main Station---and here too, ALL projects looked interesting and more than promising for the vegetable industry.

Rather than narrow it down, we feel you will profit by an idea of the over-all picture at the Main Station and how it may tie-in with the work and problems in your areas.

Remember, Mr. Agent---most of the recommendations YOU make may be based on research results incorporated from these and similar projects over the state. Florida Agricultural Experiment Stations are meeting problems head-on.

On to the Gainesville vegetable field day---

BREEDING to EATING¹

Breeding: Dr. A. P. Lorz, a full-time plant breeder, is at present concentrating on producing adapted varieties of bush and pole, snap and lima beans with superior quality, appearance, yield and/or disease and insect resistance. Along with several varieties of southern peas for observation, the Korean² Crowder pea is being grown for seed increase and further study. Under the graduate program, M. W. Hoover and Dr. Lorz are studying physiological changes in the blackeye pea to establish what stages of maturity are best suited for freezing and the best blanching treatments.

Pepper virus troubles may be approached through breeding. At any rate, Dr. Phares Decker (yes, Florida Market and Florida Beauty eggplant) is screening a world-wide collection of peppers to be tested for possible tolerance or resistance. Tipped-over the phomopsis deal, didn't he?

Varieties: Always there are variety trials---divided between Dr. V.F. Nettles, L. H. Halsey, Dr. R. A. Dennison, Dr. C. B. Hall, Dr. F. S. Jamison, and last and least, F. E. Myers. Goes something like this---with number of varieties concerned in ():

Replicated: pepper (15), tomato (21), cucumber (16), bean (5), sweet corn (5), watermelon (11), onion (2) and sweet potato (14).

Observational: pepper (7), tomato (29), sweet corn (29), and cantaloupe (1).

Seed Source: tomato (16), and pepper (12).

Following up on the variety angle is a study of the response of the bean and corn varieties to five possible fertilizer programs.

Fertilization: Dr. R. A. Dennison is particularly interested in potash sources and rates as influencing tomato quality---he's checking 125 and 250 pounds per acre each of muriate and sulfate of potash. Then too, there is an experiment on the

¹ Cooperate?---if you'll say 'eading' to pun with 'breeding' we'll suppress similar attempts for 10 letters.

² South Korea, we hope.

response of Rutgers tomatoes to fertilizer applied prior to planting or by split application, and comparing nitrate of soda, nitrate of potash, sulfate of potash and ammonium nitrate as side-dressing materials. Dr. Dennison is also studying pepper (California Wonder) under 4-7-5 applied as 2000 pounds in one application; 2000# in two applications, 1500# in three applications, 800# in three applications, and 500# applied prior to setting with 40# of nitrogen plus 50# of potash in two later applications.

Shifting over to watermelon fertilization, Drs. Dennison, Hall and Nettles are out to answer some of the age-old and current questions. Quality as influenced by the muriate source compared with the sulfate source of potash? Yields as influenced by possible combinations of 20, 60 and 100 pounds per acre of nitrogen and 20, 60, 100 and 140 pounds per acre of potash? Yields and quality as influenced by the possible combinations of 0, 80 and 160 pounds per acre of calcium and 0, 20 and 40 pounds per acre of magnesium?

Nitrogen-Sprays vs. Soil: Dr. C. B. Hall and J. Montelaro, under the graduate program again, are studying the response of tomatoes receiving 20 or 40 pounds per acre of nitrogen at planting to foliage sprays of urea, as compared with soil applications of nitrate of soda as a side-dressing. Know there'll be considerable interest in the results---

Fumigation-Fertilization: Can't leave fertilization just yet---wanted you to know that Dr. V. F. Nettles is checking the response of sweet potatoes to broadcast ethylene dibromide fumigation as affected by fertilization with 1000 and 1500 pounds per acre of a 4-7-5 or 4-7-10 applied prior to planting and in split applications.

Under the graduate program, S. Hamdi and Dr. Nettles are checking Rutgers tomatoes under different fertility levels treated with broadcast applications of soil fumigants. Not satisfied with just this season's effect, Dr. Nettles is studying the residual effect of both broadcast and in-the-row fumigation under several sources of nitrogen---using the Contender bean as the crop.

Irrigation-Fumigation: On the Latin square irrigation plots you are probably familiar with, Dr. Nettles is measuring the response of cucumbers to none, heavy and light over-head irrigation, with and without fumigation treatment with ethylene dibromide in-the-row.

Weedicides: Relative control of nutgrass with 2½, 5 and 7# per acre of the sodium and alkanolamine forms of 2,4-D; maleic hydrazide at 5, 10 and 15# per acre; and sodium TCA at 20 and 40# per acre---credit this one to Dr. Dennison.

