

CHEMISTRY

Sources for Creating Food

Future nourishment for a hungry world may come from yeasts, seaweed, algae and wood. Scientists all over the world are working to make this practical.

► FOR the future populations of the world, that otherwise may be hungry, let them eat yeasts, seaweed, and algae and wood.

The dining rooms of the United Nations do not feature such unusual foods today nor will they in the near future. But the UN Conference on Conservation and Utilization of Resources meeting in Lake Success, N. Y., discussed just how soon and by what methods such "creatable resources" can be turned to practical use.

A most promising discovery is that a special microorganism, called *Rhodotorula gracilis* or more simply fat yeast, produces in its cells a substance that is 50% to 60% fat. Because fat is one of the foods in shortest supply, this is exciting practical-minded technologists. The kinds of fatty acids in the yeast fat are rather close to palm oil fat. The yeast fat also contains some of the vitamin B complex and the stuff from which vitamins A and D are made. A hundred pounds of sugar fed to this yeast produces 16.5 pounds of fat, as well as a quarter that amount of protein. The sugar used can be in molasses of lowest grade.

A report by Dr. Harry Lundin of Sweden's Royal Institute of Technology, Stockholm, shows that the dry matter in fat yeast costs about 13 cents a pound and that a desirable mixture of fat and protein should be manufactured by a practical continuous process. First the yeast is allowed to grow for 10 hours with a moderate amount of fat in its cells. Then it is put through a fattening phase for two days when it converts the sugar to fat at a great rate.

Britain turned to yeast for possible cattle feeding when a Nazi blockade threatened in 1940 just as the hard-pressed Kaiser's government in 1915 studied yeast manufacture from inorganic nitrogen. This was revealed by Dr. A. C. Thaysen, who reported from Britain's Colonial Microbiological Research Institute at Trinidad. Since 1944 there has been in Jamaica a successful food yeast factory, producing material suitable for human consumption.

The yeast itself can be fed on sugar made from wood, Dr. J. A. Hall of the U. S. Forest Service at Portland, Ore., reported. Or molasses made from wood can be fed directly to livestock, as shown in many U. S. agricultural college tests.

As for seaweed, used for centuries as laver bread fried for breakfast in the case of the reddish or sea lettuce sort in Scotland, Dr. F. N. Woodward, director of the Scottish Seaweed Research Association, pre-

dicted that the greatest use of marine algae will be in providing raw chemical materials, including alginic acid now used in food, drugs, cosmetics and textiles, and newer chemicals called mannitol, laminarin and fucoidin, that correspond roughly to the sugar and starch of land plants.

Science News Letter, September 3, 1949

BIOCHEMISTRY

Substance in Potatoes May Aid Body Use Proteins

► POTATOES may contain mysterious substances which help the body make better use of proteins.

This discovery was reported to the First International Congress of Biochemistry in Cambridge, England, by two British scientists, Dame Harriette Chick and Dr. E. B. Slack.

Young rats doubled their growth rate when the non-protein nitrogenous potato

substances were substituted for one-fourth of the wheat protein in their diet. The researchers said that this cannot be explained on the basis of supplying essential amino acids, building blocks of protein. They believe some unknown mechanism is involved.

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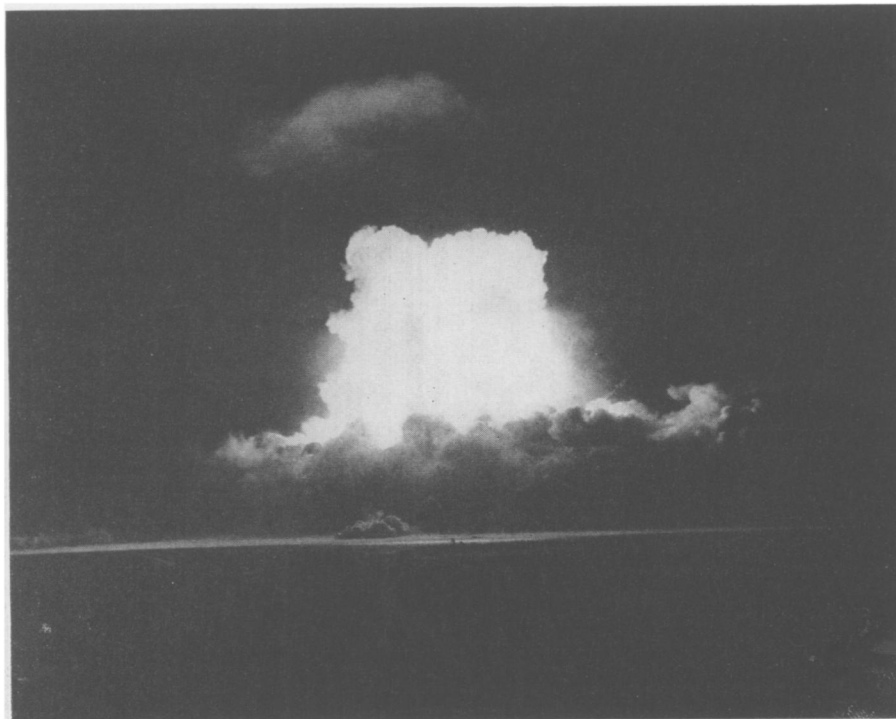
On This Week's Cover

► "FIREBALL and shockwave of an atomic bomb explosion, during the tests held at Eniwetok," is the terse official statement from the Atomic Energy Commission which has just released a series of pictures taken of the atomic bomb bursts in the Pacific.

The bombs worked, and the tests yielded the required information, Lieut. Gen. John E. Hall, commander of the Joint Task Force Seven, stated at the conclusion of the tests held in April and May, 1948.

It was pointed out that these tests were not to be confused with the Bikini tests which were made to find the effects of atomic explosions on naval materiel and equipment as well as on animal and marine life. The purpose of this second series of tests was to find answers to questions on the military applications of atomic energy.

Science News Letter, September 3, 1949



TESTING THE ATOM BOMB AT ENIWETOK—This is one in a series of pictures showing the successful explosion of an atom bomb in tests made in April and May, 1948, in the Pacific, which have just been released by the Atomic Energy Commission. Official comment, beyond expressing satisfaction with the results of the test, is confined to designating it as a "burst of an atom bomb during the experimental tests at Eniwetok."