# Seed germination response to cold stratification period and thermal regime in Phacelia secunda (Hydrophyllaceae): Altitudinal variation in the mediterranean Andes of central Chile

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The ability to germinate under a variety of environmental conditions is essential for plant species inhabiting a wide range of altitudes and latitudes. Phacelia secunda J. F. Gmel. (Hydrophyllaceae) is a perennial herb with wide latitudinal and altitudinal distributional ranges. In the central Chilean Andes (33 °S) P. secunda can be found from 1600 m sealevel up to the vegetation limit at 3400 m. It has been suggested that seeds from populations encountering long periods with snow cover and adverse winter conditions would require longer periods of cold stratification for germination than those from populations exposed to milder winters. Given that the snow-free period decreases with elevation, seeds from high elevation populations could require longer period of cold stratification to germinate. Moreover, it has been shown that seeds from arctic and higher elevations environments are adapted to germinate better under high temperature conditions. Germination response with increasing peri