New Soil Testing Method

For the first time, soils from most every state in the nation have been tested for nutrient needs by a new testing method determining soil requirements directly for each element. Such developments at Pennsylvania State University were described November 2 during national meeting of soil and crop scientists in Miami Beach, Florida.

If future experiments prove successful, the new soil testing method could replace current soil testing procedures which use inventories of some extractable nutrient elements related to soil conditions. The new procedure was described by Dr. Dale E. Baker, professor of soil chemistry at Penn State, who used 90 soil samples from throughout the U. S. in his experiments.

He addressed annual meetings of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America.

The new soil test utilizes a chemical solution which, when perfected, will contain the minimum amounts and balance among elements required by plans. Removal of ions from the solution by soil will indicate the need for fertilizers at a given time, Dr. Baker explained. The amount of each ion removed from the solution by the soil will show directly the requirements for a particular nutrient.

Another first was achieved, Dr. Baker said, when Penn State experiments found that results from solution cultures can be related to soil culture.

The new approach to soil testing should enable the farmer to do a better job of maintaining the minimum amounts of each essential element needed for maximum crop production with only minimum enrichment of streams and ground water, he affirmed. Elements being analyzed include nitrogen, phosphorus, potassium, calcium, magnesium, manganese, iron, copper, zinc, and sulfur.

The new procedure will be helpful in using waste products as fertilizers. Soils, water, and crops must be monitored constantly to insure that the quality of each does not decrease. If the new method proves superior to present soil analysis methods, it may be used routinely within a few years. Dr. Baker predicted. Currently, it is most valuable in helping to explain the lack of agreement among existing methods.

The chemical solution, as used, must be perfected to the point where it will always contain minimum concentrations of the essential nutrient ions found in soil and needed for maximum crop production. Consideration must be given to differing tendencies of various ions to be absorbed or held onto by soil particles. Once this procedure is perfected, the new approach will be ready for calibration.

The new method of analyzing soils explains some deviations in other techniques, Dr. Baker pointed out. This occurs since the testing method includes more factors important to plant nutrition than existing tests. The experimental procedure combines various factors, including some ignored by existing testing methods.

Finding by Dr. Baker and associates have also revealed that accurate magnesium recommendation for crop production and animal health can not be based on routine experiments relating crop response to magnesium treatments or soil test levels. Responses of crops to changes in magnesium levels depend upon many soil and crop factors, all of which must be evaluated for every experiment, the Penn State scientist affirmed.

Swine Tattoos Said Workable

Swine can be indentified from farm through slaughter by means of a slap-tattoo identification system at a cost of less than two cents per head, the U.S. Department of Agriculture (USDA) reports.

Officials of USDA's Animal and Plant Health Inspection Service (APHIS) said that the cost of recently completed field trials varied up to five cents per head, depending largely on the wages paid the employee doing the tattooing. Those wages ranged from $1.85 to $6.72 an hour.

Of some 150 lots tattooed, APHIS officials were able to trace all but one lot back to the herds of origin. This one untraced lot resulted from a tattoo being misread at slaughter.

A total of 52,238 hogs were tattooed in the field trials, which were conducted at four terminal livestock markets--East St. Louis, Ill., Kansas City, Mo., St. Paul, Minn., and Sioux Falls, S. Dak.

The tattoo instrument used contained six digits—three letters identifying the market and three numbers identifying the lot or consignment. The instrument was applied to an ink pad and then slapped on the hog's shoulder, either when it was in pens or as it moved through chutes. The trials showed that the tattoo remained clearly legible throughout the scalding and dehairing processes.

The system required that tattoo identification numbers be entered on the dock ticket, scale ticket, invoice or other document retained by the marketing agency. The number was recorded again as the carcass went into the cooler. If inspection by Federal or State inspectors turned up tuberculosis lesions, or if blood samples tested positive for brucellosis, the diseased hog was traced quickly to the farm of origin by checking the recorded tattoo number.

APHIS officials say that determining herds of origin of diseased hogs is important if such diseases as tuberculosis, brucellosis, and trichinosis are to be eradicated. The rapid movement of animals through commercial marketing channels makes it essential to locate and eradicate sources of infection as rapidly as possible.

Broiler Chicks Report

Placement of broiler chicks last week were up sharply from a year ago but down from a week earlier both in Pennsylvania and throughout the 22 leading broiler producing states, according to the Pennsylvania Crop Reporting Service.

In the Commonwealth, placements sagged to 1,073,000 but this was 16 percent better than a year ago, despite a drop of nine percent from the preceding week. The U.S. totals show 53,809,000 broiler placements in the same period, five percent less than a week earlier but up 10 percent from the same week in 1971.

The setting of eggs for broiler-type hatch is off in Pennsylvania in all three indicators. 1,531,000 eggs is eight percent behind the preceding week, 21 percent off the same report period last year and the current three-week average trails 1971 by 10 percent.

The average weight of broilers-fryers slaughtered in Pennsylvania during the most recent week was 4.2 pounds.

New USDA Regulations Protect Plant Breeders

The U. S. Department of Agriculture announced this week that it is adopting regulations and rules of practice implementing the Plant Variety Protection Act, effective Nov. 27.

USDA's Agricultural Marketing Service said the purpose of the Act is to encourage the development of novel varieties of plants which reproduce through seeds, by providing exclusive rights of protection to those who breed, develop, and discover these novel varieties To date, more than 250 applications for certificates of protection for 55 different species have been filed with USDA.

The regulations and rules of practice were proposed in the April 18 Federal Register. Interested persons had 60 days to submit comments.

The regulations and rules of practice cover such areas as applying for a certificate of protection, marking and labeling protected seed, fees and charges, and appeals from decisions of the Plant Variety Protection Office, established under the Act.

The regulations also set time limits for applicants who file for certificates of protection in other countries to file in this country. A maximum of four years is permitted from the time the application is first submitted for approval in a foreign country until the time it is filed in the U. S

The final regulations and rules of practice will be published in the Oct. 28 Federal Register. Copies of the regulations can be obtained from the Plant Variety Protection Office, Grain Division, Agricultural Marketing Service, U. S Department of Agriculture, 6525 Belcrest Road, Hyattsville, Md. 20782

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