

As wonderful as the drug seems, however, scientists feel they cannot stress enough that much more work is needed. Overdosing, they point out, can cause undesirable effects in some plants such as death of the growing tips or fruit that is knocked off.

In addition, different experiments on the same plant have yielded different results. Treated tomato plants in one study, for instance, grew taller and produced twice as many tomatoes as untreated plants. Another study showed "fruit development not affected" in tomato plants.

More Research Needed

Drs. S. H. Wittwer and M. J. Bukovac of Michigan State University's department of horticulture sum up gibberellic acid research this way:

"While gibberellins produce many remarkable effects which can speed up production in a wide range of crops—and many more will be discovered—there is still much to be learned in their use. . . . Much laboratory, greenhouse and field testing is needed before the full power of the gibberellins will be realized. By that time, the farmer will be able to buy ample quantities from commercial sources. Because of cost, present uses will probably be with high-value greenhouse, nursery and garden crops as a fruit setting agent and in seed production."

History of Gibberellic Acid

The history of this revolutionary growth promoter involves military secrecy and a strange international barter that has resulted in the drug's expanded research in this country.

The story begins in Japan in the late 1920's. A fungus called *Gibberella fujikuroi*, which causes the disease known to rice farmers as "the foolish disease," was wreaking havoc with the rice crops by elongating the stems of rice plants. In the 1930's, Japanese scientists, looking for a control of the disease, had isolated several crystalline compounds from fermentation broths. (A relative of this fungal disease in this country attacks corn and is known as corn root rot.)

The Japanese named the crystalline compounds, which they found had growth-promoting capabilities, Gibberellin A and Gibberellin B.

Much excited about their find and the fact these compounds in only one part per million could cause abnormal plant development, the Japanese scientists published their reports in Japanese journals. At about this time, however, World War II broke out and Western scientists had only a vague knowledge of the Japanese discoveries. Some anguish was caused in this country with scientific rumors that the Japanese had a "secret weapon" for increasing food production.

At the same time, Army scientists were experimenting with the fungal disease itself as a possible weapon to be used against

Japanese rice crops. Nothing came of this study and at the war's end the Army information on gibberellins was declassified.

British Research

But before American scientists became excited, British scientists had started an intensive study of the gibberellins and tried to make a synthetic compound. When American scientists became interested a few years ago, the drug was a rare item. The little available here, however, did enable Dr. Frank Stodola of the U. S. Department of Agriculture to study it and make the first American report on the microbiological synthesis of Gibberellins A and X.

Since then, American and British scientists have found a related compound with the same capabilities and it is known as gibberellic acid.

The drug was still in short supply when Dr. P. W. Brian of Akers Research Laboratories, England, was visiting the USDA Beltsville Station in 1955. Interested in a drug called Amo-1618, a chemical that regulates plant growth, Dr. Brian offered Dr. John Mitchell of the Beltsville Station five grams of gibberellic acid for a like amount of Amo-1618.

Thus, a rather strange barter was concluded in which British scientists received a chemical that stunts plants in exchange for a chemical that elongates plants, and which has resulted in a rapid research program in the United States that may end in a whole new world of agriculture.

Science News Letter, May 18, 1957

GEOPHYSICS

IGY Program Needs Volunteers

➤ AMATEUR skywatchers are needed to take a census of all possible meteors seen during the International Geophysical Year (IGY) that begins July 1.

The volunteer program is an excellent opportunity for amateurs throughout the world to get in on the world-wide activities of the IGY. No special equipment or instruments are needed.

The volunteer observers can work either singly or in groups but should plan to spend at least a full hour at a time watching for meteors. Shorter periods of observation would have little statistical significance, Dr. Peter M. Millman, of the National Research Council of Canada, reports in the astronomical journal *Sky and Telescope* (May).

Special forms and instructions will be supplied free of charge to all interested amateurs who request them from Meteor Centre, IGY, National Research Council, Ottawa, Ontario, Canada. On the forms, volunteers will note the number of meteors they see, their approximate brightness and other pertinent details. The data will then be placed on IBM punched cards for analysis along with data obtained from radar observations.

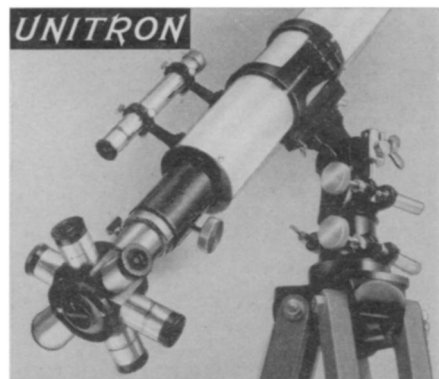
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