Drs. Dennison and Nettles wanted to get a look at several vegetable crops sprayed purposely with 2,4-D at three different stages of growth. They did. Saw about what you would expect, too---with one exception. Corn sprayed with 2,4-D seemed to resist drought.

Handling: field and storage.

Can't just harvest and forget about 'em. Dr. C. B. Hall has a test to determine the effect of vine removal, delayed digging, and delayed grading after digging on the skinning of Irish potatoes. Now there's a piece of needed work.

VIC³ also has a project to investigate better ways of curing and storing onions. He reports satisfactory yields of the Excel and Early Texas Grano varieties, and has them in storage after artificial curing in a hay drier for 16, 24, 37 and 45 hours at 112° F.---and at room temperature, of course.

Vegetable Products Laboratory:

Doesn't seem to be a singular heading that will cover ALL that was going on under the same roof at this Lab on field day. Let it suffice to say that research here finds tasty new products and improved techniques for processing, better methods

³Dr. V. F. Nettles. Refuse to repeat self 7th time on same page. He's getting

of packaging, how containers affect the product in transit, and then comes retail training in merchandizing.

The late H. M. Reed and Dr. R. A. Dennison, L. H. Halsey, R.K. Showalter, B. D. Thompson and S. E. Rosenberger were responsible for the work cited above.

IMPLEMENT LIFE---extended.

Getting a grower to reduce frequency and depth of cultivation can be talked about a lot without too much response---he's generally back raising dust before long! O.K., keep talking. Maybe there's another way you can help him.

We see in the 1950 Annual Report of the South Carolina Experiment Station that life of many fast-wearing surfaces on farm implements may be extended as much as four times by the use of hard-facing alloys on the surfaces of plow shares, cultivator sweeps, plow discs, etc. Some materials are applied by the use of oxy-acetylene welding equipment and others by electric welding. The alloy tested, stoddite, showed a saving from the money angle, too.

ON LIMING LAND---100 questions and answers.

Feel the need to brush up on the principles involved in liming? Special Circular 83, Ohio Agricultural Experiment Station, goes at it in a way we like. For example: "How do laboratory and plant-root extracting procedures differ?"

A.- In common laboratory procedures, exchangeable bases are replaced by ammonium and hydrogen ions. Plant roots operate on a similar basis. They excrete carbon dioxide, which, in the presence of water, forms carbonic acid. The hydrogen of this acid replaces the exchangeable bases of the soil complex, which may then enter the plant. Some plants have greater powers of affecting this exchange than do others."

Check---100 of 'em. (New York, Pennsylvania, Maryland and N. J. cooperating)

PICKING EFFICIENCY---some statistics.

Extension Bulletin 337, Purdue Agricultural Extension Service, shows some simple rules for making movements count in picking tomatoes.

They recommend two-hand picking only, and then with each hand carrying two tomatoes to the picking container. Some of the reasons cited:

- (1) Picking with one hand only---you pick 83 hampers when you should pick 100.
- (2) Resting one elbow on knee while the hand only holds tomatoes---you pick only 86 hampers in the time you should pick 100.
- (3) Moving hands to hamper with only one tomato in each hand---you pick only 90 hampers in the time you should pick 100.

DAMPING-OFF---more contributing factors.

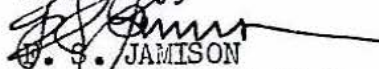
Damping-off is a typically seedling disease, two forms of which are recognized, the pathogenic and the physiogenic. Pennsylvania State College Agricultural Experiment Station Bulletin 509, shows the effects of excess solutes, temperature and moisture on several fungi causing damping-off. Excerpts you may be interested in follow:

"...When solutes are in excess, loss of moisture by evaporation and transpiration soon concentrates the soil solution to a degree that prevents the intake of water by roots or even extracts moisture from succulent plant tissues".

"...Data show that damping-off fungi grow with comparative ease in concentrations of soil solutes which seriously inhibit the growth of seed plants...Under favorable conditions for seed germination in sand cultures, Fusarium caused slight loss of seedling stand, but when germination was delayed or inhibited loss became very great!"

PERMANENT MAILING LIST---complimentary but unfruitful.--Had a good response to the attempt in your last newsletter to establish a mailing list. However, of 45 returns from research, state- or area-wide, and out-of-state interests, we had only 4 with suggestions. We'll continue about the same--but always open for improvement.

Sincerely,


G. S. JAMISON

Vegetable Crop Specialist