AGRICULTURE

Can Prevent Dustbowls

Get-rich-quick attitude and the inexperience of some farmers is blamed for dried-up areas in southern Great Plains. Technical assistance and education can overcome problem.

➤ THE WEATHER is not the sole cause of the present "dustbowl" conditions gathering in the southern Great Plains. Ignorance, greed and inexperience share the greater burden of guilt.

Get-rich-quick wheat speculators, inexperienced farmers and old-timers who refuse to practice soil conservation methods have contributed to keeping an historically bad situation bad.

Soil conservation experts state emphatically that there is very little they can do to control the amount of rainfall or wind that plagues the Plains landowners. But, they insist, wise use of the land and good farming practices can be applied to prevent "dustbowls."

"Recurring drought," the U. S. Soil Conservation Service has reported, "is a normal feature of the southern Great Plains, an area of about 200,000 square miles in eastern Colorado, western Kansas, eastern New Mexico, western Oklahoma and western Texas."

"Extended droughts, interspersed with wet periods, have been coming to this region ever since it was settled. Reliable information indicates that droughts have been a common feature of the region for centuries."

After each prolonged drought, of which there have been four since the area was settled in the 1880's, the wet periods that followed brought new settlers. Encouraged by the rainfall, these new farmers took up the same old farming techniques which proved inadequate in the past.

In addition, whenever wheat prices went up, such as during the two World Wars, speculators did absentee farming, hoping for a rich profit and not caring about the land.

To add to the poor land saving methods, much of the new land plowed under during wet and wealthy periods is classed as poor land for crops.

During the high price times of 1941-1950, the Service pointed out, "about 4,000,000 acres of sodland were plowed up for wheat or cotton. At least 75% of this newly plowed land is unfit for cultivation. It will produce profitable crops only during years of above normal rainfall. It is highly susceptible to wind erosion in years of below normal rainfall."

To cope with the problems of erosion and dust storms, thousands of farmers in the area today have applied soil conservation practices. They have left a protective stubble on their land as long as possible to hold the soil in place. They have limited the winter grazing of their cattle. They have not cultivated poor lands.

In general, they have been satisfied to make a small profit during the dry years and gravy during the wet years, rather than try and bleed the land in a get-rich-quick program.

But then, too, many have watched their land blow or be covered over because their neighbors were careless.

The Soil Conservation experts at all levels agree that they can lick the problem, without resorting to a regimented land use program forcing farmers to follow good conservation practices. They believe that technical assistance, education and continued research can save the land and prevent dustbowls.

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CHEMISTRY

New Device Measures Length of Molecules

➤ THE LENGTH of giant elongated molecules, such as those found in certain viruses, can be accurately measured by a new device.

Developed by Dr. John Rowen and Reginald Dickinson, of the University of California at Los Angeles' Atomic Energy Project, the device is an improved model of the streaming birefringence apparatus.

A tiny beam of polarized light is sent through a mechanism that spins the molecules at speeds ranging from one revolution per minute to thousands per minute. The direction of rotation can be reversed almost instantaneously.

As the speed of rotation is increased the molecules tend to line up like logs in a stream. The angles that the molecules assume in the process of lining up can be measured with the aid of the polarized light.

From these data the length of the molecule can be computed with a high degree of accuracy.

The new device has several advantages over existing birefringence apparatuses. Its larger range of constant speeds and other design factors permit a greater precision of measurements. It is also a mobile unit. Previous models have been designed for a fixed installation.

The device has been used to study the tobacco mosaic virus which is a large rod-like particle, the desoxyribonucleic acid of genes, and the thread-like molecule of hyaluronic acid. Because its measurements depend upon angular relationships the apparatus cannot be used to study spherical molecules.

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MEDICINE

Artificial Eyes Twinkle

➤ MOVING, TWINKLING artificial eyes are now available to veterans who have lost an eye through injury or disease.

The natural-looking movements and the twinkle are done with magnets. One magnet is in a clear, non-irritating plastic which is implanted within the eye socket and attached to the muscles that formerly moved the real eye which was lost. The other magnet is set into the artificial eye to match the magnet of the implant.

More than 150 New England veterans now are wearing the "magnetic eye." It was designed by Dr. Everett H. Tomb, chief of the eye, ear, nose and throat section, and Dr. Donald F. Gearhart, D.D.S., chief of the plastic eye and restorations clinic at the Boston Veterans Administration hospital.

The magnets are so aligned that the artificial eye cannot slip out of correct, normal position. They provide excellent anchorage for the eye which relieves the eyelids from carrying the weight of the artificial eye.

The movement muscles of the removed eye, when attached to the implant, cause it move in the same directions and at the same time as the living eye. Likewise, the artificial eye's magnet, by following the magnet of the implant, causes the artificial eye to move in the same direction at the same time as the living eye.

Besides the better appearance, problems of hygiene can be reduced with the "magnetic eye."

Notably good results have been accomlished by installing the magnetic implant in veterans who previously had older types of artificial eyes.

The VA doctors feel that veterans with difficult eye problems caused by disease or eye injury can now look for more complete rehabilitation.

Veterans outside the New England area will be able to get these eyes as soon as the pilot plant project can be expanded. How soon they may be available for non-veterans is not yet known.

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