FLORIDA COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF FLORIDA
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES

Vegetable Crops Department

VEGETARIAN

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TO: COUNTY EXTENSION DIRECTORS AND VEGETABLE AGENTS

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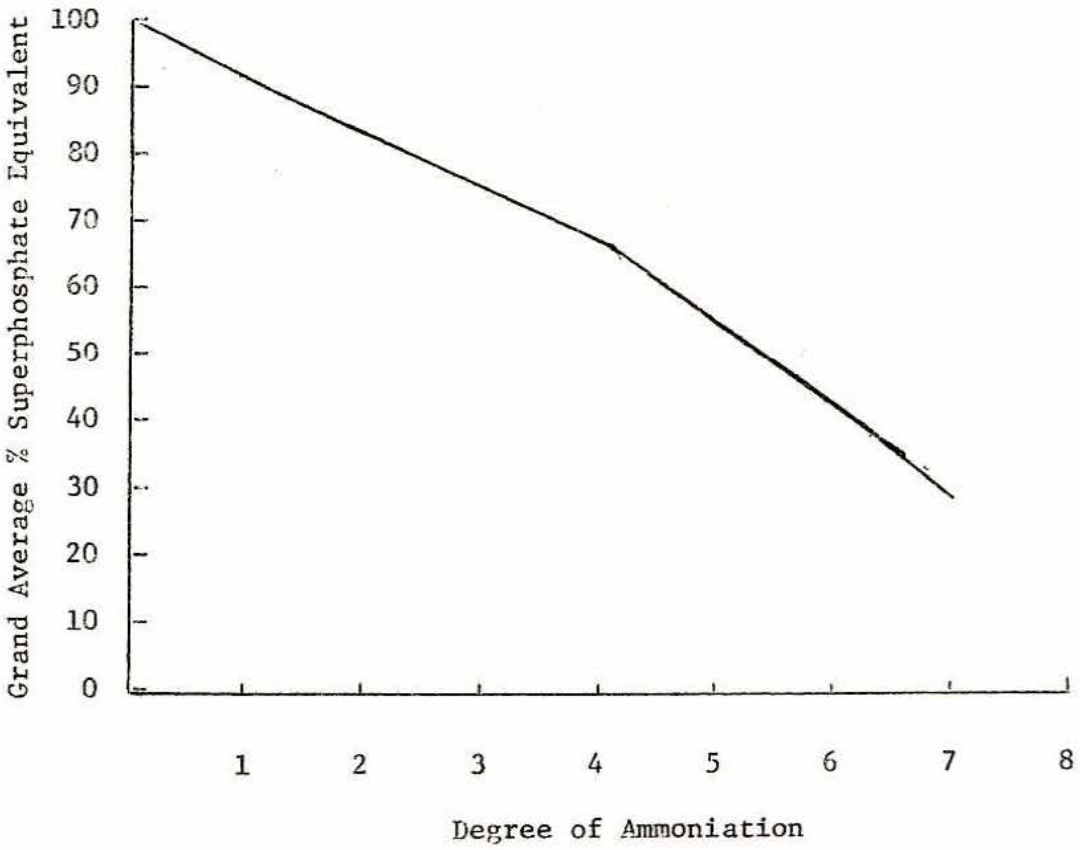
I. Ammoniated Superphosphate Use in Vegetable Production

Vegetable growers need to understand the behavior of ammoniated superphosphate in the soil in order to avoid unnecessary problems in the use of this material for fertilization of vegetable crops. As an example, extension agents encountered a phosphorus deficiency in a staked tomato crop this fall under conditions not normally expected to develop such a problem. Upon checking, we found that the fertilizer was formulated to supply all of the phosphorus from ammoniated superphosphate. A quickly-initiated spray program with a soluble phosphate source corrected the problem for the tomato crop in question, but it is one that can be easily prevented by the use of common sense in formulating fertilizers.

Ammoniated superphosphate is made by reacting ammonia with ordinary superphosphate. The degree of ammoniation is the factor that determines the value of the final product. If not carried to excess, it actually enhances the value of ordinary superphosphate by neutralizing some of the free acidity, improves physical condition and granulation, and incorporates an inexpensive source of nitrogen into the fertilizer. However, heavy ammoniation reduces the availability of phosphorus. This is demonstrated in the following table taken from Technical Bulletin 52 published by Mississippi State University. The authors drew these conclusions from forty-nine experiments conducted over a five-year period.

Table 1. Relationship Between % Superphosphate Equivalent and Degree of Ammoniation



It can be seen from this table that heavy ammoniation severely reduces the availability of phosphorus. At 1% ammoniation, about 94% of the phosphate is available, but at 7.2% ammoniation only 28% of the phosphate is available to the crop. These are average figures and may vary from crop to crop and soil to soil. Growers should know what percentage of the phosphate in fertilizer comes from ammoniated superphosphate and to what degree it was ammoniated. With this information, a grower can adjust phosphate fertilization accordingly. We suggest use of ammoniated superphosphate with a meximum of 3 to 4% ammoniation. In this range from 70 to 80% of the phosphate is available to the crop.

