

Phenological observation in the Spanish National Institute of Meteorology

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Phenology is the study of biological phenomena occurring periodically in response to seasonal changes related to weather and climate.

Complex physiological and ecological processes are involved in these phenomena, being the photoperiod (sunlight duration) the fundamental factor, and the weather a factor operating to regulate the setting up of a phenophase. This is the reason why phenology has been used in many Meteorological Services as a climate descriptor, as well a branch of agrometeorology (for instance, as a monitoring aid in pest management). At present, phenological data are very useful in climate change studies.

In the Spanish National Institute of Meteorology (INM) there is a network of phenological observations made by voluntary personnel who have been gathering data from 1942. From 1958 these data are regularly published in the form of maps of isonephas in our Meteorological Calendar. If we consider every date of occurrence of a phase for a specific specie, in a specific place, as data, in the INM are recorded more than 400,000 data (approximately 120,000 of them in computer support).

In this poster we present: a) a description of the INM's phenological data; b) maps of average isonephas for the period 1971-2000 for some of the phenophases; c) preliminary results in trends in flowering and falling of leaves; d) some remarks about the possible climate change impacts on the ecosystems of the Iberian Peninsula (IP). At the same time we show the importance of this kind of studies in the IP due to its peculiar bioclimatic characteristics, and we propose methods to validate historical data and some conceptual and operative ideas to implement in the near future an observation methodology. Our purpose is to collaborate in the effort to achieve the required standarization by means of guide lines agreed by the several countries with the aim of the setting up of a high quality European phenological network (or networks) with key indicators and common criteria and methods.