SYNOPSIS. Tropical condition caused complete seed deterioration in a few weeks time, while desert condition retained quality. Arctic or temperate conditions resulted in a slow decline of viability in a six-month period. Polyethylene bags, 6 mil thickness, preserved seed quality even under tropical conditions for 11 weeks.

THE reduction of forage seed viability during storage and shipping has been observed by many workers (4, 5, 6, 7, 8, 9). Moisture condition and temperature were indicated as the main factors affecting viability of a given species or variety of seed in a definite time elapsed. Forage seeds stored over-winter in western Oregon often exhibit marked deterioration when shipped to southern states or overseas. It was found in a warehouse survey that many seed lots contained a detrimentally high content of moisture in the winter and spring months because of the winter rainy season which prevails in the area. Large quantities of forage seed are shipped from Oregon during the winter and early spring. The seed deterioration which occurs during transit probably is because of the high moisture content combined with the high air temperature to which the seed is shipped or temporarily stored at destination.

The major objective of this study is to verify the above assumption, by observing the behavior of seed lots under different combinations of temperature and relative humidity which simulate various shipping and temporary storage conditions, and to explore the possibility of moisture-proof bags to prevent seed deterioration under undesirable environment.

MATERIALS AND METHODS

Three commercial lots each of Alta fescue (Festuca arundinacea), chewings fescue (Festuca rubra var. comutata), common ryegrass (Lolium multiflorum), crimson clover (Trifolium incarnatum var. Dixie), Highland bentgrass (Agrostis tenuis var. Highland), and sudangrass (Sorghum vulgare var. sudanense) were packaged directly from warehouses in western Oregon in May 1958 into burlap or fine woven cotton bags of approximately 10 pounds.