

Business Newsletter . . .

Large-Scale Urea-Formaldehyde Fertilizer

Urea-formaldehyde solution **in tank car lots** for use in making granular fertilizers is ready from Allied Chemical's Nitrogen Division. The company says that use of this material will make possible production of fertilizers that will **release the nitrogen over an entire season**. Products are said to be nonburning and leach resistant. Nitrogen division says its **N-dure** will require only standard equipment to make mixtures with a wide variety of ratios between water soluble and insoluble nitrogen for lawns, gardens, and specialty crops.

Stengel Process Yields Spherical Form

Commercial Solvents has developed a process which permits production of **ammonium nitrate in uniform spherical form**. The method is particularly adaptable for use with the Stengel process for the manufacture of ammonium nitrate. The new process produces material similar in form to the conventional prills without the need for the tall towers, rotary dryers, and multiple cooler required in conventional prilling plants. The Chemical & Industrial Corp. of Cincinnati (see page 376), which handles licensing of the CSC Stengel process, will also license the new modification. The product is reported to have high density of crystalline nitrate.

Natural Insecticides Pushing

The world's largest **pyrethrum extraction** plant outside the U. S. is being planned in Kenya by African Pyrethrum Development, Inc. Capacity will be 2500 to 3500 tons a year. The only other extracting plant now operating in Africa (2000 tons) is at Nairobi. Producers see the increased control demands of the Miller Amendment helping to at least double demand for pyrethrins, which don't have the residue problems that many synthetics do. . . . Trinidad Ryania Corp. of Upper Montclair, N. J., has been established to promote ryania in the U. S. This product also expects benefits from its FDA residue tolerance exemption.

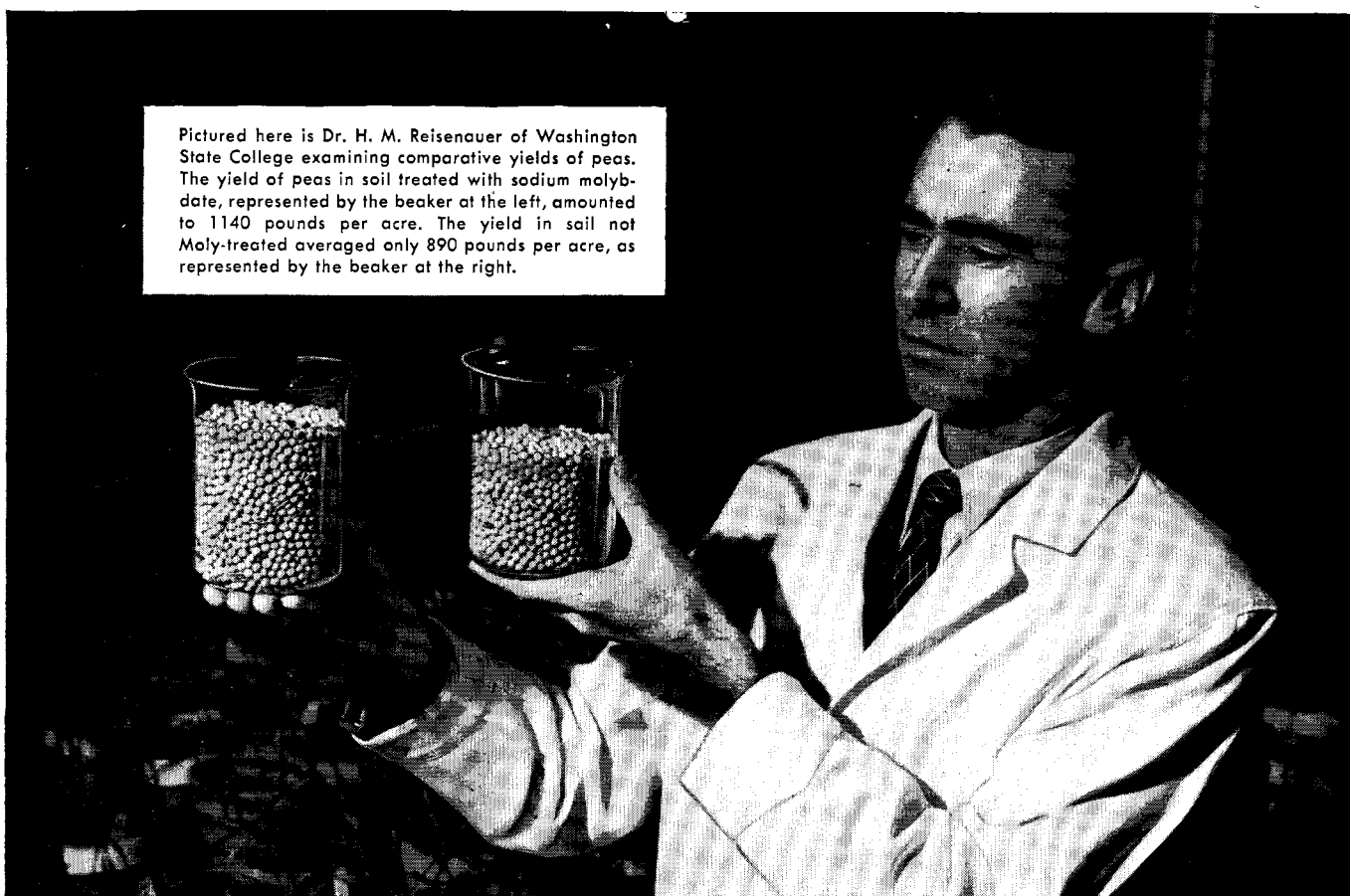
Heavy Insect Losses Reported and Predicted

Boll weevil survival looks very high and some reports warn that the 1956 attack may be the largest in history. . . . Last year's **corn borer** loss has been estimated at more than \$182 million. And in parts of the country they promise to be comparably serious next year. . . . Grasshopper infestations on range lands are expected to touch 20 million acres in 16 states—far more than last year. . . . Gypsy moth in Northeast is expected to be more serious.



