Business Newsletter . . .

Commercial Status for New Chemicals

Shell Chemical has secured USDA label approval for its new Phosdrin insecticide, following establishment of tolerances by FDA. **Phosdrin's short residual life** permits use relatively near harvest date on many crops. Shell expects heavy demand, has already put on stream a new plant to produce material at Denver . . . **Dow ET-57,** widely heralded **systemic for control of cattle grubs,** is entering commercial markets in limited amounts this fall (see page 902) . . . **Another Dow product, Dowpon,** has gained federal registration, and can now be recommended for **control of grass** around apple and pear trees, and in asparagus beds . . . **Commercial Solvents has obtained a patent on zinc bacitracin,** an unusually stable antibiotic for the **animal feeds industry.** CSC will market the product in six potencies ranging from 5 to 25 grams per pound, under the company's established trade name Baciferm . . . **Chemagro Corp.** has obtained USDA registration for use of its new **foliage fungicide Dyrene on potatoes and tomatoes.** Compound is recommended for control of early and late blights on both crops, anthracnose and other fungus diseases on tomatoes. Official FDA tolerances are 10 p.p.m. for tomatoes, 1 p.p.m. for potatoes.

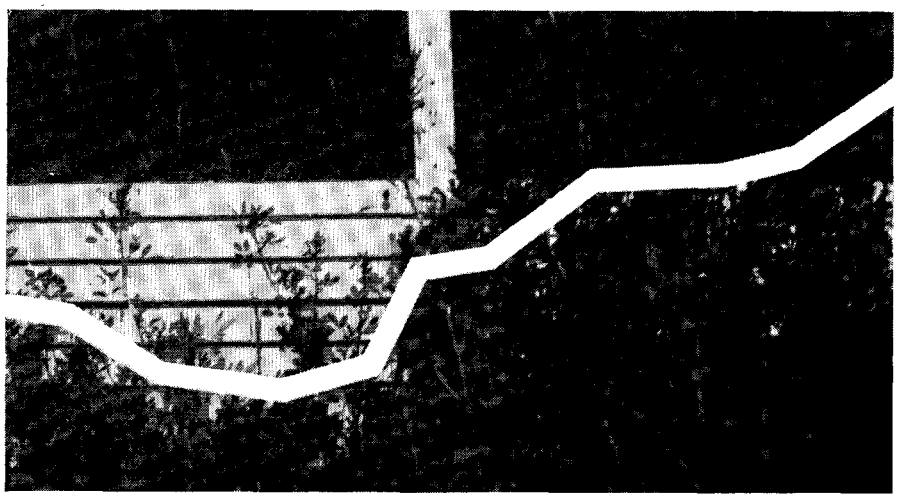
Potash Companies Rejoin NPFI

Five of the six potash companies which resigned from NPFI last summer (AG AND FOOD, August, page 567) have rescinded their action; the sixth is expected to do so soon. Companies retaining membership are: **American, Duval, National, Potash Co. of America, and Southwest. U. S. Potash was expected to follow suit,** but as of Nov. 29 had not yet secured confirmation from its corporate parent, U. S. Borax & Chemical. No announcement was made concerning **adjustments in NPFI's dues structure,** subject of the disagreement that led to the potash producers' withdrawal last summer.

More Time for Study of Pesticide Labeling Change

USDA has extended until Dec. 31 its deadline for receipt of written arguments or data on the **proposed amendment to regulations for labeling commercial pesticides.** Proposed on Sept. 11, the amendment would prohibit the use on pesticide labels of any statement that would directly or indirectly imply recommendation or endorsement of the products or their ingredients by any federal agency. **Written comments on the proposal** may be sent to Plant Pest Control Division, Agricultural Research Service, USDA, Washington 25, D. C.

- Technical service is the prime channel for getting information about chemicals for agriculture to the user, but gimmicks and premiums are also being used effectively in sales promotion (**page 891**)
- Modern technology in fertilizer production raises again the question of quality control (**pages 893 and 909**)
- Surplus remains the problem of U. S. agriculture—experts believe the only answer for the present is higher exports (**page 894**)
- Hydrogen need of oil refiners will rise sharply in the next few years, but this does not mean less hydrogen for ammonia plants (**page 895**)



In a Washington State test, sweet clover responds to moly fertilization with yield of 1.5 tons of hay per acre (area at right). Control area (left) yielded only 0.7 ton per acre.

