Do You Know?

Cotton *linters* are being used in paper-making to meet a shortage in rags.

Apply two thin coats of *shellac* rather than one thick coat, experts advise.

Rags used in making high-grade white *paper* must have all color dye removed before processing.

Cincinnati prohibits *smoking* in elevators and in all retail stores employing 25 or more persons.

Danger from whirling electric *fans* is lessened if they are painted red or yellow to make them conspicuous.

Smoke from a diesel engine can be due to overload, wrong fuel, too early or too late fuel injection, or too low or too high compression.

Insulated *aluminum* wire, developed for use in airplanes because of its lightness, is now being used in place of copper in many installations.

AGRICULTURE

Soybean to Feed Livestock

In midwestern regions, where rains harmed the corn crop, the soybean will go to the rescue for livestock feeding. Scientists are doing research on it.

➤ THE SOYBEAN, that versatile vegetable that is probably the Orient's most valuable gift to Occidental agriculture, may do a rescue job in parts of the Midwest where May frosts and June floodrains either prevented corn planting or drowned what was planted. Even if the beans do not mature, the crop can be cut green and either dried for hay or put into the silo, providing something for livestock to eat.

Soybeans were used as a catch crop in the Midwest half a generation ago, when heat and drought brought to grainfields the disaster that is now threatened by recent cold and present wet. During the mid-thirties, drought not only discouraged grain growth; it encouraged a double plague of grasshoppers and chinch-bugs.

The latter were especially bad; they moved like a crawling carpet, and when they struck a growing field the young grain went down as before a fire.

Knowing that chinch-bugs attack only grains and grasses, farmers plowed up their ruined grainfields and planted soybeans, even after mid-June. Thus a desperate situation was prevented from becoming wholly hopeless.

Expansion in Planting

This emergency brought about the greatest expansion in soybean planting that the country has ever seen. In Iowa, for example, the acreage devoted to the crop during the first of the really bad drought years was between seven- and eight-fold that of the previous year. Having thus been roughly introduced to the soybean, the farmers found the acquaintance profitable and have faithfully continued to cultivate it.

Agricultural scientists are giving the soybean the attention merited by the friend in lean years that becomes a source of wealth in better times. At Urbana, Ill., a U. S. Department of Agriculture plant pathologist, W. V. Allington, is applying wartime observation methods to the finding of enemies of the soybean. Flying his own light plane above soybean fields, he takes air photographs that show up fields infested with a fungus disease, brown stem rot, as lighter areas than the healthy, dark-green fields. Location of the infected fields indicates that farmers who plant soybeans several years in succession are simply exposing their seed to soil where the fungus lurks.

A minor but widely known use of soybeans is in the production of the salty, tangy sauce, often called "dragon's blood", that you get with every serving of chow mein or chop suey. The Department's Northern Regional Research Laboratory at Peoria, Ill., now has four certified strains of the microorganisms used in fermenting this soy sauce. They are two molds, a bacterium and a yeast. They are to be maintained in pure culture, to supply any manufacturer of soy sauce whose own stock cultures have become contaminated with "wild" organisms floating in the air.

A Chinese scientist, Pei Sung King of the Chinese government's National Bureau of Industrial Research at Chungking, aided in the selection of these strains. As a guest worker at the Peoria laboratory, he suggested various methods of soy-sauce fermentation which his American colleagues tested and compared in working out the method they now recommend to manufacturers in this country.

Department of Agriculture chemists have worked out an extraction method that uses ethyl or grain alcohol to get the oil out of ground-up soybeans, instead of the light petroleum fractions hitherto in use.

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