- Granular herbicides follow granular insecticides into production with many advantages for growers (p. 293)
- Tissue analysis helps pin down factors that influence crop nutrition (p. 294)
- Most of world's surplus nitrogen will end up in U. S. this year (p. 296)
- Problems and progress in weed control, on an area by area basis, discussed in summaries of papers presented at recent Weed Society symposium (p. 308)

Pictured here is Dr. H. M. Reisenauer of Washington State College examining comparative yields of peas. The yield of peas in soil treated with sodium molybdate, represented by the beaker at the left, amounted to 1140 pounds per acre. The yield in soil not Moly-treated averaged only 890 pounds per acre, as represented by the beaker at the right.



Pea yield increased 28% by use of Moly fertilizer

As a part of molybdenum deficiency tests which have been carried on since 1952, Dr. H. M. Reisenauer is demonstrating the value of Moly in stepping up the size, vigor and yield of peas.

Vigorous plant growth and greatly improved yield in peas have been obtained at the Washington State Experiment station through the addition of trace quantities of Moly. Dr. Reisenauer's experiments have shown that when peas are moly-starved the nitrogen fixation is almost negligible, and the plants are small and poorly developed. Moly deficiency results in fewer pods—lower yield.

By adding sodium molybdate to the soil, Dr. Reisenauer obtained vigorous plant growth and greatly improved yield. The pictures reproduced above tell the story.

Moly deficiency has been definitely proved in many areas in the United States

Field observations and tests show that a deficiency of available Moly exists in American soils in many locations. The study of whiptail in cauliflower, for example, has led to the discovery of Moly deficiency in New York, New Jersey, Pennsylvania, Delaware, Maryland, West

Virginia and Ohio. Intensive work on yellow spot brought to light a Moly deficiency in the citrus area of Florida. And the incidence of yellow foliage and low protein content of alfalfa has been successfully corrected by the use of Moly on molybdenum deficient soils in South Carolina, Idaho, Washington, and New Jersey.

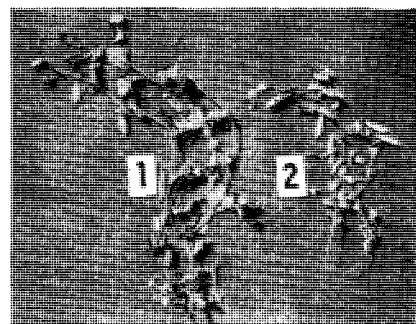
All crops need Moly

Many other scientific tests, conducted in the United States and abroad, show conclusively that Moly in available trace quantities is needed by all crops. These findings apply to such widely varying crops as tobacco, tomatoes, celery, broccoli, sweet potatoes, sugar beets and clover.

Practical help is now available to county agents for the conduct of Moly tests

In many parts of this country, not previously reported upon, county agents are finding indications of Moly deficiency in soils. We will be glad to supply test sam-

ples of sodium molybdate to county agents for test purposes. Write to Climax Molybdenum Company, Dept. 44, 500 Fifth Avenue, New York 36, N. Y., for our new folder: "Testing for Molybdenum Deficiency."



Shown here are pea plants grown in Moly-treated soil (Plant No. 1) and plants from untreated soil.

MOLY CAN BE ADDED TO ANY FERTILIZER BLEND

In recommending fertilizer blends you can always specify that certain quantities of sodium molybdate be included as an additive.

CLIMAX MOLYBDENUM

Research Newsletter . . .

Biological Control Measures

Californians continue **progress with predators**. Studies of recent years show that cyclamen mite can be controlled by two other mites. Use of control chemicals must be careful, but aramite for red spider mites and TEPP, before May, for aphids can be used, they say. . . In Florida, too, they are doing it: *Chilomenes*, the second **Indian lady beetle** imported during recent months, is being released against cotton aphids. The other, *Brumus*, is an enemy of aphids, mites, and mealy bugs.

New Antibiotics against Plant Disease

Five new effective antibiotics have been reported by USDA for use in plant disease control. Although only experimental to date they show promise: **Anisomycin** (protected beans from rust and downy mildew); **mycostatin** (protected beans from anthracnose); **griseofulvin** (against rust); **filipin** (against downy mildew and partially against anthracnose); and **oligomycin** (effective against all of the above diseases).

More Control Techniques

USDA researchers report that ginning cotton kills 90% or more of the **pink bollworms** in the seed. Delinting kills practically all remaining insect larvae. . . The massive fumigation campaign against the **Khapra beetle** in California got good results. Officials say it has been eradicated in 60 million of the 90 million cubic feet infested. . . Prospects for chemical control of **wheat smut** are looking better—although still a tough problem—as a result of work with hexachlorobenzene seed treatment, particularly at Washington State station.

Better Mite Control Needed

Until better miticides are found, biological control may be the most dependable. USDA reports that mites developing resistance to chemical control agents can pass the **resistance on to their young**. While breeding studies are yielding knowledge that may lead to more successful control, present status suggests a very attractive goal in control chemicals that defy developed resistance



- TVA's continuous ammoniator used along with other equipment to produce satisfactory granular mixed fertilizer (p. 318)
- Phosphate rock can be treated directly with sulfuric acid or phosphoric acid to make dicalcium phosphate, a product with almost as much available P_2O_5 as triple super (p. 331)
- Some substituted 1,1-diphenylmethylcarbinols found effective acaricides (p. 338)
- Hydroquinone and its derivatives prevent deterioration of pyrethrum and allethrin formulations (p. 340)