

many other applications. For example, it might be possible to make sucrose derivatives with toxic functional groups to obtain pesticides.

That petroleum derivatives are used for the water soluble portion of surface active agent molecules is directly attributable to the vast amount of research carried out by the petroleum industry, according to Hass. In this and many other cases sugar might be a better starting material, he suggests.

Sugar producing capacity has outstripped consumption and it would not be difficult to double world production. Sugar cane yields per acre (including bagasse, molasses, etc. as well as sugar) are high—12 tons per year—and crop rotation is not necessary. This means efficient use of the land.

By-products from sugar refining are also important. Molasses was formerly used in great quantity by the fermentation industries, but this use has declined; there is now only one major producer of fermentation industrial alcohol. Loss of this outlet is being made up by the increasing use of molasses in cattle feed. Monosodium glutamate is also being made from molasses.

Sugar is not the only carbohydrate which might serve as a chemical raw material. Starch has already been mentioned, and forest products may become more important in the future. Waste products such as oat hulls and corn cobs now feed the furfural industry.

One serious question to be taken into account when considering moving the base of the organic chemical industry to agricultural products is whether it is safe to count on agricultural sources with world population growing the way it is. Hass's answer to this is that there are large areas of virtually undeveloped land in the world, such as most of the continent of Africa, so this need not be a problem in any foreseeable time.

Government

USDA Has Openings For Chemists in Utilization Research

Expansion of USDA's research on the utilization of Southern farm crops has created a number of job openings for chemists and physicists in such applied and fundamental fields as cotton, vegetable oils, fatty acids, terpenes, and resin acids.

Salary range for these positions is from \$3410 to \$7040. Those interested can obtain application blanks from any Post Office and file them with the Regional Director, Eighth U. S. Civil Service Region, 1114 Commerce St., Dallas 2, Tex.

Industry

Cyanamid Claims Bristol Infringing on Aureomycin Patent

American Cyanamid has announced filing a patent infringement suit in the U. S. District Court for the Northern District of New York against Bristol Laboratories. Cyanamid claims infringement by Bristol of its patent covering chlortetracycline, sold by Cyanamid's Lederle Laboratories Division under its trade name Aureomycin.

Cyanamid's complaint, filed late last month claims that Bristol, which has a plant at Syracuse, is making and selling an antibiotic composition (under the trade name Polycycline) which contains material covered by Cyanamid's patent, and that in making its product Bristol uses processes and methods covered by Cyanamid's patent.

The complaint asks for damages and an injunction against future infringement.

Solvay's Chloromethane Plant Starts Producing at Moundville

Start-up of production of its chloromethane plant at Moundville, W. Va., has been announced by Solvay Process Division, Allied Chemical & Dye Corp.

The new plant, which has been under construction for over a year, will produce methyl chloride, methylene chloride, chloroform and carbon tetrachloride.

Uses for methyl chloride include preparation of greenhouse sprays. Biggest outlet for methylene chloride is as a nonflammable solvent for paint and varnish removers, but it is also used to formulate aerosol propellants.

Chloroform also finds use in production of certain aerosol propellants and in addition is used in manufacture of penicillin as well as other antibiotics. Principal use for carbon tetrachloride today is in manufacture of refrigerants and propellant compounds.

Methyl chloride will be sold in tank car lots, f.o.b. Moundville, W. Va., freight equalized with recognized producing points. Methylene chloride, chloroform and carbon tetrachloride are being offered on a delivered price basis. These products may be obtained in drums or in tank car quantities.

In addition to its four new products, Solvay has been producing chlorine and caustic soda at Moundville since last December, and is now also making by-product muriatic acid and anhydrous hydrogen chloride at that location.

Research

Ohio Orchard Tests with Antibiotics Among Most Conclusive

An error of omission occurred in the story on the use of antibiotics to control orchard disease in the Sept. 1 issue on pages 904 and 906. Two paragraphs and a table were omitted referring to the work at the Ohio Agricultural Experiment Station, which was started in 1952 and is said to be the most conclusive of the work presented so far. The omitted material is presented below.

As a result of very striking and favorable results obtained last year, H. F. Winter and H. C. Young, Ohio Agricultural Experiment Station, planned and conducted extensive experiments during the 1954 season. These consisted of controlled experiments involving the inoculation of the trees as well as the application of one or more formulations of streptomycin in 12 different commercial apple and pear orchards in all sections of Ohio. In the controlled tests, streptomycin, Terramycin, and tetracycline were employed, and five different formulations of streptomycin were also tested.

Results obtained in five of the seven Jonathan apple orchards used in 1954 are summarized in the table (insufficient blight for comparison purposes developed in the other two orchards):

1954 Fireblight Studies in Commercial Jonathan Apple Orchards

(Infections per tree)

Material Used	Orchard No. 1 4-yr. trees	Orchard No. 2 18-yr. trees	Orchard No. 3 15-yr. trees	Orchard No. 4 35-yr. trees	Orchard No. 5 18-yr. trees*
Agri-Mycin	0.0	0.01	1.6	3.7	1.3
Streptomycin liquor	...	0.03	...	...	...
Streptomycin STS	...	...	...	...	...
Streptomycin STB	...	...	2.3	...	...
Check	11.1	20.4	39.3	377.0	24.5

Natural infection—no inoculation.

Materials at dosages to give 100 p.p.m. of major antibiotic were applied full bloom, and at petal fall.

* Applied as 5X concentrate.

