Report tells of Md. ag research

COLLEGE PARK, Md. -"Agricultural Research: An Investment in Maryland's Future" is the title of the latest annual report from the Maryland Agricultural Experiment Station, headquartered at the University of Maryland in College Park. The report describes the work of the station in areas of environmental quality, pest management, new crop anımal development,

egg production.

Scientists at the station are attacking problems facing agriculture in the future in a number of ways, according to the 1977 annual report.

As part of protecting and improving water quality, scientists are identifying and assessing problems caused by specific categories of pollutants. The researchers

Nitrogen on no-till corn causes problem

Farmers planting no-tillage corn should be aware of potential problems in using nitrogen fertilizer, a research agronomist at Penn State declared recently.

"No-tillage corn fields given high rates of ammonium sulfate or ammonium phosphate will most likely need to be limed or plowed every other year to avoid soil surfaces so acid that herbicides won't work," stated Dr. Richard H. Fox, crop scientist dealing with soil fertility. "The fact 1s," he affirmed, "weeds must be controlled chemically in notill corn fields."

And he pointed out that significant amounts of nitrogen can be lost as a gas when urea-containing fer-tilizers are used. That's because the fertilizer is not incorporated into the soil in no-till corn management, he said.

In addition, Dr. Fox recommended that ammonium-containing or ammonium-yielding fertilizers should not be spread on fields where lime has not been worked into the soil. He

UNIVERSITY PARK - explained that lime may cause a large fraction of the nitrogen to be lost as ammonia gas.

> "Under the above circumstances, the best nitrogen fertilization for notillage corn is to use ammonium nitrate and plow in lime when necessary, or to 'knife-in' anhydrous ammonia," he stated.

> In three years of no-till experiments at Penn State, Dr. Fox and associates found that 180 pounds of nitrogen per year as ammonium sulfate reduced the average pH of the surface inch of soil to 5.1, almost two pH units below the soil which received no nitrogen.

At this low pH, herbicides such as atrazine and simazine are ineffective and aluminum and managnese may approach toxic levels. Such toxicity can reduce stands and yields. The pH of the surface inch in some plots treated with the high rate of ammonium sulfate was 4.8. Taking a normal sample to a depth of six inches may miss the problems of soil surface acidity, he cautioned.

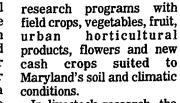
nutrition, and poultry and are looking at several agricultural practices to see what effects they have on sedument, soil nutrients and pesticide problems under differing soil and water conditions. Further data from the experiments will be used to evaluate the effects of management practices on reduction of pollutants.

Another environmental study under way is establishing guidelines for the safe use of sewage sludge on agricultural lands. Methods have been developed to monitor heavy metals in sewage sludges, soils, and plants. This enables researchers to determine the influence that soil properties and temperature have on the availability of heavy metals plants. Once safe to guidelines for sewage sludge use are developed, a big part of the problem of disposing of municipal wastes will be resolved.

Pest management is another new approach to an environmental and economic problem facing farmers and other members of the agricultural community. It allows farmers to increase the available food supply in a more efficient and economical way. The Agricultural Maryland Experiment Station conducts a multi-pronged research effort in this area, involving plant breeding. and use of safe chemical and biological controls along with the study of ecological and cultural practices in reducing pest numbers.

An example of new crop development involves research on strawberries. **Two new Maryland varieties** have been released since 1974, and scientists continue work to improve and breed new strains that will be resistant to diseases and insects.

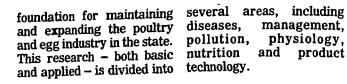
The station also has



In livestock research, the experiment station 1s placing increased emphasis on animal nutrition and the nutritive value of animal food products.

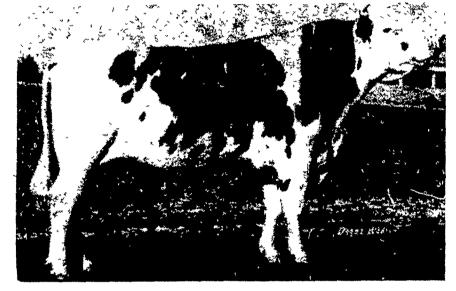
Maximum use of grain byproducts, forages, high-fiber py-products and nonprotein nitrogen sources by dairy and beef cattle and sheep are important goals of the experimental work.

The experiment station also provides a research





FIVE OF OUR ELEVEN + 1.00PDT BULLS AT ABS



29H2628 Sieepy-Hollow KENNEDY GP-81 GM

USDA, 1-78 +\$ 87 +1,225M -.18% +17BF 69% Rpt. HFA, Spring 1978 +1.08PDT 55% Rpt. +331TPI

29H2785 Poverty-Hollow MILESTONE VG-86 GM

USDA, 1-78 +\$111 +1,460M -.17% +27BF 76% Rpt. HFA, Spring 1978 +1.07PDT 75% Rpt. +372TPI

29H2818 Ames Sunny SYMBOL VG-87 TQ

+\$ 77 + 908M -.06% +24BF USDA, 1-78 44% Rpt. HFA, Spring 1978 +1.30PDT 44% Rpt. +295TPI A son of Cochran Sunshine to the released soon.

29H2809 Lawcrest MARKER VG-86 TQ

USDA, 1-78 +\$ 78 +1,118M -.17% +14BF 40% Rpt



Truck Spreading Service Of BAKER'S LIMESTONE AND ROYSTER BONANZA FERTILIZERS, UREA, AND AMMONIUM SULFATE **OR TRACTOR SPREADERS AVAILABLE.**

We handle fertilizer in bulk and bags, retail and wholesale.

- ALSO --

ARCADIAN GOLDEN URAN 30%, Poly-N 10-34-0, or prescription liquid mix fertilizer wholesale or spread. Plus retail Insecticides and Herbicides.

Call Us For All Your Chemical Needs.

MARTIN'S LIQUID SERVICE

c/o JOHN Z. MARTIN RD 1, Box 716, New Holland, PA 17557 Phone. 717-354-5848 HFA, Spring 1978 +1.16PDT 45% Rpt. +319TPI

An Elevation son priced at \$4.00 Direct. Better order your semen now-his price will never stay there!!!

29H2830 Dumbelle Elevation LIFT OFF EX-91 TQ

USDA, 1-78 +\$ 43 + 675M -.13% + 5BF 59% Rpt. HFA, Spring 1978 +1.29PDT 70% Rpt. +252TPI

In the HFA spring Sire Summary ABS has added 11 new Gold Medal sires and now has 11 sires +1.00 or more. We also have over 40 sires available with plus PDT's. We think this proves that AMERICAN BREEDERS SERVICE is NUMBER ONE in the A.I. INDUSTRY.



Landisville, PA Port Murray, NJ Richland, PA Thomasville, PA Whitehouse Station, NJ West Grove, PA

Eric Heinsohn Darvin Yoder Lynn Gardner Paul Herr **James Charles** Jerry Babonis **Robert Kayhart** Robert Greider Paul Martin Ira Bover Robert Colburn Maurice Stump

215-588-4704 717-733-0966 717-656-6509 717-284-4592 717-898-8694 717-423-6451

201-689-2605 215-378-1212 717-866-4228 717-225-3758

201-534-4483

215-869-9187