(Photo courtesy State College of Washington).

Average yield or high production? Moly may make the difference

Moly can give striking increases in yields, even on land farmers thought was "good enough"

During the past few years agronomists and many farmers have witnessed the dramatic upturn of crop yields when small additions of molybdenum were made to moly-starved soils. These results have been widely reported, and today the more obvious symptoms of moly-starvation are quickly recognized by most county agents.

But how about the much larger areas where moly-deficient soils might be described as undernourished rather than starved? Here moly can make the difference between average yields, average quality, average profits and high yields of premium quality crops that mean extra income.

At the present time these areas of potential response to moly treatment are known to include large parts of the eastern U.S. and much of the arable land of the Pacific Northwest. They take in many productive farms whose owners, lacking a standard of comparison, are reasonably satisfied with present yields.

In these areas, tests by experimental stations and growers alike have established that moly applications can boost yields by 12 to 93%. Although such improvements are not perhaps as spectacular as in moly-starved soils, they have already added to the profits of individual farmers. Broad-scale treatment of these undernourished soils can contribute substantially to overall farm production.

How Moly Works

A fact that has emerged from many studies of micronutrients is that moly is essential to nitrogen fixation. Legumes require moly for the fixation of atmospheric nitrogen by the bacteria in their root nodules. All crops need it to reduce nitrates to nitrogen—the first step in protein synthesis.

When there isn't enough available moly in the soil to satisfy plant requirements, crops literally starve to death (as in the case of serious, visible deficiencies), or achieve only a fraction of their potential growth (as in the case of many fields with "normal" productivity).

On the other hand, small amounts of moly have given both substantial increases in crop yields and marked improvement in quality to many farmers who were once content with fair to average production. In many cases alfalfa has a higher protein content when "normal" fields are treated with moly. Cauliflower runs to large size, more succulent flavor.

Consider the effect of moly on a typical few of the 30-odd crops for which responses have been reported:

Alfalfa—In field tests in New Jersey, Dr. Harold J. Evans of Rutgers University obtained an average increase in yield of 13%, marked improvement in protein content. In field tests in Spokane County, Washington, Dr. H. M. Reisenauer of the State College of Washington found that treating molybdenum deficient fields with moly increased yields an average of 40%.

Melons—A Virginia grower reports that with moly treatment he gets an average of 7 runners per vine with each runner bearing a large melon. Untreated plants bear fewer runners, much smaller fruit.

Peas—In eastern Washington and northern Idaho, where both dry edible and seed peas are a major crop, commercial use of moly is producing more peas per pod, more pods per vine. And vines are longer, easier to harvest. Yield increases in commercial tests have averaged 63%. Many farmers realize a return of $10 on each dollar invested in moly.

Cauliflower and Lettuce—Growers on Long Island and in upstate New York, in Rhode Island and mid-New Jersey report more vigorous cauliflower plants with heads of better quality. Color and leaf structure of lettuce improved. Yields were consistently higher than for untreated fields.

Testing is Easy

Although crops vary in their moly requirements and responses vary with soils, there is one sure way for a grower to find out whether he can increase the yield and quality of a particular crop on a particular soil: run a field test. It's easy to do.

A stock solution for such tests is made by dissolving one ounce of sodium molybdate in one gallon of water. For vegetable crops, select and mark one or more rows through the center of the field. Mix three cups of the stock solution with one gallon of water and apply to the test rows, using about a quart to a 250-foot row. Compare the test rows with untreated rows every other day. Check yields and quality against untreated areas at harvest.

For legumes, lay out a test plot 10 yards square in a location that will make it easy to compare with untreated soil. Follow the usual fertilizer plan, but do not use nitrogen on either the test plot or the control areas. Spray the test plot with three cups of stock moly solution to a gallon of water. This may be done at the time of seeding, or to an established stand. Because increases of 25% or less are difficult to evaluate visually, clipping tests should be made.

For detailed information on the handling of moly test plots write Climax Molybdenum Company, Dep't. 44, 500 Fifth Avenue, New York 36, N. Y.

Research Newsletter . . .

