AGRICULTURE

Carbon Aids Soil-Heating

The natural gas derivative, carbon black, has been found to help the soil absorb more heat from the sun. This finding may help farmers in their planting.

➤ CARBON black, the powdered material obtained from natural gas and used to toughen automobile tires, has been successfully used at the Massachusetts Agricultural Experiment Station, Amherst, to raise soil temperature, according to a report in INDUSTRIAL AND ENGINEERING CHEMISTRY, publication of the American Chemical Society.

Soil containing the carbon black absorbs more heat from the sun than ordinary soil. In the experimental work, carbon black at the rate of two tons per acre was mixed in the top two-inch layer of a sandy-loam. With an instrument called a potentiometer, surface and near-surface temperatures were recorded every 15 minutes, 24 hours a day, for more than a year.

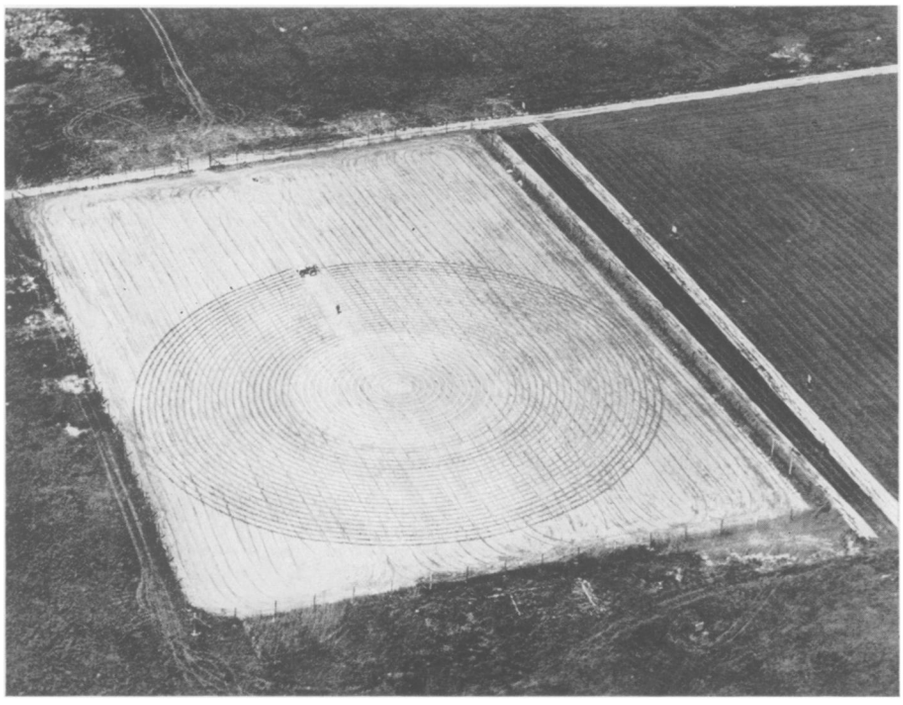
During the spring and summer months, it was found, maximum daily temperatures reached by the carbon-treated soil surfaces were higher on an average by about two degrees Fahrenheit than maximum temperatures of untreated soil surfaces in adjacent plots of the same type of soil. At a two-inch depth, the carbon-treated soil showed maximum daily temperatures about 3.4 degrees higher than those of the untreated soil.

Further tests are being made both at Amherst and at other agricultural institutions throughout the country. If an economically feasible process can be worked out, farmers may be able to defrost their land for earlier planting in the spring, and at the same time postpone the first fall frost and thus give late crops more time to mature.

The cost is not excessive. Carbon black runs from 3.5 to seven cents a pound. A single treatment should suffice for a number of years even though some loss from erosion may occur. There is no evidence that the carbon black acts as a plant nutrient or is digested by plant roots. Whatever influence it exerts on plant growth is attributed to its effects on soil temperature, as well as on the texture, salt retention and moisture retention of soils.

The experiment of the Massachusetts station was carried out by Prof. John Everson of the University of Massachusetts and James B. Weaver of Godfrey L. Cabot, Inc., Boston, a manufacturer of carbon black.

Science News Letter, August 13, 1949



RADIATION'S EFFECT ON GROWING PLANTS—Rows of crops are planted at varying distances from a source of radiation in the form of radiocobalt which will be placed on the pole in the center of this experimental area to help scientists determine the effect on plants.

INVENTION

Concentration Process for Uranium Given AEC

➤ A NEW process for the concentration of uranium out of its ores has just been disclosed via the issuance of U. S. patent 2,477,924 to Sherman M. Fried of Chicago and Norman R. Davidson of Sierra Madre, Calif. They have assigned their patent rights to the government, as represented by the Atomic Energy Commission.

The new process covers just one step in the concentration of uranium oxides, from uranyl uranate (U_3O_8) to uranium trioxide (UO_3). Essentially, it consists in heating the lower oxide in the presence of oxygen under pressure. Extent of conversion and time required vary according to temperatures and pressures employed. Time may be cut to as little as one and one-half or two hours by using pressures of from 60 to 150 atmospheres at a temperature between 700 and 750 degrees Centigrade.

Science News Letter, August 13, 1949

AERONAUTICS

Pre-Flight Training in High Schools Increased

➤ SOME 100,000 cadets of high school age are to be enrolled in pre-flight training this fall, Civil Air Patrol has revealed. Already 23,000 boys and 7,000 girls have enrolled in the program which is given in secondary schools throughout the nation. The experimental stage has now been passed, and credit toward diplomas is being given the students for their study of air science.

The ultimate aim of this educational program is to create a continuing body of air cadets whose interest in aviation will carry them into the aircraft industry as scientists, executives, mechanical and maintenance experts, and as navigators and pilots. They are receiving instructions in class rooms after school hours, in club quarters of the Civil Air Patrol and at nearby air bases. Classes are held once a week. Instructors are, in general, local volunteer members of the Civil Air Patrol.

The Civil Air Patrol is an official auxiliary of the U. S. Air Forces, and is ready at all times to go into prompt service in emergencies such as search and rescue work. Thousands of hours were flown by CAP pilots last winter during the blizzard in the West that made feeding isolated people and cattle necessary. This is but one of many aviation jobs for which their services may be required. Many of the members of the CAP are reserve pilots in the U. S. Air Force.

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