Seasonal chlorophyll evolution in needles of WILD pine (Pinus sylvestris L. var. nevadensis Christ.) as determined by temperature, photoperiod and relative water content

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The forest of *Pinus sylvestris* located in Sierra Nevada (Granada, Spain) has a great ecological value, since as var. nevadensis represents the southern limit of this specie in Europe. During a complete seasonal cycle, beginning in October, and at intervals of approximately 15 days, the content of chlorophylls (a, b and total) has been measured in needles sampled from two orientations (N and S) in pines situated at 1700 m above sea level. Climatic variables were obtained by means of a meteorological station located in the area.

The results indicate that the quantity of chlorophyll varied significantly along the year, presenting the minimum value during the month of February and the maximum during August. Chlorophyll concentration was always superior in the needles sampled at N orientation, although during the months of May and June, the quantity of chlorophyll was equaled in both orientations. Finally, a model of multiple regression (R=0.871 * * *, n=18) explained the seasonal variation of the content of chlorophylls in wild pine in Mediterranean forest as a function of photoperiod, temperature and relative water content of the needles.