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Contents

I. NOTES OF INTEREST
   A. Vegetable Crops Calendar.
   B. New Publications.

II. COMMERCIAL VEGETABLES
   A. Crop Nutrient Requirement or Crop Nutrient Removal?
   B. Gulf Coast REC 38th Vegetable Field Day Program
   C. Vegetables and Health.

IV. VEGETABLE GARDENING
   A. Agrisoil - Compost From Municipal Solid Waste.

Note: Anyone is free to use the information in this newsletter. Whenever possible, please give credit to the authors. The purpose of trade names in this publication is solely for the purpose of providing information and does not necessarily constitute a recommendation of the product.
I. NOTES OF INTEREST

A. Calendar.


May 18, 1989. Vegetable Field Day, Gulf Coast Research and Education Center, Bradenton (Contact Don Maynard).


B. New publications.


(Maynard, Vegetarian 89-03)

II. COMMERCIAL VEGETABLES

A. Crop Nutrient Requirement or Crop Nutrient Removal?

Over the years, soil testing has been promoted as a key to profitable vegetable production. How many times have we asked growers "Did you get a soil test?" But how many times have we followed up by explaining the advantages and the pitfalls of soil testing (if the grower is not careful about the details)? Other articles in previous VEG issues have discussed the problems associated with choosing the wrong lab to analyze your samples. I would like to use this column to discuss an important philosophical question concerning fertilizer recommendations for vegetables. This concerns the difference between making recommendations based on a crop nutrient requirement concept and those made on the crop nutrient removal approach. Only the crop nutrient requirement concept fully utilizes the power of soil testing.

Everyone has probably seen tables of crop nutrient removal values in textbooks. These numbers represent the total amount of nutrients such as nitrogen (N), phosphorus (P), potassium (K), etc. that are removed by a certain crop. To arrive at these numbers, researchers simply analyze the whole plant (usually above-ground parts) plus fruit for nutrients. Usually a certain level of yield (bushels per acre, tons per acre, etc.) is associated with the numbers.

The crops used for these studies are usually grown under optimum fertilizer and irrigation regimes. As a result, the plants will accumulate amounts of some nutrients e.g. N and K in excess of what the plants actually require for optimum yield. This phenomenon is referred to as luxury consumption and the nutrients come from those in the soil and from fertilizer applied.

Many soil testing labs and persons making fertilizer recommendations use these numbers as fertilizer recommendations. Sometimes they are used without regard to any soil testing. In this case, no regard is given whatsoever to nutrients that may be in the soil and available to the crop. Often the crop removal values are used in conjunction with a soil test. Here, the lab has an idea of what soil test
level of a particular nutrient should be maintained in the soil and will recommend fertilizer in at least the crop removal amount to "maintain" the nutrient level and replace the nutrients removed by the crop.

You can see by now that the crop removal philosophy always recommends adding fertilizer. The weaknesses with this approach are:

1. Crop nutrient removal values often represent luxury values (excess nutrients) and 2. The approach ignores the fact that there might already be enough of certain nutrients in the soil, (even in sandy soils) to be "mined" by the crop for several to many years. As long as the crop can obtain the nutrient, it does not care whether it came from the native soil or from applied fertilizer.

The crop nutrient requirement concept on the other hand only recommends that nutrients be added when a response will result. Soil testing is used to its fullest advantages because the calibrated soil test tells us whether or not the soil already contains enough of specific nutrients for the crop.

If the soil test tells us that there is enough P or K already in the soil (from native P or K or from residual fertilizer) then no additional P or K will be recommended. If the soil cannot supply all of the crop nutrient requirement, then the correct calibrated amount of the nutrient is added.

The bottom-line difference between the two concepts lies in fertilizer efficiency because both approaches can result in high yields. Only the crop nutrient requirement approach is efficient in fertilizer management. Fertilizer materials are not cheap and are not in endless supply. Those adhering to the crop removal approach could be jeopardizing fertilizer needs of future generations and adding extra cost to our crops today.

