

PHENOLOGICAL RECORDS IN CARPATHIANS IN 19TH CENTURY AND THEIR POSSIBLE USE

REGISTRAZIONI FENOLOGICHE NEI CARPAZI NEL XIX SECOLO E LORO POSSIBILE USO

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Abstract

First phenological observations in Carpathian region were done in the beginning of thirties of the 19th century in Orawicza by a medical doctor P. Wierbitzky (Nekovář, 2008). Nevertheless, first systematic observations and records of plant development in this region are connected with the establishment of Austrian Institute for Meteorology and Geomagnetism since 1851. Though the historical significance of these observations is high the data recorded are of low quality, frequently interrupted and fragmented.

Further development of phenological observations came with the methodology of observations introduced by Karl Fritsch in the beginning of sixties but mainly with the establishment of Hungarian Meteorological Service in 1871. Data from the period 1871-1885 were recorded and published in the yearbooks and despite of the fragmentary character of the records they are usable for some evaluations. This article brings the description of the data sets of systematic phenological network in Carpathian region and considers some possible phenological evaluations.

Keywords: phenological phase, plant development, phenological calendar

Riassunto

Le prime osservazioni fenologiche nella regione dei Carpazi risalgono all'inizio degli anni '30 del XIX secolo ad Orawicza, ad opera del medico P. Wierbitzky (Nekovář, 2008). Tuttavia le prime osservazioni e registrazioni sistematiche dello sviluppo delle piante in questa regione sono legate all'istituzione, nel 1851, dell'Istituto Austriaco per la Meteorologia e il Geomagnetismo. Sebbene il significato storico di queste osservazioni sia alto, i dati registrati sono di bassa qualità, con frequenti interruzioni e frammentati. Ulteriore sviluppo alle osservazioni fenologiche venne dalla metodologia delle osservazioni introdotta da Karl Fritsch all'inizio degli anni '60, ma soprattutto con l'istituzione del Servizio Meteorologico Ungherese, nel 1871. I dati del periodo 1871-1885 furono registrati e pubblicati negli annali e, nonostante il carattere frammentario delle registrazioni, possono essere utilizzati per alcune valutazioni. Questo articolo presenta la descrizione dei dati della rete fenologica sistematica nella regione dei Carpazi e discute alcune possibili valutazioni fenologiche.

Parole chiave: fase fenologica, sviluppo della pianta, calendario fenologico

Introduction

Phenological observations have a long history. The oldest known phenological records in Central Europe are most probably the records about the vine harvest. One of them started as early as 1457 in Vienna which is on the border of Carpathian region (Lauscher, 1985).

Nevertheless, the first systematic phenological observations started in south Carpathians almost four hundred years later in consequence of the establishment of Austrian and later of Hungarian phenological network. The development and publishing of the guidelines for phenological observations by K. Fritsch (Fritsch, 1854), who also got a position at the Austrian Institute for Meteorology and Geomagnetism and run the observations, was very important for starting the systematic observation. The Fritsch's guidelines were updated a few times. In 1863 he reduced the number of plants as well as the number of phenological phases to be observed with the recommendation to observe and to record the beginning

(first appearance) of the phenological phase. The only exception was the phase of fall of leaves where the records should mention the "full" phase. He also recommended to monitor only one single individual and not the plant community. This methodology was also applied at the Hungarian phenological network by Moritz Staub since 1871. The data were collected once a year and published in the yearbooks with a delay of 2-3 years, together with the records of climatological observations. Both plant and animal phenological observations were recorded. Because of the fragmented character of the data only the records of plant phenology will be discussed in this article. There are some works from central Europe prolonging the agrometeorological evaluations to the 19th century (Možný *et al.*, 2007), but as recognized in a survey on history and current status of phenology in Europe ((Nekovář *et al.* 2008) phenological evaluations from the 19th century are rather rare.