THE PRACTICAL APPLICATION OF IAROVIZATION

Iarovization (vernalization) is a seed treatment consisting of a slow and limited germination at low or high temperatures, depending on the crop, that at high temperatures being restricted by deficient moisture and by salt solutions. According to published claims, by means of a low temperature treatment winter wheat may be seeded successfully in the spring and the growing period of spring wheat and other crops may be shortened materially. It has been reported to be widely applied in Russia.

Low temperature treatment of winter wheat to permit spring seeding is not new, as it was well known and occasionally practiced in this country 75 to 100 years ago. Modern research on iarovization seems to have been based largely upon results reported by Gassner in Germany in 1918.

No direct evidence regarding the practical value of low temperature iarovization of winter wheat in the United States is available. In 62 field experiments in seven states, winter wheat coming up in the spring after having been “naturally iarovized” by late fall or winter seeding yielded an average of 1.5 bushels per acre less than spring wheat and 8.4 bushels less than early fall sown winter wheat.

Iarovized sorghum seed (treated at high temperatures as recommended for crops of this type) failed to produce earlier maturity or better growth than untreated seed of the same 41 varieties in experiments conducted in 1933. The germination of the seed of most of the varieties was either greatly reduced or entirely destroyed by the treatment. Other spring grains showed little or no effect of iarovization except in reduced germination.

No satisfactory method of iarovizing seed under farm conditions has yet been devised. The obvious difficulties of temperature control, such as excessive sprouting, moldy seed, low germination, and drying the seed, or seeding moist, partly germinated seed, are ample evidence that iarovization is not of immediate value to the practical farmer.

A mimeographed circular prepared by the writer describing some early trials and practical limitations of iarovization has recently been issued.—JOHN H. MARTIN, Division of Cereal Crops and Diseases, Bureau of Plant Industry, U. S. Dept. of Agriculture, Washington, D. C.