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Effects of dry and moist heat shocks on seed viability and germination of Lotus strigosus and Lupinus excubitus var. hallii. M.S. Thesis. 1978. 42 p. Calif. State Univ., Fullerton, CA 92631

ABSTRACT

The seed ecology of Lotus strigosus and Lupinus excubitus var. hallii, two legumes found on recent chapparal burns, was investigated. Freshly collected Lupinus seeds were dormant. Dormancy was induced in Lotus seeds by subjecting them to dry heat (35°C) for 96 hours.

Tolerance of seeds to 45 minute heat shocks from 20-100°C in dry and moist soil as well as the ability of these heat shocks to overcome dormancy were examined. Dry heat from 20-80°C did not significantly affect Lotus viability and germination; however, moist heat above 60°C significantly reduced Lotus viability and germination. Dry or moist heat from 20-80°C did not significantly alter Lupinus viability. Germination was low for all Lupinus seeds; however, moist heat from 20-80°C significantly increased Lupinus germination. Dry and moist heat at 90-100°C was lethal to seeds of both species.

Dimorphic Lotus seeds can produce new plant several years after a fire over dry soil. Lupinus seeds could produce new plants the first year after fire over dry or moist soil.