(Hochmuth, Vegetarian 89-03)

B. Gulf Coast REC 38th
Vegetable Field Day Program.

Gulf Coast REC, Bradenton, University of Florida, IFAS

38th VEGETABLE FIELD DAY PROGRAM
Thursday, May 18, 1989

Field Day Coordinators - John Paul Jones and Don N. Maynard

Moderator: Dr. Don N. Maynard, Extension Vegetable Specialist

8:30 AM Registration

9:00 W. E. Waters, Welcome and Introduction

9:10 J. M. Davidson, Overview of Future IFAS Programs

9:25 D. J. Schuster, Biology and Control of the Sweetpotato Whitefly

9:45 J. P. Gilreath, Vegetable Herbicide Research Update

10:05 Break

10:30 Tour 1 (Choice of Tour a, b, or c)

12:00 PM Lunch

12:45 Tour 2 (Choice of Tour a, b, or c)

2:15 Tour 3 (Choice of Tour a, b, or c)

3:45 Adjourn

3:45-5:00 Individual talks with faculty.
Three tours will be available:
(a) vegetable crop improvement
(b) vegetable crop protection
(c) vegetable crop production

Tourguides:
Dr. P. R. Gilreath, Manatee County Extension
Dr. S. S. Woltz, Plant Physiologist, GCREC Bradenton
Dr. J. F. Price, Assoc. Entomologist, GCREC Bradenton
Mr. J. W. Prevatt, Extension Economist, GCREC Bradenton

(Maynard, Vegetarian, 89-03)

C. Vegetables and Health

Florida is a major producer of fresh vegetables in the U.S. Because of postharvest technology and transportation systems, garden-fresh vegetables are available to consumers in the U.S. and Canada throughout the year. Furthermore, these fresh vegetables play an important role in human nutrition.

The National Academy of Sciences recommends Americans increase consumption of fruits and vegetables. A report issued March 1 by the academy’s National Research Council recommends Americans reduce their risk of heart disease, cancer, and other chronic illnesses by:
* eating five or more servings a day of a combination of vegetables and fruits, especially citrus and green and yellow vegetables;
* increasing starch and complex carbohydrate consumption to six or more servings per day to bring carbohydrates to more than 55 percent of total calories;
* reducing total fat consumption to 30 percent or less of calories, saturated fatty acids to less than 10 percent of calories, and cholesterol to less than 300 milligrams daily; and
* consuming only moderate amounts of protein, not exceeding 1.6 grams per kilogram of body weight.

The National Academy’s report confirmed the recommendations of the nation’s leading health authorities, including the U.S. Surgeon General, the National Cancer Institute, and the American Cancer Society. All of the organizations have recommended increased consumption of fresh fruits and vegetables as part of a balanced diet to reduce risk of chronic disease.

However, during the past few weeks produce safety has been on the firing line. The National Resources Defense Council (NRDC), an environmental advocacy group which is trying to relate pesticide hazards to the foods people eat in order to advance an agenda for environmental policy reform, released a report "Intolerable Risk: Pesticides in our Children’s Food". In order to get maximum public exposure for its report, the NRDC decided to offer the report exclusively to CBS "60 Minutes", which aired Sunday night, February 26. The NRDC study is a compilation of old data, some of it going back several years, that has been pulled together in bits and pieces to support the group’s ends. NRDC has
no expertise in the field of diet and health. The Center for Produce Quality contends this advocacy group is trying to use free airtime to promote a toll-free number which will sell books and membership in their group.

The national furor created by the NRDC report is based on the contention that -- "our nation's children are being harmed by the very fruits and vegetables we tell them will make them grow up healthy and strong"; -- "preschoolers are being exposed to hazardous levels of pesticides in fruits and vegetables"; -- "fundamental reforms in federal regulation are necessary if preschoolers are to be adequately protected from pesticides in food". Although "pesticides" are mentioned, the main emphasis was on daminozide (Alar) in apples, apple sauce, and apple juice. Only about 5% of the apples produced are exposed to Alar. The EPA announced on Feb. 1 that within 90 days it will begin proceedings to cancel Alar's registration. However, a tolerance of 20 ppm will remain for Alar residues on apples until July 31, 1990. The EPA believes this very low level is safe to consumers. Noteworthy is the fact that no specific mention was made concerning pesticides and vegetables.

