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NEW AGRICULTURAL CHEMICAL FACILITIES

Shell dedicated its 142-acre agricultural research farm and laboratory at Modesto, Calif., on April 17. Expanded to include facilities formerly at Denver, the Modesto lab is now three times as large as original unit opened there in 1946. With 50,000 square feet of floor space in 10 lab buildings, plus greenhouses and lathhouses, a four-room insectary for 2 million insects, and 142 acres, plant pathologists and physiologists, entomologists, nematologists, and chemists will be involved in a full spectrum of research—from pure studies on plant growth and behavior to residue and formulation work on pesticides.

Stauffer's first commercial plant for Trithion insecticide-miticide, at Henderson, Nev., is now complete. In the last four years, Trithion has outgrown two successively larger pilot plants and a semi-works at Richmond, Calif. Stauffer will no longer have to allocate it.

FOREIGN FERTILIZER EXPANSION

Scottish Agricultural Industries, Ltd., has put into operation a new \$8-million plant for concentrated complete fertilizer at Leith, Scotland. A sulfur-burning Monsanto contact plant provides the sulfuric acid. The phosphoric acid plant, designed by Engineering and Industrial Corp. S. A. of Luxembourg, produces 32% P₂O₅ acid, and an 18-cell Prayon filter removes gypsum. Dorr-Oliver designed the compounding and granulating facility. Production: 150,000 tons of complete fertilizer and industrial-grade ammonium phosphate.

Albatros Superphosphate Factories will build a nitraphosphate plant at Vlaardingen, Holland. D. M. Weatherly will engineer the plant, which is to use a TVA continuous rotary ammoniator—first plant ever to use it for nitraphosphate, it is said. Product will contain 50% of its phosphate in water-soluble form, rest citrate-soluble.

WATER TRANSPORTATION LOOKING BETTER

International Minerals claims the largest single-owner shipment of plant food ever to come up the Mississippi. It shipped 10,000 tons of triple super and rock phosphate worth about \$500,000 on an eight-barge tow from Baton Rouge in mid-March. IMC salesmen will distribute fertilizer materials from the floating warehouse as it moves up the river. Phosphates came across the Gulf of Mexico from Florida.

Also getting ready to take advantage of water transportation is Allied's Nitrogen Division, now installing two large-volume storage terminals for Nitrana and Urana nitrogen solutions in Florida, one at Jacksonville, one at Sanford. They will be serviced by barges traveling the inland waterway from Hopewell, Va.

MOREA FACILITIES GOING UP

U. S. Industrial Chemicals expects to have a Morea premix plant operating in Anaheim, Calif., by June 1. It will be on the property of the company's large alcohol plant in Anaheim. From this facility, USI will supply mixer-distributors of the liquid livestock feed in the Pacific Coast area.

A mixer-distributor plant for Morea is now being operated in Puerto Rico at Mercedita by Morea Liquid Feeds Corp. Feed Service

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Corp., which owns U.S. patents on Morea and also has patents in Europe, Africa, South America, and the South Pacific, says supplement will soon be made and sold in Italy, Denmark, and other European countries.

MONSANTO TO PRESS COMPLAINT AGAINST CENTRAL FARMERS

Federal District Court in Idaho has ruled that a former Monsanto employee, Charles M. Miller, unlawfully disclosed Monsanto trade secrets. An injunction has been granted against Miller and F. C. Torkelson Co., designer and general contractor for Central Farmers Fertilizer Co.'s phosphate fertilizer plant at Georgetown, Idaho. Monsanto says it will now go ahead with complaint it has filed against Central Farmers.

REORGANIZATIONS

American Cyanamid has merged its former phosphates and nitrogen division with its former farm and home division to form a single agricultural division. Frank S. Washburn is general manager of new division, and C. D. Siverd is assistant general manager. Before merger, Washburn was general manager of phosphates and nitrogen division and Siverd general manager of farm and home division. Latter was organized in January 1957 to market packaged insecticides and other agricultural chemicals, Acronize process, veterinary products, and feed supplements.

Allied Chemical's Nitrogen Division has reorganized its development department. New organization is expected to expedite research projects and to promote new areas of research. Under new set-up, E. D. Crittenden, who was director of research, will be a consultant to division vice president F. O. Agel. L. J. Beckham, C. K. Lawrence, and E. W. Bowen become associate directors of research, with responsibility for review and evaluation of department's program. Other new assignments: L. E. Dewling, process engineering director; R. M. Jones, product development director; H. L. Heckel, laboratories director; G. J. Coli, operations engineering director; and Carl Sampson, construction manager.

Pennsalt has decided manufacture and sale of fertilizer is not a logical field for the company. It will sell I. P. Thomas Division (which it bought in late 1954 and has since expanded) to Dixon Chemical Industries, Inc. Financial details were not disclosed.

SHEA, HOOKER TO CONSOLIDATE

Shea Chemical and Hooker Electrochemical will consolidate, if stockholders OK plans at May 28 meetings. Hooker will be the continuing company and will change its name to Hooker Chemical. Financial details involve issuing of 800,576 shares of Hooker common in exchange for 1,401,010 shares of Shea class A and C common, and 41,200 shares of Hooker common for the 6000 shares of Shea's \$7.00 cumulative preferred. None of Shea's phosphorus products is produced by Hooker.

MARKETING ARRANGEMENTS

Greene Trading, until two months ago the sales agent in the U.S. for African pyrethrum, says it will continue as sub-agent in U.S. for pyrethrum extract from Kenya's only processing plant. The Kenya plant, owned by East African Extract Corp. of Nairobi, has an annual allocation of flowers from the Pyrethrum Board of Kenya and has been producing pyrethrum extract for the last 11 years.

