Food Crisis Nears Critical Stages

The problem of feeding the world's increasing population may depend on man's ability to control the production of certain basic foods—By Barbara Tufty

➤ AN IMMENSE EFFORT must soon be made by politicians, educators, scientists and religious leaders if humanity is to win the unequal race between over-population and food production.

Work must begin immediately if the world is to avoid the catastrophe of too many people and not enough food, Dr. J. George Harrar of the Rockefeller Foundation in New York said in opening a symposium at the annual meeting of the National Academy of Sciences, Washington, D.C.

Man has learned to control four basic factors in his effort to increase production of certain food plants throughout the world, Dr. Frank W. Parker of the Agency of International Development and Lewis B. Nelson of the Tennessee Valley Authority stated.

These four factors are: the genetic characteristics that produce stronger and healthier plants, the availability of fertilizers and mineral nutrients to supply energy to plants, the protection of these plants against disease and insects, and the control and use of water.

The extent to which man can meet his food needs in the next 10 to 20 years will depend upon his ability to continue to manipulate these factors, the scientists reported.

By maneuvering the genes that determine how strong and fine a plant grows, man has created superb hybrids of the food-producing plants, Dr. Paul C. Mangelsdorf of the Botanical Museum of Harvard University said.

Annual production of the principal U. S. food crop, corn, has doubled since 1930, from 26 to 52 bushels per acre. Since that time, however no progress has been made in producing new hybrids that are more successful.

To get the maximum benefit from hybrid seeds, farmers use fertilizers that add mineral nutrients to the growing plants. In the decade between 1950 and 1960, for instance, the use of nitrogen fertilizer has more than doubled, and other fertilizer chemicals have been used in increasing amounts.

However, the use of fertilizer has certain limits, Dr. Mangelsdorf reported. For instance, in the Corn Belt and Lake states, which produce 73% of U.S. corn, 87% of the corn acreage is already being fertilized at an average rate of 145 pounds per acre. Applying greater amounts than this gives farmers a small return on their investment, and larger applications can even decrease the plant yield in seasons of poor rainfall.

The third factor increasingly under

C. Bovagnoli

POOR LANDS—This poor farmer from a typical village in northern Togo is unable to grow enough corn or other food crops to meet his needs because he has little knowledge of modern agricultural methods. Farmers in developing countries must be educated to farming skills if they are to be able to supply foods to their starving nations.

Department of the Interior

SOIL CONTROL—Soil erosion is among the problems farmers must solve to maintain their land and insure a successful, steady yield. This land in one of the windiest areas of the Columbia Basin, Oreg., contains a small amount of coarse sand which comes to the surface and keeps the soil from blowing.

man's control—the protection of plants against insects, weeds and disease—has helped prevent disastrous destruction of valuable crops, pointed out Dr. Elvin C. Stakman of the University of Minnesota.

Even in a relatively advanced country like the United States, he said, plant killing agents such as weeds, insects and diseases reduce the potential crop production by more than 20%. Loss in many of the less advanced countries is considerably higher.

The pests and pathogens that feed on plants are indeed "shifty enemies," Dr. Stakman said. There are hundreds of species of harmful weeds, thousands of destructive insects, and thousands of plant pathogens ranging from invisible viruses and microscopic bacteria to fungi and nematodes.

Even though tremendous progress has been made in the recent past to develop pesticides, fungicides and herbicides, there remain many insects and diseases that cannot be controlled economically by chemicals. In these cases, plants must be produced that naturally resist these enemies.

During his history man has used at least 3,000 species of plants for food, and cultivated at least 150 of these to the extent that they have entered into the world's commerce. Man has tended to use fewer and fewer species and to concentrate on the more efficient ones.

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SPACE

Probe Tracking Antenna Will Follow Men to Pluto

See Front Cover

➤ ONE OF THE WORLD'S largest and most sensitive automatic space tracking and telemetry antennas was dedicated officially at Goldstone, Calif.

The new antenna will be able to follow future Mariners and other spacecraft not only to Mars and Venus but even to Pluto on the outer reaches of the solar system.

The antenna, newest facility in the Deep Space Network of the National Aeronautics and Space Administration, is the United States' largest fully steerable antenna and the world's largest built for research by spacecraft.

With a parabolic aluminum dish reflector 210 feet in diameter, the new Goldstone facility, located in the Mojave Desert, will have two and one-half times the range of the 85-foot diameter antennas at the network member stations in Australia, South Africa and Spain, and the other deep-space facilities at Goldstone.

The reflector of the tracking and communication antenna, shown on this week's front cover, dwarfs workmen standing inside. The cone in the center of the dish, houses ultrasensitive receiving and transmitting equipment. (Cover photograph by NASA.)

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