In establishing pesticide tolerances, EPA contends that it takes special pains to address issues related to infants and children. The Agency says: "... in animal studies used for human risk assessment purposes, chemicals are administered to test animals beginning with young animals and continuing through adulthood (mimicking human exposure that begins in childhood and continues over a lifetime). The body dose received by the young animals may be double that of the adult animals, due to changes in their consumption patterns". ...."In setting reference doses, EPA generally uses a 10-fold safety factor to compensate for the uncertainty inherent in the process of extrapolating human dietary risk projections from animal data and, in addition, another 10-fold factor to compensate for the possibility of differing sensitivities in individuals or subgroups such as children among the general population."

Everyone is concerned about safety in the foods we eat. The produce industry, from farmer to supermarket manager, prides itself on its responsiveness to consumer needs and concerns, but does not believe that genuine consumer interests and the claims of consumer advocacy groups are always one in the same. It pays to know the facts, eat sensibly, and don't be misguided by innuendo or false claims.

(Gull, Vegetarian 89-03)

IV. VEGETABLE GARDENING

A. Agrisoil - Compost From Municipal Solid Waste.

Recently, a group of us from IFAS attended a seminar on campus to hear Mr. John Novell of Agripost, Inc. discuss his company's plan to turn solid municipal garbage and roadside waste into a composted material called "Agrisoil". Since the compost may have potential use in Florida's agriculture, including vegetables, I am passing on to Extension Agents a summary of the proposed operation and its product.

The trash collecting and composting facility (plant) is currently under construction in Northern Dade County near Carol City. A somewhat similar facility is already operating in Sumter County. Agripost is scheduled to open in
early 1990. It has a contract with Dade County to process a quarter of a million tons of garbage annually.

The waste taken into the plant consists of solid waste that garbage trucks ordinarily pick up at curb side. The county is responsible for removing toxic and hazardous waste, such as car batteries. The rest, including such things as glass, cans, plastic, tires, metal objects, limbs, leaves, paper, leather, wood, ceramics, concrete blocks, small appliances, and of course kitchen scraps, goes into the making of the compost.

As described to us, the process goes something like this. As garbage trucks enter the plant, their contents are weighed and recorded. After the bulky materials and toxic wastes are sorted out, the rest goes through two hammermill grinders. The first grinds the scrap to a coarse size, then the second grinds that to a finer size most suitable for composting.

After grinding, the waste is sprayed with a bacterial inoculant to hasten the composting.

After inoculation, the waste is windrowed indoors on a concrete floor. The composting procedure, said to be aerobic, involves proper control of the temperature and moisture content through turning and wetting. After about 21 days of composting, the finished product is ground up a third time, screened, and bagged.

The end product, which we examined, resembled coffee grounds in size and color. Agripost has had samples of Agrisoil analyzed. Mr. Nowell says it varies with each sample, but in general they found it to have a pH of 8.0, a nutrient value of around 1-1-1, plus micronutrients, a moisture content of about 15 percent, and a weight of around 65 pounds per cubic foot.

Agripost hopes the product Agrisoil will be utilized in agriculture including Florida's horticulture industry. They feel it is both a fertilizer and soil amendment useful on lawns and golf greens, in nurseries, and in growing fruits and vegetables.

Agripost welcomes research and demonstrations by IFAS and industry representatives. Since there is a lot that needs to be learned about Agrisoil before we in IFAS can make reliable recommendations on its use and value, such studies appear beneficial.

Agripost is anxious to discuss any proposals one might have for tests with the product. However, IFAS personnel are requested to coordinate proposed studies with Dr. Wayne Smith of the IFAS Energy office for assistance and to avoid duplication or unnecessary redundancy.

Whatever the value of Agrisoil and other similar products turns out to be, it certainly appears to provide our society with at least one practical solution to the utilization of staggering amounts of municipal wastes accumulating in our state's landfills.

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(Stephens, Vegetarian 89-03)
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