Miller Chemical & Fertilizer will manufacture and sell fungicide 658

under license from Union Carbide. Miller will formulate it as a dust or wettable powder and sell it to vegetable, fruit, and peanut growers through established distribution channels.

PRODUCT DEVELOPMENTS

Shell says its Nemagon soil fumigant can be mixed with starter fertilizer by mixers, so that farmers can plant, fumigate, and fertilize all in one operation.

Union Carbide's Sevin insecticide is being suggested to New York apple growers for trials this summer against several apple insects. Sevin also controls the periodical cicada, say two University of Maryland researchers. They find it gives 100% control of cicadas caged on limbs of trees for six days after treatment and remains highly effective for 10 days.

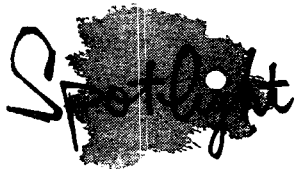
Du Pont is introducing Tryben 200, a killer of bindweed, Canada thistle, trumpet vine, and many other tough broad-leaved perennials. Based on the dimethylamine salt of trichlorobenzoic acid, it contains 2 lb. of acid equivalent per gallon. Both a contact and a residual herbicide, nonselective and somewhat volatile, Tryben presents a potential hazard to certain sensitive crops, and Du Pont warns that label precautions should be followed carefully.

FDA has cleared malathion for direct application to stored grain. Just recently, malathion was cleared for direct use on the bodies of meat-type animals and poultry.

FDA has set a tolerance of 5 p.p.m. for toxaphene on barley, oats, rice, rye, and wheat. This means farmers can use it within a week from harvest of wheat, rye, or oats, and within two weeks from harvest of barley and rice. Hercules says toxaphene is the only chlorinated hydrocarbon recommended for armyworm control which can be used this close to harvest.

American Cyanamid says organic seed protectants that include its systemic insecticide Thimet minimize stand difficulties heretofore attributed to the insecticide in the seed treatment. Trials indicate such stand difficulties may be caused by a soil-borne, seed-decay fungus. Company says major part of cottonseed being treated in California this year will get captan-Thimet treatment.

FDA has set residues for Kelthane, Rohm & Haas' miticide, that permit its use throughout the growing season on many fruit and truck crops.



- Despite inherently dangerous product, pesticides industry has a good safety record (page 335).
- Herbicidal compounds often improve growth and other properties of plants in sublethal amounts, a phenomenon that makes herbicide research even more attractive (page 336).
- Feed supplements lead chemical industry down the path toward more and more basic research on feed bag's contents (page 340).
- New agricultural planes and the speed inherent in aerial application build more and more business (page 342).

IF YOU MAKE



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PESTICIDES



ANIMAL FEEDS



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FOR THESE BASIC



CHEMICALS

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
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Herbicides and Pesticides

acetic acid
propionic acid
n-butyric acid
isobutyric acid
2-ethyl hexoic acid
2-ethyl isohexoic 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.

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

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GLEANINGS FROM THE ACS MEETING

Plant-attacking fungi produce two enzymes in the plant vascular system. These enzymes hydrolyze pectin in the cell walls to the point that some pectin fragments become soluble, enter the vascular stream, meet up with calcium or other ions, and form gels. Gels accumulate and block travel of water and nutrients, causing the familiar tomato wilt. These are conclusions of Mark A. Stahman and John C. Walker of the University of Wisconsin. They postulate that resistance to *Fusarium* may involve ability of resistant varieties to reduce amount of pectin-splitting enzymes produced or that plant may continuously produce something toxic to the fungus.

Dipropylene glycol is the answer to problem of Aramite decomposition when it is formulated into dusts and powders. Only 2% of this solvent has increased stability of Aramite even in hot, dry regions, says Jerome Yaffe, Niagara Chemical.

Adding lime to the soil can reduce contamination of food crops by radioactive fallout, according to Eric B. Fowler, Los Alamos Scientific Laboratory, University of California. Plants grown on soil high in calcium contain less strontium-90 than those grown on low-calcium soil, but some plants, grass for example, show a preference for strontium over calcium.

GIBBERELLIN PROJECT

Research workers in Illinois, North and South Carolina, Mississippi, Minnesota, Manitoba, and Sweden are getting ready for a gibberellin project on soybeans this summer. Gibberellin-treated seed will be used to check out results obtained last summer when gibberellin-treated seeds produced taller plants, an effect that means more efficient combining and higher recovery of harvested beans. Plots in this summer's test will be large enough to permit mechanical harvesting. Saving beans from just one more pod per plant would add up to 2 bushels or more per acre, the researchers calculate.

\$50,000 FOR UREA RESEARCH

Du Pont will spend over \$50,000 this year for university and college research projects on the use of urea in agriculture. Du Pont products involved are Uramite and NuGreen fertilizers and Two-Sixty-Two feed compound for beef and dairy cattle. Sixteen institutions with major agricultural research units that normally conduct extensive programs in turf and ornamentals fertilization and animal feeds will get the money.

Spotlight

- 2,3,6-Trichlorobenzoic acid and 2,3,5,6-tetrachlorobenzoic acid, both growth regulators, are absorbed and translocated downward through treated plants into surrounding soil where roots of untreated plants absorb them and translocate them upwards (page 356).
- Butonate found to be most selectively toxic to houseflies, among several O,O-dialkyl 2,2,2-trichloro-1-acyloxyethyl phosphonates. Initial

site of in vivo hydrolysis appears to be major factor in its selective toxicity (page 360).

- Rat-feeding indicates lysine supplementation of breakfast cereal gave a growth response when the wheat flakes were fed without milk. No significant increases in growth or protein efficiency were noted with milk (page 368).