

Storage temperature and relative humidity affects the rate afterripening and viability of *Heteropogon contortus* seeds

*Heteropogon contortus* (piligrass) is drought and fire tolerant grass native to the dry leeward sides of the Hawaiian Islands. Primarily utilized for revegetation of severely degraded land, it is now being evaluated for roadside revegetation, agricultural riparian buffer strips and landscaping. An important limiting factor for piligrass revegetation is its seed dormancy. Although a dry afterripening requirement has been mentioned in the literature, specific storage conditions to aid dormancy loss have not been determined. In this study, the effects of storage temperature and relative humidity on piligrass seed dormancy and viability were examined. Freshly harvested piligrass seeds were incubated for 0, 1, 3, 6, 9 and 12 months in a combination of three equilibrium relative humidities (12%eRH, 50%eRH and 75%eRH) and three storage temperatures [10°C, ~23°C (ambient) and 30°C]. Seed germination and tetrazolium tests were conducted at each incubation period to determine dormancy loss and seed viability. Results indicate that increasing storage relative humidity decreases percent germination and viability of piligrass seeds. Increasing storage temperatures improves percent germination but decreases seed viability. Storage at 12%eRH, 30°C and 50%eRH, 30°C exhibited the highest germination among all treatment combinations. Seed viability was also maintained at these treatments. To optimize percent germination, seeds must be stored under these conditions for at least 6 months. Storage at low temperatures (10°C) maintained dormancy and viability of piligrass seeds, regardless of equilibrium relative humidity. Storage at 75%eRH, 30°C greatly increased seed deterioration and viability.