

BIOLOGY

Antibiotics Affect Plants

► BEING ABLE to cut the amount of nicotine in tobacco plants while they are growing by using antibiotics was the hope expressed by Dr. Louis G. Nickell, plant physiologist of the Chas. Pfizer & Company, Inc., Brooklyn, N. Y.

Discussing the effects antibiotics have had on plant growth, Dr. Nickell told a meeting of the 20th Annual Chemurgic Conference being held in Columbus, Ohio, that scientists are seeking an antibiotic compound which could either increase or decrease the yield of plant products.

"A change in the alkaloid content," the scientist pointed out, "could be utilized to good advantage. For example, if the change were a decrease in yield, this would be desirable if the plant were tobacco since it would have a lower nicotine content."

If the change were an increase, this would be desirable if the plant were a drug producer, he said.

Recently, Dr. E. Steinegger in Switzerland showed that penicillin increased both the growth and alkaloid production of the Jamestown weed or Jimson weed (*Datura stramonium*), whose alkaloids have been used in the manufacture of such sedatives

and antispasmodics as atropine, hyoscyamine and scopolamine.

In discussing the possibility that we are "on the threshold of the antibiotic era of agriculture," Dr. Nickell pointed out that antibiotics such as penicillin, streptomycin and Terramycin have already proved their worth as controls for diseases in both plants and animals and as stimulators of growth in chickens, turkeys, mink, calves and pigs.

Looking to the future, the scientist sees wide use of antibiotics as a valuable new weapon in the insecticide arsenal, "serving the dual role of protection against insects and food spoilage organisms," and at the same time, being safe for the consumer.

Next in store for the agriculturalist, Dr. Nickell reported, is the use of antibiotics in the preservation of food. Preliminary studies reveal that antibiotics can increase the storage life of foods by preventing spoilage organisms from gaining a foothold and rotting the food.

The Brooklyn scientist concluded his antibiotics in agriculture report by stating that antibiotics have come a long way in non-medical use.

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ton, at the ninth annual symposium on fundamental cancer research held at the university's M. D. Anderson Hospital and Tumor Clinic, Houston, Tex.

The cancer resistance factor cannot be detected after the appearance of the cancer, Dr. Pollard said. It does not reappear during the subsequent course of the illness. When the factor has disappeared, the tumor grows actively.

The resistance factor has been found in growing spleen tissue and it seems to be specific for the substance causing the cancer.

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The average life of all types of untreated railroad ties is approximately six years.

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METEOROLOGY

Two Causes for Drought

► DROUGHT IN the southern Great Plains is resulting from two weather factors cutting off its usual rainfall: a high pressure area located far over the Pacific and the rain shadow cast by the Continental Divide.

Both can be blamed on weather circulation patterns over the entire Northern Hemisphere, Jerome Namias, chief of the U. S. Weather Bureau's extended forecast section, said.

Rain falls when cold air forces warm, moist air to rise. As it rises, this air expands and, therefore, cools. With sufficient moisture in the air mass and warm temperatures, rain falls.

Prevailing winds in the southern Great Plains at 10,000 to 30,000 feet have been from the west southwest. They smack against the mountains, and are then forced down the eastern slopes. These winds are so strong they keep warm, moist air from the Gulf of Mexico from penetrating deep inland. The air is sinking rather than rising. Result: no moisture falls. Weathermen call this effect the rain shadow.

Far out over the Pacific is another sinking weather pattern. It is a high, or anticyclone, in the upper levels of the atmosphere. As air descends in this gigantic drain, it warms up and dries out. This high pressure area is part of the global circulation pattern that causes the west southwest winds to sweep over and down the eastern mountain slopes into eastern Colorado, western

Kansas, eastern New Mexico, western Oklahoma and western Texas.

A world-girling band of air high in the atmosphere, known as the planetary wave, seems to control air mass movements. This meandering river of air tends to fall into certain patterns, Mr. Namias said, with very long, stretched out wave motions.

The form and position of these waves is such that he expects the onslaught of dry air in the southern Great Plains area to continue at least through mid-April.

Science News Letter, April 2, 1955

MEDICINE

Anti-Cancer Factor Has Temporary Effect

► DISCOVERY OF an anti-cancer factor in mice has been announced.

The cancer resistance factor develops in mice shortly after they have been exposed to cancer-inducing agents.

The cancer resistance, however, breaks down when the mice are repeatedly exposed for a long time to the cancer-inducing substance.

Vaccinations against cancer and blood diagnostic tests for it, therefore, seem "a relatively remote prospect at this time."

These findings and their interpretation were presented by Dr. Morris Pollard of the University of Texas Medical Branch, Galves-