ALTHOUGH the effect of storage conditions upon the viability of cottonseed is of importance to workers with cotton, the subject has received little attention and is inadequately covered in the literature. Recognizing these facts, members of the Cotton Seedling Disease Committee, Cotton Disease Council, have cooperated in conducting experiments to determine, in particular, the effects of climate, acid delinting, and Ceresan treatment upon the longevity of cottonseed in ordinary farm storage.

The longevity of cottonseed is influenced by seed moisture and temperature, which are determined largely by the relative humidity and temperature of the air surrounding the stored seed (1, 5). In the dry atmosphere of parts of Texas, Arizona, and California, cottonseed may remain viable for many years, while in the more humid sections of the Cotton Belt, especially in the coastal districts, vitality may be totally destroyed in less than 3 years (4).

That more exact information might be available regarding these phenomena, provision was made to store similar seed lots at representative locations in the Cotton Belt, and to determine at intervals the changes in the seed brought about by the particular storage conditions.

MATERIALS AND METHODS

The seed used was of the Stoneville 2 variety grown at Jackson, Tenn., in 1937. All the seed was assembled at Knoxville, Tenn., and thoroughly mixed before individual lots were prepared. Thus, the lots for each location were as nearly alike as possible. Four lots of approximately 80 pounds were shipped to each place, as follows: Lot 1, normal fuzzy seeds; lot 2, normal fuzzy seeds, treated with 2% Ceresan; lot 3, acid-delinted seeds; and lot 4, acid-delinted seeds treated with 2% Ceresan.

The several storage locations and pertinent weather data are shown in Table I. The seed was placed in storage in April 1938. After storage, samples were drawn from the center and edge of each bag at 6-month intervals by means of a tube designed to sample a longitudinal section through the bag. The samples were placed in tight tin containers and shipped to Knoxville for determination of moisture and germination.

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3Figures in parenthesis refer to "Literature Cited", p. 45.

4In 1939, Mr. R. E. Beckett made germination tests on cottonseed lots that had been stored at the U. S. Field Station, Sacaton, Ariz., for 6 to 16 years. In general, these seed lots gave excellent germination. The two seed lots stored for 16 years germinated 59% and 91%, respectively (unpublished data).