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THE recent large scale harvesting of lupine seed in the South and long time holding of large amounts of fieldpea, vetch, and other seed in storage has brought to the fore the problem of maintaining seed viability under such conditions. High humidity and high temperatures, such as prevail during the summer months in the South, tend to decrease viability in most seed. Lupine seed seem to be particularly susceptible to such environment and many growers of this crop have experienced losses due to unfavorable conditions. Deterioration in fieldpea and vetch seed in storage has been less than with lupine, but the same general problem prevails. If these losses are to be reduced and maintained at a minimum, it is necessary to learn more about the conditions of storage favorable to maintaining viability and the nature of the seed itself with reference to moisture content and other factors influencing its general condition, both previous and subsequent to harvest. Such information should be helpful in judging proper time of harvest and treatment necessary to put the seed in condition to retain viability in storage. In order to supply more specific information than is now available regarding these crops, work has been undertaken in both the laboratory and field. In this paper the results of some preliminary laboratory work at Beltsville, Md. is reported to make data available to others working on the same or similar problems.

Duvel (3), in 1904, was one of the earlier workers to study the effect of climate on the longevity of seeds. Heinrich (4) pointed out that there is a critical moisture content of seeds beyond which they tend to deteriorate when held in dry storage, and that artificial drying before storage must be carried out with caution as seeds vary greatly in their ability to endure desiccation. Crocker (2), in considering the factors affecting the life-span of seeds, has given an extensive review of the literature pertaining to longevity of seeds up to 1938. Among more recent publications may be cited the research on storage of vegetable seeds by Boswell, et al. (1), of fescue by Kearns and Toole (5), and of soybeans by Toole (6). These studies show the close interrelation of moisture and temperature as it affects longevity. In the kinds of seeds under consideration by these authors it is shown conclusively that if either temperature or moisture is high, the other must be low if viability is to be maintained during the storage period.

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1 Contribution from the Division of Forage Crops and Diseases, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration. Received for publication January 23, 1948.

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3 Figures in parenthesis refer to "Literature Cited", p. 464.