Basic Research in Agriculture

Two basic research laboratories are now operating under USDA's new policy of **setting up special pioneering groups** "to explore the scientific unknown beyond present limits of knowledge." They are: the **Pioneering Laboratory for Mineral Nutrition** (headed by Sterling B. Hendricks) and the **Pioneering Laboratory for Plant Physiology** (headed by Henry A. Borthwick). Soon to come: **Pioneering Laboratories for research on blood antigens, insect pathology, and insect physiology.** All are at Beltsville. . . . According to a survey by the National Science Foundation, agricultural experiment stations spent some $17 million on basic research in 1953–54 out of a total research budget of $74 million. States contributed $45 million to the total, the federal government $13.5 million; other sources, such as sales and royalties, accounted for $16 million.

Army and Four Companies to Build Food Radiation Center

The Army Quartermaster Corps and four companies in the food and related industries will begin construction of the **Ionizing Radiation Center** at Lathrop, Calif., in 1958. Their purpose: to develop **a method for preserving a wide variety of foodstuffs by subjecting them to nuclear emanations.** Equipment: a food processing plant, an electron accelerator, and a gamma ray source. The four companies—**Armour, Continental Can, Food Machinery, and General Foods**—have formed Irradiated Foods, Inc., to plan production and operate the center. Each firm is to assign members of its own technical staff to the center.

Gibberellins Still in the Headlines

Gibberellins may make it **possible to raise the seed of bolting-resistant varieties of sugar beets** in this country, say USDA scientists at Fort Collins, Colo. Gibberellic acid is substituted for part of the light and temperature required to produce viable seed. Method has not yet been tested under field conditions . . . The Association of American Pesticide Control Officials is cooperating with the Association of American Fertilizer Control Officials in its gibberellin study (AG AND FOOD, November, page 793). Each has three members on the joint committee, which has been instructed to attempt to reach an agreement as to **whether laws controlling gibberellin preparations should logically be administered by fertilizer control officials or pesticide control officials.** A. B. Heagy of Maryland is chairman of the committee.

- DDT labeled with carbon-14 shows that Schechter-Haller method fails to account for some metabolites of DDT found in feces and bile of rats fed DDT (**page 919**)
- That some control over selenium poisoning of livestock is obtained by arsenite compounds is explained by a blocking action in blood stream (**page 928**). Control of selenium uptake in plants by use of fertilizers offers some promise (**page 931**)
- Spectrophotometer can give estimate of amount of 6-methoxybenzoxazolinone present in corn plant tissues. This compound gives many plants a natural resistance to fungi, corn borer, and other pests (**page 933**)
- Growth response and phosphorus uptake about the same for plants grown in calcareous soils with phosphate fertilizers of the nitric phosphate, ammoniated superphosphate, and ammonium phosphate-sulfate types (**page 935**)

Eastman makes these basic chemicals for...

If you produce herbicides and pesticides, it will pay you to look to Eastman as the source of your basic chemicals. The uniform quality of the Eastman chemicals listed below helps you maintain your standards and assure uniformity in your final product.

...HERBICIDES AND PESTICIDES

acetic acid
propionic acid
n-butyric acid
isobutyric acid
2-ethyl hexoic acid
ethyl alcohol
isobutyl alcohol
2-ethyl isohexyl alcohol
2-ethyl hexyl alcohol
isobutyronitrile
manganese sulphate (Tecmangam)
triethyl phosphate

...ANIMAL FEEDS

Tenox BHT—Agricultural Grade: A form of BHT specially prepared for feed use—free-flowing, non-dusting, and granulated in a particle size comparable to that of other feed components. Protects vitamin content of feeds, improves pigmentation and protects chicks against deficiency diseases such as encephalomalacia.

Tecmangam: Contains 75-78% manganese sulphate. Completely soluble and readily assimilated, Tecmangam is an ideal source of manganese for feeds. In manganese-deficient areas, Tecmangam can be added to fertilizer to supply this essential element.

For information, samples or specifications on any of the Eastman basic chemicals for use in herbicide, pesticide and feed production, write to any of the sales offices listed below.

Eastman
CHEMICAL PRODUCTS, INC.
KINGSPORT, TENNESSEE
subsidiary of Eastman Kodak Company

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York City; Framingham, Mass.; Cincinnati; Cleveland; Chicago; Houston; St. Louis.
West Coast: Wilson Meyer Co., San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.