Winter and Young observed that Terramycin HCl and tetracycline were inferior to streptomycin, and Agri-Mycin, which is a formulation of streptomycin and terramycin in a 10 to 1 ratio, gave results equal to but not superior to streptomycin alone. In two tests in commercial orchards in 1954, it appeared that the early and full bloom applications of streptomycin contributed almost equally to blossom blight control on apples, and that the petal fall applications were of minor importances, they said. Tests were also conducted on five commercial pear orchards and results were favorable.

Tung Cake Repressing Found Uneconomical

A much discussed question facing the American tung industry has recently been answered by researchers at the Southern Utilization Research Branch, USDA: whether or not oil-rich filter cake should be repressed to recover additional oil. Although filter cake usually contains more than 40% oil by weight, recycling it through the screw press does not recover any more oil than once-through processing, said R. S. McKinney, at the American Tung Oil Association meeting in Biloxi, Miss., Sept. 23 and 24.

These conclusions were based on two experimental runs, each of 90 tons, conducted in a typical commercial mill. All of the normal operations were carried out during the once-through processing: once-through hulling, hull separation, grinding of tung kernels, and filtration of the tung oil. Cake from the filter press was recycled through the screw press in a second run for comparison of results.

The first material balance published on a commercial tung mill, claim USDA researchers, is summarized in the table.

Materials	Once Through % Accounted For	Recycle
Nitrogen	101.1	110.9
Dry Matter	98.2	103.7
Oil	100.7	101.4
<i>Oil Losses</i>		
	<i>% of Oil in Fruit</i>	
Screw Press Cake	7.1	10.1
Filter Cake	5.9	5.9
Hulls	8.9	2.8

SRRL is continuing studies on the detoxification of tung nut meal for livestock feed. It is now possible to detoxify the meal, states F. G. Dollear, Southern Regional Research Laboratory. SRRL chemists are isolating the components of tung meal to establish a means of determining toxicity accurately and simply for control purposes.

People

Ralph Hixon of Iowa State To Receive Midwest Award

Ralph Hixon, dean of the graduate school at Iowa State College, Ames, has been named to receive the 10th Midwest Award, presented by the St. Louis Section of the AMERICAN CHEMICAL SOCIETY. The award will be made at a dinner meeting of the section on Nov.



1. A teacher and well-known researcher in the field of agricultural chemistry, Dr. Hixon's main contributions have been in the chemistry of starch. Dr. Hixon was born in Indiana, took a B.S. at Iowa State, studied in Sweden, and completed his doctorate at the University of Wisconsin. His postdoctoral research was done in Germany. In 1923, he became assistant professor of chemistry at Iowa State, associate professor in 1926, professor in 1929, research professor and head of the plant chemistry subsection of the experiment station in 1934, head of the department of chemistry in 1944, and was promoted to his present position in 1948. Dr. Hixon and his colleagues helped to develop the production of starch from waxy maize corn. He has also contributed to the development of improved high-yield hybrid corn.

Six Alexander R. Todd, professor of organic chemistry at the University of Cambridge, England, has accepted appointment as Arthur D. Little, Visiting Professor of Chemistry at the Massachusetts Institute of Technology for the current fall semester. He will deliver a series of 20 lectures on selected topics in natural product chemistry during the four months at MIT. He expects to deal with the chemistry of one group of vitamins, their function in enzyme systems, and the general field of nucleotide chemistry.

Calvin L. Dickinson has been named director of engineering for American Potash & Chemical Co. He has been with American Potash since 1953, when he left Diamond Alkali where he was plant manager of the organic chemicals division in Houston, Tex.

L. W. Babcock, director of personnel for Hercules, John E. Goodman, Hercules treasurer, and Ernest S. Wilson, director of engineering for Hercules, have been elected to membership on the board of directors for the company.

William H. McLean has been appointed to the new position of vice president and general manager of the chemical division of Merck & Co., Inc. He has been vice president for marketing during the past three years.

Harry L. Mahl has been promoted to superintendent of the new insecticide department of the Memphis, Tenn., plant of Velsicol Corp. He has been engaged in design projects for the company's new organic chemical plant at Memphis. Marvin Lissner has been promoted to the superintendent of the company's heptachlor plant in Memphis.

Frederick W. Wahlers has been appointed assistant sales manager of the Merchants Chemical Co., New York. He has been on the company's sales staff.

Edmund M. Buras, Jr., and Leon Segal have been promoted to chemists in charge of the cotton research units of the Southern Utilization research branch, USDA, at New Orleans. Mr. Buras will lead research on the chemical modification of cotton to impart new and improved properties for special uses, and Mr. Segal will conduct research on methods for chemically modifying the fine structure of cotton without loss of the fibrous form.

Clair Kennedy has been promoted to research manager for Perkins Products Co., a General Foods subsidiary in Chicago. He has been assistant laboratory director in food analysis at the Hoboken laboratories since 1953.

Hatton B. Rogers, formerly director of technical service for Huron Milling Co., has joined the executive staff of Dodge & Olcott as director of the dry solubles division.

John T. Goodwin, formerly with General Electric, has been appointed manager of the chemistry research division of the Midwest Research Institute.

Dale E. Wolf has been appointed manager of the agricultural chemicals research section of the Du Pont Co.'s Grasselli Chemicals Department. He succeeds the late Harry F. Dietz. He has been assistant manager of the section since 1950.

William S. Wallace has been named office assistant to John A. Rodda, sales manager of the Fairfield Chemical Division of Food Machinery, which was recently purchased by FMC from U. S. Industrial Chemicals division of National Distillers. Mr. Wallace has been with the division for many years. George Kerbey is to become Mr. Rodda's assistant in field sales operations. John F. Odenael will be in charge of sales in the New York area.