NOTE: Phosphate availability can, also, be greatly reduced by high pH and cold soils.

II. Pox on Tomatoes

Blemishes on tomato fruit were quite prevalent during the fall season this year. "Fleck" was rather common, but fortunately it does not mar the fruit too badly. As the name implies, fleck is characterized by tiny, gold-like specks on the fruit surface.

"Pox," on the other hand, is much more serious in that the blemishes often render the fruit unsalable. Pox blemishes are considerably larger than fleck. They vary from 1/16 to 1/32 inch in diameter. The tissue in the center may appear to be dead and surrounding tissue discolored.

Pox is thought to be a non-parasitic disease which is associated with genetic make-up of the variety. Foradel variety is considered to be very susceptible to both pox and fleck. Plant breeders are now trying to select away from this disorder.

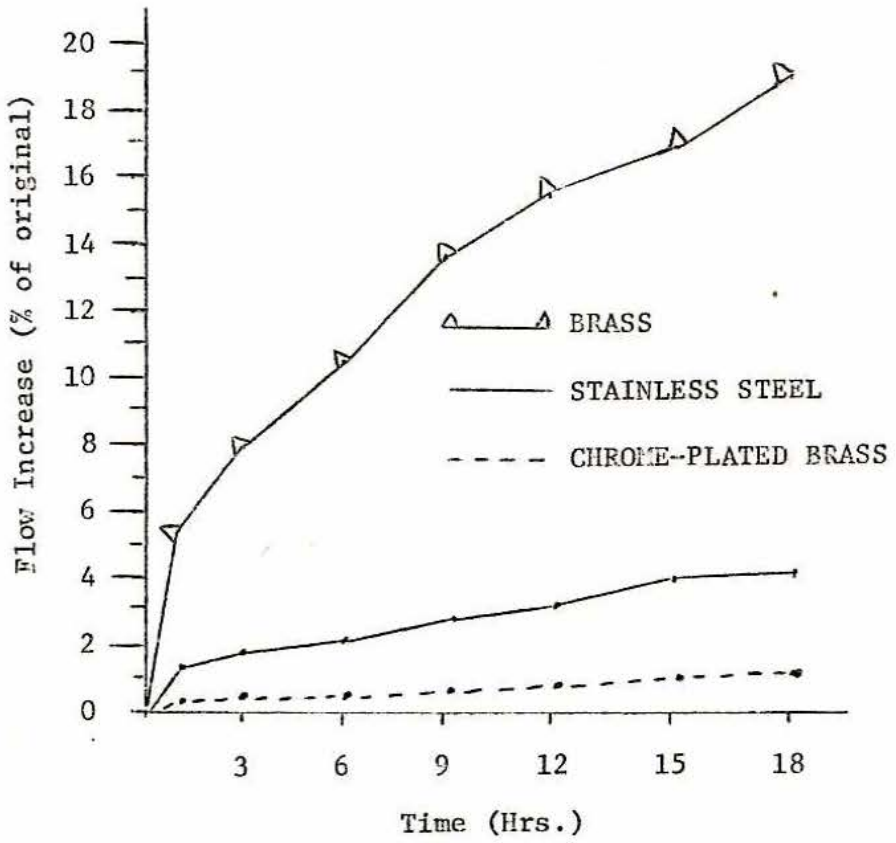
Field diagnosis of the problem can be made by observing fruit-bearing plants. Susceptible plants will produce many fruits that are severely affected with pox when conditions are right for its development. Fruits from plants adjacent to an affected plant may show little or no pox symptoms. It, also, appears that certain environmental conditions are necessary for pox development. As yet, we are unable to pinpoint these conditions.

III. Nozzle Wear in Spray Equipment

Emphasis being placed now on pesticide residues necessitates accurate calibration of spray equipment. With any given material, the one factor causing the most significant change in volume of solution delivered by a sprayer is nozzle wear. Abrasive materials such as pesticide formulation that are suspended in solution can cause considerably more nozzle wear than a non-abrasive, liquid material.

More important is the type of materials used for the nozzle. Table II demonstrates relative wear of nozzles made from brass, stainless steel and chrome-plated brass. Note that chrome-plated brass is very resistant to wear as contrasted to brass which shows an increase of about 19% in volume after only 18 hours of use.

Table II. Relative Wear Resistance of Different Nozzle Materials (From ARS 4291, Effects of Diuron on Wear of Spray Nozzles)



IV. Petite-Sweet - A New, Small Watermelon

The breeder who gave us Crimson Sweet has recently released a small melon which should be of interest to Florida growers. It is reported to have the same disease resistances and quality characteristics as Crimson Sweet. However, it only weighs between five and ten pounds.

This type of melon should eventually become an accepted fact for two reasons. First, it would appear to be more adapted to containerization, which is a coming thing. Secondly, many of our large melons are sold by chain stores in slices. This is a practice which is not conducive to expansion of watermelon demand because of quality loss and the danger of contamination.

Seed of this variety was released to commercial seedsmen this year and should be available from them sometime in 1971.

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