**Ageing / Longevity protocol**

Abstract:

The alpine zone is under the threat of climate change and rising temperatures have been recorded consistently over the past decade. Its effects over alpine plant communities (p.e. phenology, reproduction, growth, survival) are being studied all around the globe however, the regeneration niche is still under-studied. Alpine species’ seeds have been recently classified as short-lived and there have been insight reflecting bedrock type effects on germination. However, the roughness of alpine areas creates micro topographies that modify local conditions favoring niche differentiation. No studies have investigate if bedrock or micro niche preferences impact on seed longevity which can influence species coexistence and community assemblage. In this study, we want to test seed longevity from 25 alpine grassland species from siliceous and calcareous bedrock with different micro niche preferences obtaining seed survival curves and p50 values. Our study area is the Cantabrian range in northwest of Spain, site locations above 1900 m.a.s.l. Mature seeds were collected during August-September 2021 at point of natural dispersal. Following Davies et al. (2016) reduced seed-number ageing protocol, seed removal time intervals were 2, 10, 15 and 30 days followed for a 4-weeks germination experiment. For all our accessions, germination substrate was 1% agar + 250 ml/L of GA3 in Petri dishes. Germination conditions were set with alternating temperatures 22/12ºC at 12/12h photoperiod. Once a week we scored the germination experiments removing seedlings when the radicle was at least 2mm long. Data will be analysed via probit analysis with Genstat software/GLM binomial logit function with R to test whether bedrock type and microsite preferences have an effect on seed survival curves and P50 from alpine species considering also their phylogenies.